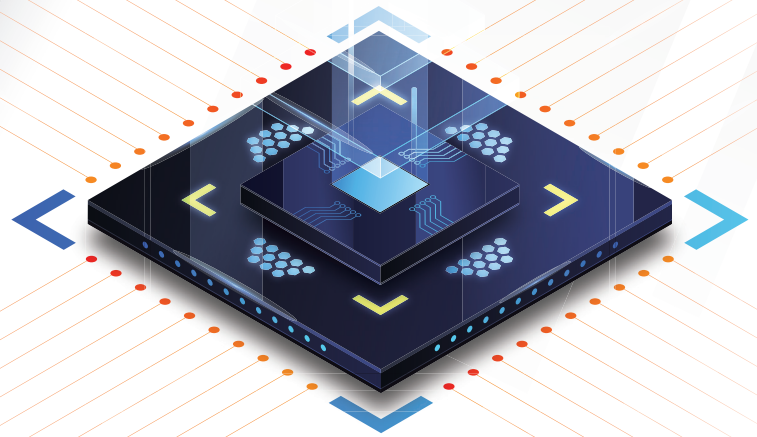


# ISRO IPRs



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**INDIAN SPACE RESEARCH ORGANISATION**  
DEPARTMENT OF SPACE



# ISRO IPRs

**Capacity Building and Public Outreach (CBPO)**

**Indian Space Research Organisation**

Department of Space, Government of India  
Antariksh Bhavan, New BEL Road, Bengaluru-560094

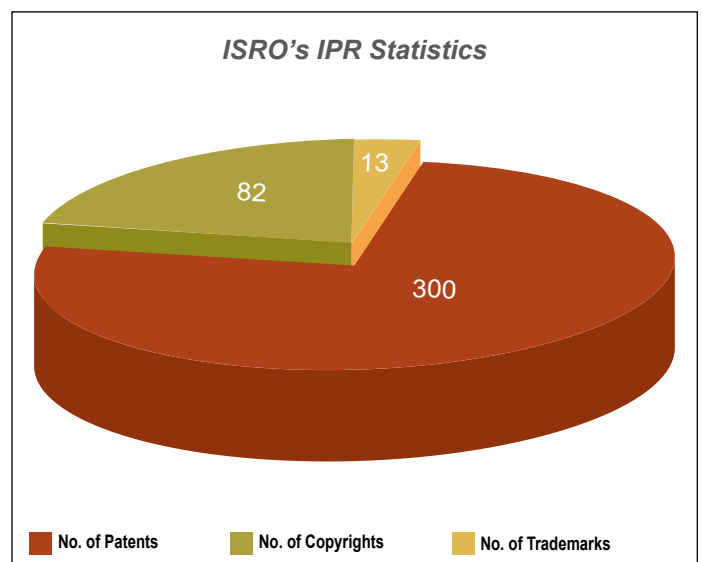
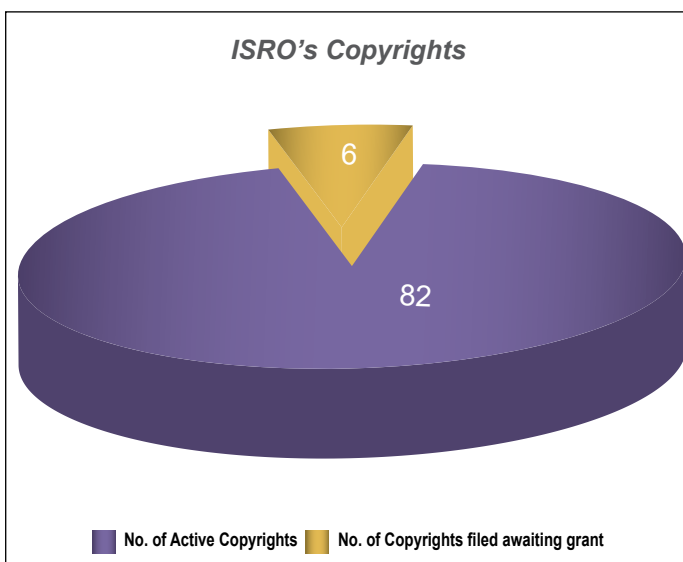
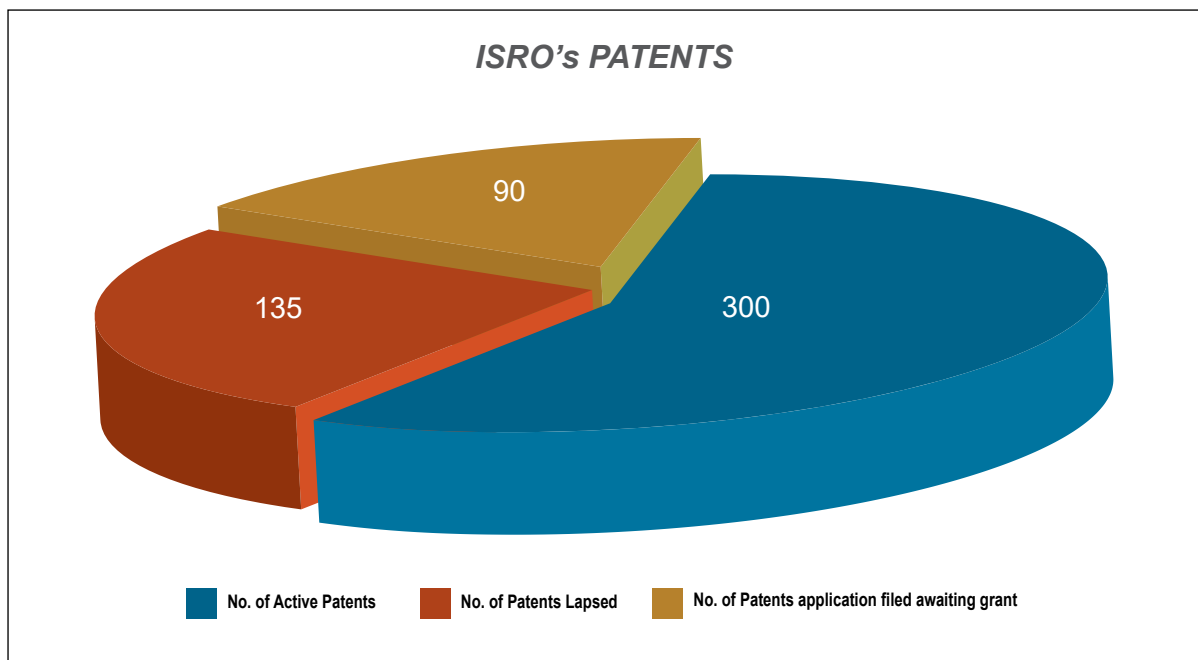
April 2024





## Executive Summary

ISRO has filled over 500 patents across various technology domain, such as electronics, mechanical, optics, chemical, etc., As of now, the ISRO patent portfolio has 300 active patents, with 90 applications are under at various stages of examination at the Indian patent office.





S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
1	SAC	A method for processing spaceborne sliding spotlight synthetic aperture radar signal for extended azimuth coverage	201926	30/08/2006
2	VSSC	A method for noise reduction in data acquisition systems	204289	13/02/2007
3	VSSC	A process-safe detonator	205207	22/03/2007
4	VSSC	Linear electro-mechanical actuator	205710	09/04/2007
5	VSSC	A breach mechanism for conducting simulating tests for bird hit on aircraft	210199	25/09/2007
6	VSSC	A room temperature curable flame retardant composition	206764	11/05/2007
7	VSSC	A process for the synthesis of siloxane-imide-epoxy resins	216620	17/03/2008
8	VSSC	A process for producing siloxane polymers having atomic oxygen resistance and a method of producing articles coated therewith	216622	17/03/2008
9	VSSC	Method and system for pulsed signal strength measurement in Radio Frequency signals	217004	24/03/2008
10	VSSC	A method and a system for a multi-channel current monitoring	220157	16/05/2008
11	VSSC	A process for the synthesis of siloxane imide-epoxy resins	228944	13/02/2009
12	SAC	A Control Circuit for Diode Based RF Circuits	229296	16/02/2009
13	SAC	A system and a method for secured data communication in computer networks by phantom connectivity	230732	27/02/2009
14	SAC	A Single Aperture Multimode Tracking Cum Communication Feed System	230737	27/02/2009
15	SAC	A device for compensating the effect of temperature variation on brightness of light emitting diodes	235617	09/07/2009
16	SAC	A device and method of making mechanically active parabolic microwave antenna	241032	16/06/2010



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
17	SAC	A Device for Feeding Multimode Monopulse Signals from Antennas for Tracking Satellites	243174	28/09/2010
18	VSSC	A vibration damping system for spacecraft mechanisms	243504	21/10/2010
19	SDSC SHAR	A Method of Producing an Inhibition Compound for Solid Propellant Motors	243555	25/10/2010
20	VSSC	A plasma Generator of high thermal energy for evaluating heat insulation materials at high temperatures	237839	11/01/2010
21	VSSC	An integrated system and a method for controlled drying / curing of chemicals such as propellants and explosives	244987	28/12/2010
22	SAC	Microwave Antenna Reflectors	247886	30/05/2011
23	LPSC	Liquid Depletion Sensor	248462	18/07/2011
24	SAC	A dual-channel rotary joint for space-borne scanning antennas	248944	13/09/2011
25	VSSC	A portable digital holographic system	247506	12/04/2011
26	VSSC	A Slow Burning Composite Solid Propellant Composition and a Process of Making the Same	250645	16/01/2012
27	VSSC	A system and method for calibrating signal processing electronics	251042	17/02/2012
28	SAC	A segmented shaped multibeam reflector antenna	251718	29/03/2012
29	SAC	A High Gain Wideband Planar Microstrip Array Antenna at C Band for Space Borne Application	251970	18/04/2012
30	SAC	Multimode prime focal feeds for highly efficient elliptical beams for microwave sensors	252111	26/04/2012
31	VSSC	A method of manufacturing lightweight, honeycomb metallic thermal protection panels	253455	24/07/2012
32	VSSC	High purity porous silica fiber-silica matrix composite and a method of manufacturing thereof	253851	29/08/2012



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
33	SAC	A method for passive damping on composite materials	254253	10/10/2012
34	VSSC	An adhesive composition and a process for bonding rubber to metals and alloys	256945	16/08/2013
35	SAC	A method for simultaneously generating pencil beam and shaped beam from a single shaped reflector	257011	26/08/2013
36	VSSC	GPS based programmable search and rescue beacon	260245	15/04/2014
37	VSSC	Method of processing NiTi base shape memory alloys	261445	25/06/2014
38	SAC	A method for processing a plurality of Internet Protocol (IP) packets at a Digital Video Broadcast- Return Channel via Satellite (DVB-RCS) hub	262894	23/09/2014
39	VSSC	Mechatronic Test Rig for Actuators	263550	31/10/2014
40	URSC	A process for pulse hard anodizing of aluminum and its alloys	263789	20/11/2014
41	SAC	A single-gridded dual-reflector antenna	263784	20/11/2014
42	VSSC	A system comprising hardware configurations for testing erasable programmable logic devices	265350	19/02/2015
43	VSSC	A method and system for generating a generic test suite for Field Programmable Gate Arrays	265352	19/02/2015
44	SAC	A test structure for testing electronic sub-assemblies of space applications under thermo-vacuum conditions	265413	24/02/2015
45	SAC	A UHF Miniature meandered microstrip patch antenna for mobile communications and Method of Production thereof	266801	03/06/2015
46	SAC	Filters utilizing combination of TE and modified HE mode dielectric resonators	265805	18/03/2015
47	SAC	A wideband sector shaped beam antenna	266322	27/04/2015



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
48	VSSC	An analog compensation method and system for reducing distortion in a data acquisition system	264544	05/01/2015
49	VSSC	A temperature resistant ceramic coating composition for ceramic substrates, method of coating substrates therewith and articles coated thereby	266653	25/05/2015
50	SAC	A Method of Collimation of Active Array Antenna	266750	29/05/2015
51	SAC	An improved method for obtaining flat pass band response in a surface acoustic wave (SAW) filter	267108	26/06/2015
52	VSSC	An apparatus and a method for venting fluids and gases	267701	29/07/2015
53	VSSC	A system for testing integrated electronic devices by real time simulation and acquisition of data	267780	30/07/2015
54	VSSC	A method for demodulation of a composite/single FSK modulated signal	265143	10/02/2015
55	VSSC	A Process for Solventless Synthesis of Resinous Borosiloxane Oligomer Precursors for Ceramics	277874	02/12/2016
56	VSSC	A Metal Injector and a Process for producing alloys containing highly reactive metals	271289	15/02/2016
57	SAC	A System and Method for Converting Near-Field Antenna Data into Far-Field Antenna Pattern	272096	17/03/2016
58	SAC	Dual Polarized Antenna with multilevel hybrid beam forming network for high power	272809	27/04/2016
59	VSSC	Suntracking Radiometer	273358	31/05/2016
60	SAC	Printed quasi-tapered tape helical array antenna	273866	30/06/2016
61	VSSC	Miniaturized High Frequency DC-DC Converter	271815	07/03/2016
62	VSSC	Method of producing low loss ceramics	275251	30/08/2016





S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
63	VSSC	Process and Apparatus of Producing a Composite Paper Tube	276018	28/09/2016
64	VSSC	A System for Automatic Verification of Usage Worthiness of Flash Memory Hardwares used in Computers	276137	30/09/2016
65	VSSC	Fibre Reinforced Composites with Toughened Epoxy Matrix and a Process for Preparing the Same	276350	17/10/2016
66	NARL	A boundary layer micro pulse lidar system	271947	11/03/2016
67	VSSC	System and method for detecting and isolating faults in pressure sensing of Flush Air Data System (FADS)	274857	11/08/2016
68	VSSC	A process for producing high density sintered silicon carbide	279280	17/01/2017
69	SAC	Non linear microwave pulsed power amplifier and method for amplifying microwave signal	279509	24/01/2017
70	SAC	A sensor and data logger based system and method for real-time monitoring, processing and prediction of weather information	279733	30/01/2017
71	VSSC	Aromatic Bisether Diamines having Pendant Diphenyl Phosphine Oxide and a Process for Preparing the Same	279815	31/01/2017
72	VSSC	Fabricated Electrodes for Supercapacitors in High Pulse Power Applications	282179	31/03/2017
73	URSC	Annular Retroreflective photogrammetric target for mesh surfaces	282911	28/04/2017
74	VSSC	Seal-rings of Turbo-pumps for feeding liquid propellants into rocket-engines and method of producing the same	283575	25/05/2017
75	VSSC	Method of casting thin webbed propellant grains and a system for casting the same	283729	30/05/2017
76	SAC	Circuit for compensating gain variation over operating frequency and/or temperature range	284294	16/06/2017



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
77	LPSC	Fiber Optic Liquid Level Detector	282878	30/06/2017
78	VSSC	An Apparatus and Method of Simulating Rotor Blade Failure	281167	08/03/2017
79	SAC	A method for track steering for azimuth compression of high resolution Synthetic Aperture Radar (SAR) on an aircraft	289474	10/11/2017
80	VSSC	A Satellite Separation System and a Method Thereof	288546	20/10/2017
81	URSC	A Process for Low Voltage, Room Temperature Hard-Anodizing of Aluminium Alloys	289029	31/10/2017
82	VSSC	Method of calibrating a data acquisition system for resistive input	292302	30/01/2018
83	URSC	A Process For Forming A Corrosion Resistant Oxide Coating On Magnesium Alloys	295389	02/04/2018
84	VSSC	A Device and a Method for Casting Allow Billets Conforming to Ultrasonic Standards	295517	05/04/2018
85	VSSC	A Device and Method for Characterisation and Bond-Evaluation of Soft/Brittle Porous Materials	298050	25/06/2018
86	VSSC	Fiber-Reinforced Ceramic Matrix Composite Material with Polymer Derived Interface Coating	299956	14/08/2018
87	VSSC	A Device for Testing The Presence and Level of Soluble Pollutants in Water	302049	09/10/2018
88	SAC	Symmetrical branching Ortho Mode Transducer (OMT) with enhanced bandwidth	301707	29/09/2018
89	SAC	High Directivity Microstrip Directional Couplers	298736	11/07/2018
90	VSSC	A Method of Estimating Frequency Domain Response in Vibration Testing and a System thereof	304378	13/12/2018
91	VSSC	Precursor based Ceramic Coating and Adhesive Compositions for High Temperature Applications	304496	14/12/2018



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
92	VSSC	A Method of Brazing Tisal2.5sn-Eli Alloy	305174	01/01/2019
93	SAC	A Method and a Device for Evaluation of Phase and Gain Characteristics of a Transmit Receive Module	305296	03/01/2019
94	VSSC	A Method for Removal of Propellant from a Case Bonded Motor	305325	03/01/2019
95	VSSC	Vulcanizable Epoxy Composition and Process for Preparing the same	312266	03/05/2019
96	VSSC	Method of Producing Sheets and Foils from Brittle Metallic Alloys	315483	03/07/2019
97	VSSC	A Reactor Assembly for Continuous Production of Ammonium Perchlorate	309912	26/03/2019
98	VSSC	Acrylic Based Pressure Sensitive Adhesive Compositions	310288	28/03/2019
99	VSSC	A Flame Retardent Polymer-Ceramic Hybrid Coating Composition	315551	04/07/2019
100	LPSC	Pressure regulator with double controls	324546	06/11/2019
101	VSSC	Control Actuation System for Aerospace Vehicles and a Method thereof	314967	27/06/2019
102	VSSC	Metallo-Ceramic Adhesive Composition	324651	07/11/2019
103	VSSC	Method of producing a seamless conical component of Titanium alloy	316444	19/07/2019
104	VSSC	Nanoclay Dispersed Polyurethane Coating Composition and a Process for its Preparation	316475	19/07/2019
105	LPSC	Compact pilot operated command valve with self aligning poppets	316652	23/07/2019



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
106	VSSC	Device for non-destructive bond-evaluation of soft/brittle porous tiles in noisy environments using sweeping-frequency ultrasonic waves	312451	08/05/2019
107	VSSC	Hypergolic Earth Storable Liquid Bi-Propellant Composition with Reduced Toxicity	319030	26/08/2019
108	VSSC	A Telemetry Receiving System for Establishing Direct Communication between Spacecrafts and/or Probes	320867	19/09/2019
109	LPSC	Sit-On-Umbilical System for Remote Fluid Servicing of Launch Vehicles	322509	10/10/2019
110	VSSC	Process for Multilayer Thermal Barrier Coating for Protection of Metallic Substrates from Extreme Temperature Conditions	322018	16/10/2019
111	VSSC	High Temperature Resistant Reactive Thermoplastic Toughened Bismaleimide Based Resin System and Composites thereof	322883	16/10/2019
112	VSSC	A Facile Method for Preparation of Superhydrophobic Powders and Coating Compositions Comprising them	323844	29/10/2019
113	VSSC	Method of Welding Thin Wires	324122	31/10/2019
114	VSSC	A Pyrotechnic Pressure Generating Composition For Different High Performance Pyro Devices	326236	28/11/2019
115	URSC	A Power Control System with Single Inductor Integrated Battery Charger Fully Regulated Bus (IBCFR) and the Method thereof	311153	12/04/2019
116	SAC	Wideband Waveguide Turnstile Junction Based Microwave Coupler and Monopulse Tracking Feed System	331104	03/02/2020
117	NARL	Raman Lidar System for Measurement of Atmospheric Water Vapour	333818	03/03/2020
118	HQ / IISc	Method of communicating signal data in GNSS using LDPC convolution codes and a system thereof	335137	18/03/2020



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
119	VSSC	Method of Charging Pyrogen Igniters for Space Applications	334195	09/03/2020
120	VSSC	Process of producing carbon/carbon composite	331700	11/02/2020
121	LPSC	Fluid Level Indicator	333246	27/02/2020
122	VSSC	A compact force motor for producing high force output	334366	11/03/2020
123	URSC	LSS-ISAC-1 Highland Lunar Soil Simulant and a Method for its Manufacture	336998	18/05/2020
124	VSSC	Process for Preparing Carbon/Silicon Carbide Composites	337549	29/05/2020
125	VSSC	A Liquid Cooling And Heating Garment	338868	19/06/2020
126	URSC	Rotary Drive Actuator	318075	13/08/2019
127	VSSC	Room temperature processable oxidation resistant coating material	337418	01/01/2020
128	VSSC	A process for the conversion of carbon nanotube to silicon carbide coated carbon nanotubes and SiC nanorod using polyborosiloxanes	338705	18/06/2020
129	VSSC	Method of machining silica tiles for thermal protection of re-entry space vehicles	340448	04/07/2020
130	VSSC	A Composition for Phenolic ablative composites providing very high yield of strong char	341790	16/07/2020
131	SAC	A Circuit with a pair of CRLH Transmission Lines	342024	20/07/2020
132	SAC	Cross pin tuning mechanism for cross coupled filter	345811	01/09/2020
133	SAC	A Novel Method For Sequential Information Condensation Using Fourier Basis	346206	07/09/2020





S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
134	SAC	A planar microstrip based compact ultra-broadband power divider/combiner	346574	11/09/2020
135	VSSC	A Process for Cork-Phenolic Resin Composite sheets with controlled Physical, Mechanical, Thermal and Ablative properties	347223	21/09/2020
136	URSC	Process of cable network and mesh fabrication and assembly for use in large deployable antenna	351087	06/11/2020
137	SAC	Broadband Waveguide Junction	352073	25/11/2020
138	VSSC	A solvent-less, hydrophobic composition for non-curable, anti-galvanic corrosion coating	352079	24/11/2020
139	VSSC	Spherical silica shells with fibrous internal network through hybrid microwave heating	352169	25/11/2020
140	URSC	Clamping System For Attaching Spacecraft With Matching Interfaces	354471	24/12/2020
141	SAC	Method for generating modulation signals for a satellite navigation system	355353	06/01/2021
142	IISU	In-Situ Monitoring Of Plasma Polishing Process By Using Optical Emission Spectrometer	356489	22/01/2021
143	LPSC	Presurisation initiation valve with Telescopic Actuator Bellow for GH2 Application	357575	02/02/2021
144	LPSC	Telescopic chatter free poppet check valve	357705	03/02/2021
145	VSSC	A travelling rotary station setting tool for jigs of aircraft like structures	358031	09/02/2021
146	VSSC	A single coat rubber modified phenolic adhesive for dissimilar substrates	359262	24/02/2021



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
147	SAC	Adaptable and flexible temperature compensation mechanism for RF microwave resonator cavity	360008	02/03/2021
148	SAC	Method and Apparatus for Generating Parity Check Matrix using Quasi-Cyclic Ldpc Generator Polynomial for Navigation Signal	360055	02/03/2021
149	VSSC	Process for oxidation resistant silicon carbide coating for carbonaceous hot structures via preceramic route	361023	12/03/2021
150	VSSC	Fiber miliing equipment	362366	22/03/2021
151	VSSC	Method for uninterrupted operation of high pressure water electrolysis system	368027	31/05/2021
152	VSSC	Carbon-silicon carbide composites and a method for their manufacture	369606	18/06/2021
153	VSSC	A novel process technology for achieving zero effluent in manufacturing of Ammonium Perchlorate	370746	30/06/2021
154	LPSC	Expulsion Enhancing device for propellant tank (XED)	371127	05/07/2021
155	HQ / IISc	Generation of ionospheric profiles	371139	05/07/2021
156	VSSC	A syntactic foam composition and a method of preparation thereof	371608	09/07/2021
157	VSSC	Retention devices for floating D-sub miniature right angle connectors	371719	12/07/2021
158	URSC	Modular Fixtures For Spacecraft Assembly and Integration with Their Degrees of Freedom	373044	28/07/2021
159	VSSC	Energy absorption cartridge	373231	29/07/2021
160	VSSC	Fast burning composite solid propellants with low catalytic residue	375625	01/09/2021



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
161	SAC	A novel BCH generation polynomial for navigation signal	376683	08/09/2021
162	VSSC	A process for Synthesis of Hydrophobic Silica Aerogel	377053	17/09/2021
163	URSC	A mechanism for dual range mass and centre of mass measurement	377624	23/09/2021
164	VSSC	MEMS based sensor for measuring acoustic pressure	378187	29/09/2021
165	VSSC	Method for manufacturing of hermetically sealed higher capacity high performance lithium ion cells	378259	29/09/2021
166	SAC	Tri-band Compact Circularly Polarized Coaxial Horn feed for deep dish prime focus reflector antenna systems	378494	01/10/2021
167	SAC	Design of Broadband Waveguide Circulator @Ka-Band	378566	04/10/2021
168	VSSC	Test Machine for Evaluating Equip-Biaxial Tensile Properties of a Test Specimen	378653	05/10/2021
169	VSSC	Lithium Supercapattery with stacked or wound negative and positive electrodes sets along with separator	379123	11/10/2021
170	VSSC	Method of producing strong ductile joints for 20K applications	379534	21/10/2021
171	VSSC	Radiosonde System with User Configurable Altitude and Time Based Shut Down	379871	25/10/2021
172	VSSC	A process for producing Silica Aerogel based composite	381889	16/11/2021
173	VSSC	A system and method for launching multiple satellites from launch vehicle	381696	12/11/2021
174	VSSC	Flanged Joint Configuration for Metallic Nozzle Convergent to Carbon-Carbon Divergent Nozzle for Solid Motor	382674	25/11/2021
175	VSSC	Gas powered Mechanical Ventilator	382571	25/11/2021
176	ISRO HQ - IISc	Method and system for generating spreading codes based on interleaved z4-linear sequences for navigation systems	383332	30/11/2021



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
177	VSSC	An apparatus for measuring elastic properties of materials and methods thereof	384366	15/12/2021
178	SAC	Dielectric resonator based filter using TE mode	384493	16/12/2021
179	VSSC	Nozzle exit closure system separable by electrically initiated pyro system	385942	04/01/2022
180	IISU	A monolithic metallic flexure proof mass and inductive pickoff based servo acceleration sensing unit	386430	12/01/2022
181	URSC	Splitting of folded beam using resilient spring member in Telescopic arrangement for low frequency vibration isolator	386506	13/01/2022
182	SAC	An Electrical Interconnection Design as Vertical Connection with Printed Circuit Board	386685	17/01/2022
183	SAC	A Novel method for strip-map SAR technology with very high resolution like spotlight SAR	387827	28/01/2022
184	LPSC	A Latching Solenoid Valve	387840	28/01/2022
185	VSSC	Left Ventricle Assist Device (LVAD)	389051	11/02/2022
186	VSSC	A method of modelling and compensating temperature drift in amplifier circuits	389150	14/02/2022
187	SAC	A novel soft SBOC & LDPC based LLR decoding algorithm	389567	17/02/2022
188	VSSC	Method of producing large diameter to thickness ratio dome of Titanium Alloy in solution treated and aged condition	389599	17/02/2022
189	SAC	A method of Non-Contact Hermetic Sealing of LTCC modules with pulsed Laser	389511	17/02/2022
190	IISU	A Method and Set-up for Determination of pressure and composition of a gas discharge	389825	21/02/2022
191	VSSC	An imaging system for 3-dimensional profile, full-field displacement and strain mapping and a method there of	390993	02/03/2022
192	SCL & IIT Mandi	A Process for i-line resist dissolution modulation using Hydroxy-Styrene Based ter-Polymer	391608	09/03/2022
193	URSC	An antenna steering mechanisms with self hold down features for communication spacecraft	393573	30/03/2022
194	NARL	Dual Polarization Lidar System	394875	18/04/2022



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
195	SAC	high Power-Compatible, Passive Intermodulation-Free Focal Plane Helix Feed Array Antenna	395342	25/04/2022
196	SAC	Spurious Resonating Mode Suppression using Inbuilt Spurious Suppressor in Preselect Filters	397061	18/05/2022
197	VSSC	A Method And Apparatus For Measuring The Resistance Of Squib/ Pyro Elements In High Explosive Applications	397330	21/05/2022
198	VSSC	Room temperature curable	398180	31/05/2022
199	VSSC	Room temperature curable, low-density	398501	03/06/2022
200	VSSC	Ultra-Low Solar Absorptive And High IR Emissive Thermal Control Coating Through A Non-Aqueous Route	398827	09/06/2022
201	SAC	Novel Technique for Aerosol Retrieval over Land using Partially Sensitive Spectral Channels	399227	15/06/2022
202	URSC	A System Enabling Real Time Lossless Compression of Telemetry (TM) Data of a Satellite, Said System Comprising	399043	13/06/2022
203	VSSC	A Process for the Preparation of Highly Porous and Hard Anhydrous Lithium Hydroxide Pellets for CO <sub>2</sub> Gas Absorption	400104	27/07/2022
204	LPSC	Pressure Regulation System with Variable Set Pressure and Ramping	401646	20/07/2022
205	VSSC	A coupling system comprising	401805	21/07/2022
206	VSSC	Space grade syntactic foam composition and a process for preparation	402283	28/07/2022
207	VSSC	A Method of Fabrication of Polyimide Pipelines for Cryogenic Applications	373678	03/08/2021
208	VSSC	Dispensing System for Sea Marker Dye	397554	25/05/2022
209	VSSC	Process for the production of Catalyst grade nano sized alpha – ferric oxide as propellant burn rate enhancer	374887	19/08/2021
210	VSSC	An Optimum Quality Composite Facilitating Thermal Protection and Method of Manufacturing Thereof	403022	04/08/2022
211	VSSC	A Shearography System and a Method for Generating Shearograms Thereof	403106	05/08/2022
212	SCL	Wide Bandgap Semiconductor Device with Gate Structure and Manufacturing Methods thereof	403360	11/08/2022





S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
213	VSSC	A Tool for Disconnecting connector Plugs from Sockets	403685	17/08/2022
214	VSSC	Explosive Actuated Multi Stand Cable Cutting Shut Off Valve	403970	19/08/2022
215	VSSC	A Process for Producing Carbon-Carbon Composite Through Film Boiling Chemical Vapour Infiltration	363869	31/03/2021
216	VSSC	Electrostatic Pick Pen	369991	23/06/2021
217	LPSC	A Telescopic Precision and Chatter Free Thread Tapping System	405781	05/09/2022
218	VSSC	Novel Inhibition Composition for Solid Rocket Motors	406246	09/09/2022
219	VSSC	A Room-temperature Curable	407445	23/09/2022
220	URSC	A System and a Method for Measuring Mass Properties of Objects	407621	26/09/2022
221	NRSC	Dual Polarised, S and X Band Monopulse Feed for Tracking Leo Satellites	409231	18/10/2022
222	VSSC	A Space Compatible Device for Locating Objects Deployed at Sea	409447	20/10/2022
223	VSSC	Method of Recycling Lead Dioxide Flakes and Electrochemical Cells made Thereof	413324	01/12/2022
224	VSSC	A system for detecting and isolating faults in a Flush Air Data System (FADS)	416296	30/12/2022
225	VSSC	Process for Crystallisation and Separation of Sodium Perchlorate from Electrolysed Sodium Chlorate Solution	416984	06/01/2023
226	URSC	Novel Technique for Detecting Inner Layer Misalignment and Achieving Best Fit Registration in Multilayer PCB	419063	24/01/2023
227	VSSC	Method of Producing High Permittivity, Low Loss and Thermally Stable Dielectric Ceramics	421647	14/02/2023
228	VSSC	Triazole Crosslinked High Burn Rate Defect Free Solid Propellants Based on Polymeric Azide Binder	422282	17/02/2023
229	ADRIN	A System and Method of Acquiring Data from Multiple Cartosat Satellites Simultaneously, Generation and Visualisation of Level 1A Products in Real Time	422594	21/02/2023
230	SAC	Novel Spraying Technique for the Improvement in Electrical Conductivity of CFRP	423370	27/02/2023



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
231	URSC	Mechanically Generated Blind-Via PCB Process Technology for High Density Interconnect (HDI) Electronics	422520	21/02/2023
232	URSC	A Process for Achieving High Emittance and High Absorptance Coating on Additive Manufactured Alloy	425670	17/03/2023
233	SAC	Multiplexed Digital Modulator for High Throughput Satellites and its Methods Thereof	425798	20/03/2023
234	URSC	A method for manufacturing a regular hexagonal honeycomb core using composite materials	425897	20/03/2023
235	URSC	A Reflector Assembly and a Method of Constructing Thereof	427295	28/03/2023
236	URSC	Dual-lever rigidisation mechanism with a self-hold down Feature for autonomous docking of spacecraft	428216	03/04/2023
237	SAC	Broadband Sine-Square Profiled Slot Coupled Ortho Mode Transducer	428821	12/04/2023
238	URSC	Peripheral Low Impact Retraction and Separation Mechanism with Self-Hold Down Feature for Autonomous Docking of Spacecraft	429030	17/04/2023
239	URSC	Deployable Boom Assembly	429143	17/04/2023
240	VSSC	A Satellite Dispensing System for Cubesat	429355	19/04/2023
241	VSSC	System and Method for Reconfiguration of A Relay Driving Scheme in Quad Redundant Configuration	431260	09/05/2023
242	LPSC	Spacecraft Fueling and Pressurization System Based on Remote Operation Concept	432002	17/05/2023
243	LPSC	Methods and Systems For Precision Machining of A Helical Compression Spring to Achieve Geometrical Parameters	432496	22/05/2023
244	VSSC	A System for payload separation	432799	24/05/2023
245	VSSC	Apparatus for Accurate and Safe Measurement of Resistance	433015	26/05/2023
246	LPSC	A Hall Effect Thruster with Co-Axial Coil	433426	31/05/2023
247	VSSC	A Thermal Control Coating Composition for Passive Temperature Control and Method for Preparing the Same	434151	08/06/2023
248	LPSC	Snap-Off Single Port Umbilical for Inert Gas Servicing	435475	26/06/2023



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
249	VSSC	Method for Coating a Hardware with Polychlorotrifluoroethylene	435667	26/06/2023
250	VSSC	Dielectric Ceramic Composition, Its Derivatives and Methods for Preparing Them	437391	05/07/2023
251	VSSC	A Dual Tandem Servo Valve System	437455	05/07/2023
252	VSSC	A Configuration using Retainer Ring Concept for Connecting Motor Case to Nozzle in A Solid Rocket Motor	438243	11/07/2023
253	LPSC	Method and apparatus for voltage scaling in ZVZCS DC-DC converter	440340	25/07/2023
254	VSSC	Dual Mode Power Feed Through	441031	28/07/2023
255	VSSC	Fixture for testing leaded less RF and micro wave devices	441962	31/07/2023
256	VSSC	Oxazolidone modifies epoxy film adhesive compositon	445154	16/08/2023
257	URSC	System and Methods for Controlling Inspired Oxygen and Positive End Expiratory Pressure in Ventilators	449104	01/09/2023
258	SAC	Autonomous frequency jump detection and correction for on-board navigation payload	449198	02/09/2023
259	VSSC	A device and method for measuring gas permeability	450756	11/09/2023
260	SAC	Unified Hybrid Horn Antenna (UHHA)	451697	14/09/2023
261	VSSC	Flexible Detonating Cord	456860	05/10/2023
262	URSC	An Electromechanical S-Band Microwave Rotary Joint Assembly for High Power Applications	459040	13/10/2023
263	VSSC	Expanding Tube Assembly for Explosive Separation Systems	462208	26/10/2023
264	VSSC	An Unmanned System for Autonomous Recovery of An Incoming Object and A Method Thereof	465800	04/11/2023
265	SAC	Method and Device for Fragmenting Virus/Microbes using RF Radiation at Resonance Frequency	465801	04/11/2023
266	VSSC	Support Free Monolithic Spherical Gas Bottle for Storing Gases	465913	06/11/2023
267	VSSC	A Digital Interface Circuit for Resistive Bridge Type Sensors Abstract	467853	09/11/2023
268	VSSC	Un-Symmetric Tang and Clevis Joint Configuration	469546	16/11/2023



S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
269	VSSC	Multi-Point Simultaneous Initiator	470967	21/11/2023
270	VSSC	High Pressure Equipment for Measuring Burn Rate of Solid Propellants Using Ultrasonic Pulse Echo Technique	472767	24/11/2023
271	URSC	Method for Flat Absorber Black Titania (Tio <sub>2</sub> ) Coating on A Substrate By Plasma Electrolytic Oxidation	472838	24/11/2023
272	SCL	A Method to Optimize the Performance of A Wide Band Gap Semiconductor Device and its Fabrication Technique	474283	29/11/2023
273	IISU	A Method of Dynamic Balancing of A Payload Mechanism with Unsymmetrical Rotor Under Orbital Conditions on Ground	475791	30/11/2023
274	VSSC	A Device for In-Situ Load Testing of Crimped Bearings and Potted Inserts	477717	06/12/2023
275	IISU	Refractive optics based Ring Laser Gyroscope	477751	06/12/2023
276	VSSC	A Process for Polymer-Derived Cf/SiBOC Ceramic Matrix Composites	480151	11/12/2023
277	LEOS	Immersed Thermistor Bolometer for Spacecraft Earth Sensors Application	481843	13/12/2023
278	URSC	A Filter Wheel Drive Mechanism for Spacecraft Payloads	480818	12/12/2023
279	URSC	Process of RF Reflective Mesh Gore Fabrication for Large RIB type Deployable Antenna	483456	15/12/2023
280	VSSC	Dissociable Coupling Assembly for Explosive Transfer Lines	496837	10/01/2024
281	IISU	A Method and an Apparatus for Detachment of Soldered Surface Mount Devices (SMDs)	497513	10/01/2024
282	VSSC	Pre-Ceramic Adhesive Composition Providing Stronger Bonds at Higher Temperatures and Process for Preparing The Same	498737	12/01/2024
283	VSSC	Method of Repairing Defective Regions in a Cured Solid Propellant by Slurry Casting Process	499002	13/01/2024
284	VSSC	A Process for Preparing a Composite Cathode for Lithium Ion Cell	499404	15/01/2024





S.No	ISRO Centre / Unit	Product/Title	Patent No	Date
285	URSC	System and Method to Learn and Reconstruct Large Reference Images/Dem Onboard using Machine Learning	499576	16/01/2024
286	URSC	A Mechanism for Incorporating Dual Capacity in a Machine for Mass and Centre of Gravity Measurement	499980	16/01/2024
287	VSSC	Oxygen Emanating Composite Solid Propellants	500758	18/01/2024
288	SAC	MMIC True Time Delay Shifter Circuit	503777	27/01/2024
289	VSSC	A Method for the Realization of Dense Isotropic HBORON NITRIDE and its Silica Composite	504606	30/01/2024
290	VSSC	An Aluminium based pyrotechnic Igniter composition	506114	01/02/2024
291	VSSC	A Process for Preparing a Composite Anode for Lithium Ion Cell	507282	05/02/2024
292	URSC	Composite Sandwich Panels with Embedded Metallic Tubes and a Method of Manufacturing Thereof	509787	12/02/2024
293	ISRO	Method and system for determining optimal attitude trajectory and optimal control for satellite attitude manoeuvres	510833	14/02/2024
294	VSSC	A Connector Screw Lock Device	515580	27/02/2024
295	VSSC	A Hybrid Thruster	518479	01/03/2024
296	VSSC	Process for the Synthesis of Regenerable Sorbents for Carbon Dioxide Removal	519288	04/03/2024
297	VSSC	Low-Dielectric Ceramic Composition and a Process of Producing the Same	521467	07/03/2024
298	VSSC	High-Dielectric Ceramic, a Process of Producing the Same and Compact Ceramic Patch Antennas made Thereof	523792	12/03/2024
299	VSSC	An Actuator Assembly for a Ring Laser Gyroscope	527751	15/03/2024
300	VSSC	Cryo Digital Level Sensor Electronics (CDLSE)	529149	19/03/2024





Title of Patent	Centre	Indian Patent No	PCT Number	National Phase Filling No	Country
Method for manufacturing of hermetically sealed higher capacity high performance lithium ion cells	VSSC	378259	PCT/IN2019/050224	16/980,404	USA
				10-2020-7029241	South Korea
				19771105.4	Europe
				2020-550742	Japan
				201980020392.9	China
A System and Method for Launching Multiple Satellites from a Launch Vehicle	VSSC	381696	PCT/IN2019/050344	281696	Israel
				110000796	Japan
				352293308	China
				19865304.0	Europe
				17/279,232	USA
System and Method for Detecting Faulty Pressure Measurements in Flush Air Data System using Pressure Patterns Among Adjacent Ports	VSSC	416296	PCT/IN2019/050246	2021108797	Russia
				16/768,905	USA
				19806435.4	Europe
				2020104027	Russia
				2020-504244	Japan
Triple Input Smart Power Supply (TRISP) for desktop PC and other systems using DC as final power source	VSSC	201641004989	PCT/IB2017/050729	201980004667.X	China
				16/071,909	USA
				3007601	Canada
				EP 17710797.6	Europe
				11201805460Q	Singapore
Fiber Optic Liquid Level Detector	LPSC	282878	PCT/IN2009/000677	2018-531458	Japan
				2018-03989	South Africa
				10-1721236	South Korea
				8,735,856 B2	USA
				2510490,	Russia
				"200980160787.5"	China
				JP 5563072	Japan



Title of Patent	Centre	Indian Patent No	PCT Number	National Phase Filling No	Country
System and method for detecting and isolating faults in pressure sensing of flush air data system (FADS)	VSSC	274857	PCT / IN2009/000349 17.6.2009	8930062 & 9211961	USA
				ZL200980120614	CHINA
				RU2498320C2	RUSSIA
				EP2422204 (Germany No. 602009020335.5)	EUROPE (UK, Germany, France, Italy, Spain and Sweden)
A process for preparing a composite anode for lithium ion cell	VSSC	507282	PCT/ IN2020/050591	20854556.6	Europe
				10-2022-7008167	Korea
				2022- 511046	Japan
				17/636,363	USA
A control circuit for diode based RF circuits	SAC	229296	PCT/IN03/00265	2005-507356	Japan
Filters using combination of TE and a novel implemetation of HE mode dielectric resonators	SAC	265805	PCT/ IN2009/000219	13/138,312	USA
Printed quasi tapered tape helical array antenna for space use	SAC	273866	PCT/ IN2009/000517 22.09.2009	9444148	USA
				GB2485310 11 2009 005 121	UK Germany
Bose-Chadhuri-Hocquenghem (BCH) Polynomial and Method for Generating a Bch Encoded Signal for High Performance Navigation Signal	SAC	376683	PCT/ IN2021/050922	USA: 18/261,040	USA
A system and method for secured data communication in computer networks by Phantom Connectivity	SAC	230732	PCT / IN01/000140	200718008-6	Singapore

List of Copyrights

List of Trademarks



## SAC

1

**A method for processing spaceborne sliding spotlight synthetic aperture radar signal for extended azimuth coverage**

201926

The invention provides a method of processing for extending azimuth coverage for a spaceborne SAR operating in sliding spotlight mode. Two major difficulties in processing such data, namely large range cell migration (RCM) and rapidly changing Doppler rate along azimuth. This method assumes that the complete azimuth stretch will be processed in different blocks. Majority of RCM will be corrected in time domain by Bulk RCM correction and a corresponding phase compensation will convert the data to a strip-map one. However, in the resultant stripmap data, the Doppler rate drifts along the azimuth and the drift is prominent as one moves away from spot center. A resampling mechanism, applicable in both time and frequency domain, depending upon the matched filter domain, is suggested which enables stripmap processing over a block of data with linearly drifting Doppler rate.



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PATENT  
(RULE - 74)

No. D - CHE/ 1145

No. 201926

of

30/01/2004

Whereas INDIAN SPACE RESEARCH ORGANISATION, ISRO HEADQUARTERS, DEPARTMENT OF SPACE, ANTARIKSH BHAVAN, NEW BEL ROAD, BANGALORE 560 094, KARNATAKA, INDIA, A GOVERNMENT OF INDIA ORGANISATION

has/have declared that he is/they are in possession of an invention for  
**A METHOD FOR PROCESSING SPACEBORNE SLIDING SPOTLIGHT SYNTHETIC APERTURE RADAR SIGNAL FOR EXTENDED AZIMUTH COVERAGE**

and that he is/they are the true and first inventor(s) thereof (or the legal representatives(s) or assignee(s) of the true and the first inventor(s)) and that he is/they are entitled to a patent for the said invention, having regard to the provisions of the Patents Act, 1970, as amended and that there is no objection to the grant of a patent to him/them.


And whereas he has/they have, by an application, requested that a patent may be granted to him/them for the said invention;

And whereas he has/they have by and in his/their complete specification particularly described the said invention and the manner in which the same is to be performed;

Now, these present(s) that the above-said applicant(s) (including his/their legal representative(s) and assignee(s) or any of them) shall, subject to the provisions of the Patents Act, 1970, as amended and the conditions specified in Section 47 of the said Act, and to the conditions and provisions specified by any other law for the time being in force, has/have the exclusive right to prevent third parties from making, using, offering for sale, selling or importing for those purposes the product in India/using the process and using, offering for sale, selling or importing for those purposes the product obtained, if any, directly by that process in India, for a term of twenty years from the 30th JANUARY 2004 and of authorizing any other person to do so, subject to the conditions that the validity of this patent is not guaranteed and that the fee prescribed for the continuance of this patent is duly paid.

In witness thereof, the Controller has caused this patent to be granted as of the THIRTIETH day of AUGUST, 2006.

Date of Grant : 30/08/2006



Controller of Patents





## VSSC

2

A method for noise reduction in data acquisition systems

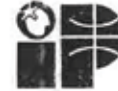
204289

The invention relates to a method for eliminating noise in data acquisition systems. The signal to be acquired is sampled and digitised at a rate that is several times the required sampling rate. Then the sample values are averaged to derive a single representative value that is free of the influence of high frequency random noise. To eliminate the effect of low frequency systematic noise, the number of samples to be averaged must be an integral multiple of  $f_s/f_n$  where  $f_s$  is the sampling frequency and  $f_n$  is the noise frequency. Over sampling of the input signal simplifies the anti-alias filter requirements. System calibration techniques may be employed to further reduce the effect of component non-linearities, offsets, reference errors etc. and a digital multiplier, to enhance the measurement range.



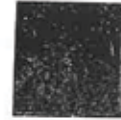


क्रमांक : 044 000131  
Sl. No. :



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Patent Certificate  
(Rule 74 of Patents Rules)



Patent No. : 204289  
Application No. : 48/CHE/2004  
Date of Filing : 22/01/2004  
Patentee : DEPARTMENT OF SPACE, ISRO

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR NOISE REDUCTION IN DATA ACQUISITION SYSTEMS as disclosed in the above mentioned application for the term of 20 years from the 22 day of JANUARY 2004, in accordance with the provisions of the Patents Act, 1970.

Date of Grant: 13/02/2007

  
Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 22 day of JANUARY 2006 and on the same day in every year thereafter.



## VSSC

3

A process-safe detonator

205207

The present invention provides a process safe IA/1W detonator with cylindrical housing with an open and a closed end. An initiator unit disposed at the open end of the hollow housing to provide a hot-wire sensitive pyrotechnic charge, a diaphragm member disposed by pasting on the said initiator unit, a stem channel extending from the initiator unit member to the closed end of the hollow housing disposed in said housing, Nickel Hydrazine Nitrate (NHN) acting as a low friction sensitive primary explosive disposed in said stem channel in proximity to the initiator unit to receive flame from the pyrotechnic charge of the initiator unit, a secondary high explosive disposed in functional contact with said Nickel Hydrazine Nitrate, to receive the explosive force for detonation, and a sealing member disposed on the open end of the hollow housing for effective sealing of the detonator.

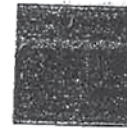


क्रमांक : 044 000276  
Sl. No. :



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Patent No. : 205207  
Application No. : 797/CHE/2004  
Date of Filing : 11/08/2004  
Patentee : DEPARTMENT OF SPACE, INDIAN SPACE  
RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS-SAFE DETONATOR, as disclosed in the above mentioned application for the term of 20 years from the 11 day of AUGUST 2004, in accordance with the provisions of the Patents Act, 1970.

Date of Grant: 22/03/2007

  
Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11 day of AUGUST 2006 and on the same day in every year thereafter.



## VSSC

4

Linear electro-mechanical actuator

205710

The present invention provides a linear Electro-mechanical actuator, said actuator comprising a motor with a hollow rotor and a stator housed in a covered body, a bearing housing disposed on both the ends of the covered body, angular contact ball bearings operably disposed in said bearing housing, a rotatable ballscrew-nut lock integrated with the rotor, said ballscrew-nut having an internal thread profile, a tubular screw-guide with internal key-ways with shock absorbing means axially extending from the covered body, a hollow and non-rotating ballscrew-shaft having a linear motion and with a threaded outer profile axially extending towards the screw-guide and terminating with a plurality of linearly movable ballscrew locking keys, said locking keys disposed in the key-ways of the screw-guide to convert the rotary motion of rotor into linear motion or the ballscrew-shaft, said ballscrew-nut and ballscrew-shaft are thread integrated to each other, a tubular linear variable differential transformer (LVDT) with a non-contacting probe, said LVDT disposed in said non-rotating ballscrew-shaft, said probe acting as a sensor is directly connected to the ballscrew shaft to sense the linear movement of the ballscrew-shaft and to provide a corresponding alternate current (AC) voltage output to an external electronic control unit, and an attenuation card in functional communication with LVDT is mounted on the screw-guide to adjust the scale factor of the sensor.





क्रमांक : 044 000398  
Sl. No. :



सत्यमेव जयते

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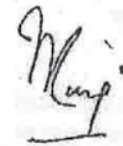


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Patent No. : 205710  
Application No. : 768/CHE/2004  
Date of Filing : 05/08/2004  
Patentee : DEPARTMENT OF SPACE

It is hereby certified that a patent has been granted to the patentee for an invention entitled LINEAR ELECTRO-MECHANICAL ACTUATOR as disclosed in the above mentioned application for the term of 20 years from the 5 day of AUGUST 2004, in accordance with the provisions of the Patents Act, 1970.



Date of Grant: 09/04/2007

Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 5 day of AUGUST 2006 and on the same day in every year thereafter.





## VSSC

5

**A breach mechanism for conducting simulating tests for bird hit on aircraft**

210199

The present invention relates to a breach mechanism for conducting simulating tests for bird hit on aircraft comprising a mild detonating cord (MDC), a diaphragm and a triggering device held between, a holder (2) with a groove on its inner face and a lid (3), a high explosive material in a linear explosive cord with an initiator (4) for triggering and detonating with its propagation velocity, thereby causing the diaphragm to cut off by guillotine action.



क्रमांक : 044 002158  
Sl. No. :



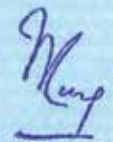
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Patent No. : 210199  
Application No. : 197/MAS/2003  
Date of Filing : 10/03/2003  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A BREACH MECHANISM FOR CONDUCTING SIMULATING TESTS FOR BIRD HIT ON AIRCRAFT as disclosed in the above mentioned application for the term of 20 years from the 10 day of MARCH 2003, in accordance with the provisions of the Patents Act, 1970.

Date of Grant: 25/09/2007

  
Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 10 day of MARCH 2005 and on the same day in every year thereafter.



## VSSC

6

A room temperature curable flame retardant composition

206764

A room temperature curable flame retardant composition comprises a linear organo polysiloxane, a silane compound, a metallic salt of a carboxylic acid, an inorganic filler such as silicon carbide, an organo phosphate and traces of platinum or platinum containing complex.

This invention also includes a curable polysiloxane containing composition which contains polysiloxane and an inorganic filler such silicon carbide, an organo phosphate and traces of platinum or platinum containing complex.

A composition for curing the above composition containing an alkyl oximo silane, aminoalkyl tri alkoxy silane and a metallic salt of a carboxylic acid.





क्रमांक : 044 000661  
Sl. No. :




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Patent Certificate  
(Rule 74 of Patents Rules)**

Patent No. : 206764  
Application No. : 110/MAS/2003  
Date of Filing : 07/02/2003  
Patentee : INDIAN SPACE RESEARCH  
ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A ROOM TEMPERATURE CURABLE FLAME RETARDANT COMPOSITION** as disclosed in the above mentioned application for the term of 20 years from the 7 day of **FEBRUARY 2003**, in accordance with the provisions of the Patents Act, 1970.

Date of Grant: 11/05/2007

  
Controller of Patents

**Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 7 day of FEBRUARY 2005 and on the same day in every year thereafter.**



## VSSC

7

A process for the synthesis of siloxane-imide-epoxy resins

216620

This invention relates to a process for the synthesis of siloxane-imide-epoxy resins. An imide diacid is reacted with epoxy resins under known polymerization conditions. Either the imide-diacid, the epoxy resin or both the imide-diacid and the epoxy resin may contain siloxane linkages. The invention also includes a process for the synthesis of siloxane-imide-epoxy resin through epoxidation of siloxane containing diimide-diacid followed by curing with epoxy resin curatives.

The resins obtained by the above processes show excellent resistant to atomic oxygen and may be used in coating composites and films used in low earth orbit satellites and space stations.





क्रमांक : 044 4362  
Sl. No. :



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**Patent No. : 216620**  
**Application No. : 278/MAS/2002**  
**Date of Filing : 12/04/2002**  
**Patentee : INDIAN SPACE RESEARCH  
ORGANISATION**

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A PROCESS FOR THE SYNTHESIS OF SILOXANE-IMIDE-EPOXY RESINS** as disclosed in the above mentioned application for the term of 20 years from the 12 day of APRIL 2002, in accordance with the provisions of the Patents Act, 1970.

**Date of Grant: 17/03/2008**

  
**Controller of Patents**

**Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 12 day of APRIL 2004 and on the same day in every year thereafter.**



## VSSC

8

**A process for producing siloxane polymers having atomic oxygen resistance and a method of producing articles coated therewith**

216622

This invention relates to a process for producing siloxane polymers from end-functionalized siloxane oligomers. Siloxane oligomers having different end functional groups are polymerized in a known manner to obtain a polymer having a crosslinked network of siloxane linkage ranging from at least 1 to 20 units separated by organic moieties in the range of 1 to 10. These polymers exhibit very high atomic oxygen resistance and are useful in coating components for satellites and space stations to protect them against atomic oxygen attack.

This invention also includes a method of producing a coated article having atomic oxygen resistance.



क्रमांक : 044 4364  
Sl. No. :

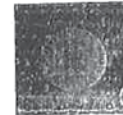


सत्यमेव जयते

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INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



Patent No. : 216622  
Application No. : 279/MAS/2002  
Date of Filing : 12/04/2002  
Patentee : INDIAN SPACE RESEARCH  
ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR PRODUCING SILOXANE POLYMERS HAVING ATOMIC OXYGEN RESISTANCE AND A METHOD OF PRODUCING ARTICLES COATED THEREWITH as disclosed in the above mentioned application for the term of 20 years from the 12 day of APRIL 2002, in accordance with the provisions of the Patents Act, 1970.



Date of Grant: 17/03/2008

Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 12 day of APRIL 2004 and on the same day in every year thereafter.



## VSSC

9

Method and system for pulsed signal strength measurement in Radio Frequency signals

217004

A system for accurately measuring the pulsed signal strength in radio frequency signals with long off-time and short on-time, said system comprising a receiver to receive input radio frequency signals with long-off time and short-on time, a high-speed sampler cum holder to sample the non-uniform input signals and generate sampled periodic pulses, a memory unit to store the sampled periodic pulses, a high-speed analog to digital converter to convert the sampled periodic pulses into binary patterns, a database unit with a range of pre-determined limiting values and past records, a processor to compare the binary patterns with a range of limiting values stored in the database unit, said processor to store the middle value of the binary patterns, said processor to compare the middle value of binary patterns with past records to generate the final value of signal strength, a digital to analog converter to reconvert said binary patterns into analog signals, and an output device to display the final value of the signal strength of the radio frequency signals. The present invention also provides a method for measuring pulsed strength.



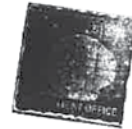


क्रमांक : 044 4462  
Sl. No. :



INTELLECTUAL  
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GEOGRAPHICAL INDICATIONS

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Patent No. : 217004  
Application No. : 844/CHE/2004  
Date of Filing : 24/08/2004  
Patentee : DEPARTMENT OF SPACE, INDIAN SPACE  
RESEARCH ORGANISATION (ISRO)

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD AND SYSTEM FOR PULSED SIGNAL STRENGTH MEASUREMENT IN RADIO FREQUENCY SIGNALS as disclosed in the above mentioned application for the term of 20 years from the 24 day of AUGUST 2004, in accordance with the provisions of the Patents Act, 1970.



Date of Grant: 24/03/2008

Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 24 day of AUGUST 2006 and on the same day in every year thereafter.





## VSSC

10

**A method and a system for a multi-channel current monitoring**

220157

The present invention relates to a system (Fig 1) to obtain multi-channel current events and to reconstruct the current events that occur over multiple channels. The system makes use of Hall Effect sensors to convert the current pulse to voltage signals, signal conditioning and digitization circuitry to convert the data to digital format with varying sample rates in the former and latter parts of the pulse, thresholding logic to detect 'significant' events in current channels and digital logic to time-stamp and communicate the data corresponding to various channels to a Central Controller for further transmission. The system of the present invention also adopts event-based monitoring and packetised data transmission that enables simultaneous acquisition of large number of channels with considerable reduction in data rate. The present invention also provides a method for obtaining multi-channel current events and then transmitting the information in digital format to enable reconstruction of multi-channel current events.



क्रमांक : 044 005203  
Sl. No. :



**INTELLECTUAL  
PROPERTY INDIA**  
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GEOGRAPHICAL INDICATIONS

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THE PATENT OFFICE  
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Patent Certificate  
(Rule 74 of Patents Rules)**

**Patent No.** : 220157  
**Application No.** : 97/CHE/2004  
**Date of Filing** : 09/02/2004  
**Patentee** : INDIAN SPACE RESEARCH  
ORGANISATION (ISRO)

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A METHOD AND A SYSTEM FOR A MULTI-CHANNEL CURRENT MONITORING** as disclosed in the above mentioned application for the term of 20 years from the 9 day of FEBRUARY 2004, in accordance with the provisions of the Patents Act, 1970.

**Date of Grant:** 16/05/2008

  
**Controller of Patents**

**Note.-**The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 9 day of FEBRUARY 2006 and on the same day in every year thereafter.



## VSSC

11

A process for the synthesis of siloxane imide-epoxy resins

228944

The present invention relates to a process for the synthesis of siloxane imide-epoxy resin comprising of reacting a siloxane containing diimide-diacid with epichlorohydrin under epoxidation conditions in the presence of a quaternary ammonium halide catalyst and thereafter recovering the resin.



क्रमांक : 044 008774  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
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GEOGRAPHICAL INDICATIONS

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Patent Certificate  
(Rule 74 of Patents Rules)

Patent No. : 228944  
Application No. : 1002/CHE/2005  
Date of Filing : 12/04/2002  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : SHANMUGAM PACKIRISAMY,GINU ABRAHAM,DEEPA DEVAPAL,RAJAGOPALAN RAMASWAMY,KOVOOR NINAN ,KUCHIBHATLA SITARAMA SASTRI

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR THE SYNTHESIS OF SILOXANE-IMIDE-EPOXY RESINS as disclosed in the above mentioned application for the term of 20 years from the 12 day of APRIL 2002, in accordance with the provisions of the Patents Act,1970.

Date of Grant: 13/02/2009

  
Controller of Patents

Note.-The fees for renewal of this patent,if it is to be maintained , will fall / has fallen due on 12 day of APRIL 2004 and on the same day in every year thereafter.





## SAC

12

A Control Circuit for Diode Based RF Circuits

229296

The present invention relates to a control circuit for diode based RF circuit comprising two or more analog commutating devices (2,3) having a plurality of digital control lines (A0,A1,A2,B0,B1,B2), a plurality of selectable poles (X0-X15) and one common pole, characterized by the digital control lines being connected to a digital data generator (4) and the selectable poles and at least one common pole (CP) being connected to the control terminal (s) (CT) of the diode(s) of the RF circuit (6) through a network of resistors (8-21), of differing values and a potential divider (22) and a power supply (25) or voltage source or a network of potential dividers of differing outputs and a power supply or voltage source, the analog commutating device establishing an internal coupling between the common pole and one of the selectable poles depending upon the digital value generated by the digital data generator and appearing at the digital control lines.

***This Patent is also registered in Japan***





क्रमांक : 044 009249  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

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Patent No. : 229296  
Application No. : 466/CHENP/2006  
Date of Filing : 04/08/2003  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A CONTROL CIRCUIT FOR DIODE BASED RF CIRCUITS as disclosed in the above mentioned application for the term of 20 years from the 4 day of AUGUST 2003, in accordance with the provisions of the Patents Act, 1970.

Date of Grant: 16/02/2009

  
Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 4 day of AUGUST 2005 and on the same day in every year thereafter.



## SAC

13

**A system and a method for secured data communication in computer networks by phantom connectivity**

230732

The present invention provides a system for providing a higher level security to data communication in computer networks, said system comprising; an organizational network, at least a third party network, at least a phantom server with an intermediate data storage, a toggling means disposed to isolate the organizational network from the third party network and said toggling means further disposed to permit secured data communication between the organizational network and the third party network through the phantom server. A method for providing a higher level security to data communication in computer networks by effecting the transmission of data between organizational network and the third party network by toggling means through phantom server.

***This Patent is also registered in Singapore***



क्रमांक : 044 010140  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
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GEOGRAPHICAL INDICATIONS

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Patent No. : 230732  
Application No. : 1190/CHE/2006  
Date of Filing : 07/07/2006  
Patentee : DEPARTMENT OF SPACE, ISRO

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SYSTEM AND A METHOD FOR SECURED DATA COMMUNICATION IN COMPUTER NETWORKS BY PHANTOM CONNECTIVITY as disclosed in the above mentioned application for the term of 20 years from the 7 day of JULY 2006, in accordance with the provisions of the Patents Act, 1970.

Date of Grant: 27/02/2009



Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 7 day of JULY 2008 and on the same day in every year thereafter.





## SAC

14

**A Single Aperture Multimode Tracking Cum Communication Feed System**

230737

A multimode monopulse tracking scheme uses circular wave guide higher order modes, TE<sub>21</sub> & Orthogonal-TE<sub>21</sub> (TE<sub>21</sub>\*), to generate pointing errors in azimuth and elevation planes respectively, while the dominant TE<sub>11</sub> mode is utilized to generate tracking sum signal as well as communication transmit and receive signals. The feed system requires a single radiating aperture (a conical or a corrugated horn); an innovative and compact cascaded turnstile-junction based multimode coupler for providing efficient coupling of orthogonal TE<sub>21</sub> modes, A wave guide taper and a dual band OMT.



क्रमांक : 044 010145  
Sl. No. :



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Patent No. : 230737  
Application No. : 2295/CHE/2006  
Date of Filing : 11/12/2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : DR. S.B. SHARMA, RAJEEV JYOTI, SHASHANK SAXENA, R.R. PATEL

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SINGLE APERTURE MULTIMODE TRACKING CUM COMMUNICATION FEED SYSTEM as disclosed in the above mentioned application for the term of 20 years from the 11 day of DECEMBER 2006, in accordance with the provisions of the Patents Act, 1970.

Date of Grant: 27/02/2009

Controller of Patents

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11 day of DECEMBER 2008 and on the same day in every year thereafter.





## SAC

15

**A device for compensating the effect of temperature variation on brightness of light emitting diodes**

235617

The invented device comprises a D.C. power supply (PS), a voltage regulator (1), voltage dividing resistors (2 and 3), an operational amplifier (4), a current booster transistor (9), resistor (8) for controlling base current of current booster transistor (9) and resistors (5 and 6) for adjusting voltage gain of operational amplifier (4), characterized in that the device is provided with either a single register (7) or multiple (n) resistors [7(1), 7(2),-----7(n)], n being an integer varying from 2 to 21, and the value of each said resistor being predetermined in a method, such as herein described, a switch (12) for selecting one of multiple (n) resistors [7(1), 7(2),----7(n)] at a time, and a dimmer unit.



क्रमांक : 044 10778  
Sl. No. :



सत्यमेव जयते

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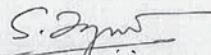


INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS




Patent No. : 235617  
Application No. : 1591/CHE/2006  
Date of Filing : 01/09/2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : SUBHASH CHANDRA BERA, RAJVIR SINGH, VINESH KUMAR GARG

It is hereby certified that a patent has been granted to the patentee for an invention entitled A DEVICE FOR COMPENSATING THE EFFECT OF TEMPERATURE VARIATION ON BRIGHTNESS OF LIGHT EMITTING DIODES as disclosed in the above mentioned application for the term of 20 years from the 1 day of SEPTEMBER 2006, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 09/07/2009

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 1 day of SEPTEMBER 2008 and on the same day in every year thereafter.



## SAC

16

A device and method of making mechanically active parabolic microwave antenna

241032

The invention relates to a method of making mechanically active parabolic microwave antennae having polycarbonate reflector skins. It consists of metal beams disposed at  $90^\circ$  from each other. The beams have actuatable piezoelectric bimorphs disposed thereon and means for holding flat antenna body when the flat body is mounted and the piezoelectric body is actuated, parabolic bending of the body results.



क्रमांक : 044 12396  
Sl. No. :




INTELLECTUAL  
PROPERTY INDIA  
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GEOGRAPHICAL INDICATIONS

भारत सरकार  
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Patent Certificate  
(Rule 74 of Patents Rules)




Patent No. : 241032  
Application No. : 1464/CHE/2006  
Date of Filing : 18/08/2006  
Patentee : DEPARTMENT OF SPACE, ISRO  
Inventor(s) : DR PVBAS SARMA, B S MUNJAL, CYRIL  
MACWAN, DR H V TRIVEDI

It is hereby certified that a patent has been granted to the patentee for an invention entitled A DEVICE AND METHOD OF MAKING MECHANICALLY ACTIVE PARABOLIC MICROWAVE ANTENNA as disclosed in the above mentioned application for the term of 20 years from the 18 day of AUGUST 2006, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 16/06/2010

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 18 day of AUGUST 2008 and on the same day in every year thereafter.



## SAC

17

**A Device for Feeding Multimode Monopulse Signals from Antennas for Tracking Satellites**

243174

The device for feeding multimode monopulse signals from antennas for tracking satellites comprises: (i) a single antenna (A) having reflector (R), subreflector (S) and horn (H); and (ii) a feeder (B) of multimode monopulse signals, containing a smooth-walled cylindrical waveguide (C) connected co-axially to antenna reflector (R) at one end, and at the other end to a cylindrical waveguide (D) having a tapered end which is co-axially connected to another cylindrical waveguide (E) of diameter equal to that of the said tapered end to allow passage of the signals of dominant mode only. Two pairs of longitudinal slots are milled on the wall waveguide (C) for decoupling signals of higher modes only. The slots of each pair are disposed in diametrically opposite positions and at angular displacement of  $45^\circ$  between the two pairs of slots with respect to the axis of the waveguide. The axial separation between the two pairs of slots is half the waveguide wavelength of the signals propagated.





क्रमांक : 044 12318  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

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Patent No. : 243174  
Application No. : 379/CHE/2007  
Date of Filing : 23/02/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : DR S B SHARMA, ANIL KUMAR PANDEY, S B CHAKRABARTY

It is hereby certified that a patent has been granted to the patentee for an invention entitled **COMPACT MULTIMODE TRACKING FEED FOR SATELLITE TRACKING** as disclosed in the above mentioned application for the term of 20 years from the 23 day of FEBRUARY 2007, in accordance with the provisions of the Patents Act, 1970.

Controller of Patents

Date of Grant: 28/09/2010

Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 23 day of FEBRUARY 2009 and on the same day in every year thereafter.



## VSSC

18

A vibration damping system for spacecraft mechanisms

243504

The invention is with respect to a Multiple Mass Tuned Mass Damper (MMTMD) mounted on inertial actuator flywheels or mechanism rotors, which are supported by precision ball bearings. The MMTMD is incorporated in order to protect the ball bearings from rocket launch induced resonant vibration loads. The invention consists of a damper assembly, which is fixed to the rotor whose resonant vibration is to be damped/attenuated. Typically Tuned Mass Dampers (TMD) are used to attenuate the amplitude at a particular frequency such as constant running speed. However, if the frequency is marginally varied, the TMD fail to perform/degrade, as the tuning will not be valid. The invention discloses a MMTMD configured so as to be usable in precision rotating rotors such as inertial actuators and mechanisms in spacecrafts. The invention consists of either integral or fastened damper rings, which are designed to act as multiple damper arms/beams with respective masses. The fastening location is chosen such that when the damper rings vibrate, the nodal points are attained at these locations. The vibration damping is achieved by the action of tuned mass damper beams.



क्रमांक : 044 12515  
Sl. No. :



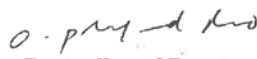
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Patent No. : 243504  
Application No. : 317/CHE/2007  
Date of Filing : 15/02/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A VIBRATION DAMPING SYSTEM FOR SPACECRAFT MECHANISMS as disclosed in the above mentioned application for the term of 20 years from the 15 day of FEBRUARY 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 21/10/2010

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 15 day of FEBRUARY 2009 and on the same day in every year thereafter.



## SDSC SHAR

19

**A Method of Producing an Inhibition Compound for Solid Propellant Motors**

243555

The method comprises: (a) preparing pre-mix of composition (by weight%) of Chlorinated Rubber Powder 25 to 27 %, Castor oil 69 to 72 %, Phenyl  $\beta$ -Naphthyl Amine 1.0 to 1.5% and Ferric Oxide 0.5 to 1.0%, in a Muller mixer and a horizontal Sigma mixer; (b) Transferring the predefined amount of premix into no. of containers (batches), (c) preparing final-mix of composition (by weight %) of pre-mix 82.6 to 84.2 %, Toluene Di Isocyanate 14.3 to 15.2 % and Ferric Acetyl Acetate in Benzene solution 1.4 to 1.7 %, and mixing the composition in a semi fluid state in containers (batches); (d) pouring the final-mix onto solid propellant motors; and (e) allowing the final mix to cure and solidify on the solid propellant motors.





क्रमांक : 044 14013  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
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GEOGRAPHICAL INDICATIONS

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Patent Certificate  
(Rule 74 of Patents Rules)



Patent No. : 243555  
Application No. : 678/CHE/2007  
Date of Filing : 30/03/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : SATISH KUMAR PS, VENKATESWARARAO V, SOMESWARA RAO, DATHAN MC

It is hereby certified that a patent has been granted to the patentee for an invention entitled "A METHOD OF PRODUCING AN INHIBITION COMPOUND FOR SOLID PROPELLANT MOTORS" as disclosed in the above mentioned application for the term of 20 years from the 30 day of MARCH 2007, in accordance with the provisions of the Patents Act, 1970.

INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

Controller of Patents

Date of Grant: 25/10/2010

Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 30 day of MARCH 2009 and on the same day in every year thereafter.





## VSSC

20

**A plasma Generator of high thermal energy for evaluating heat insulation materials at high temperatures**

237839

The plasma generator disclosed comprises cathode (1), main anode (6), a pilot anode, an intermediate anode, primary port (2), secondary ports (4), input power source (8), a cooling system, a gas supply system, plasma stabilising means (3,5), characterised in that means (3) are conductor rings, means (5) are insulator discs, power source (8) is adapted to supply power up to 1 MW, the cooling system is adapted to circulate deionized water through jackets, and the gas supply system is adapted to supply pressurised gases through ports (2, 4).



क्रमांक : 044 12367  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

भारत सरकार  
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Patent Certificate  
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Patent No. : 237839  
Application No. : 1711/CHE/2006  
Date of Filing : 19/09/2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : LEKSHMANAN PILLAI ARAVINDAKSHAN  
PILLAI, PAZHAMPALAKODE ANANTHARAMAN  
KRISHNAMURTHY, NAVEEN CHANDRA  
PRABHU SREENIVAS

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PLASMA GENERATOR OF HIGH THERMAL ENERGY FOR EVALUATING HEAT INSULATION MATERIALS AT HIGH TEMPERATURE as disclosed in the above mentioned application for the term of 20 years from the 19 day of SEPTEMBER 2006, in accordance with the provisions of the Patents Act, 1970.



Controller of Patents

Date of Grant: 11/01/2010



Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 19 day of SEPTEMBER 2008 and on the same day in every year thereafter.



## VSSC

21

**An integrated system and a method for controlled drying / curing of chemicals such as propellants and explosives**

244987

This invention relates to an integrated system for drying / curing chemicals such as propellants / explosives. It consists of atleast one insulated chamber provided with heat exchangers. An overhead tank having heating means for heating fluids. Recirculating means are provided for circulating and recirculating fluids from the overhead tank to the heat exchanger in the insulated chambers which contain the material to be dried / cured. Temperature control and monitoring means, and control panels are provided for regulating the flow of fluid through the system.



क्रमांक : 044 14381  
Sl. No. :



सत्यमेव जयते



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

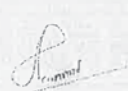
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**Patent Certificate**  
(Rule 74 of Patents Rules)

Patent No. : 244987  
Application No. : 802/CHE/2007  
Date of Filing : 16/04/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : RAMANATHAN MUTHIAH, THOPPIL LUKOSE VARGHESE, KOVOOR NINAN NINAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN INTEGRATED SYSTEM AND A METHOD FOR CONTROLLED DRYING/CURING OF CHEMICALS SUCH AS PROPELLANTS AND EXPLOSIVES as disclosed in the above mentioned application for the term of 20 years from the 16 day of APRIL 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 28/12/2010

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 16 day of APRIL 2009 and on the same day in every year thereafter.





## SAC

### 22 Microwave Antenna Reflectors

247886

This invention relates to microwave antenna reflectors made of flexible composite membranes such as carbon fibre reinforced plastic and glass fibre reinforced plastic composite body having a parabolic structure, the convex side thereof being coated with at least one layer of piezoelectric materials. The microwave antenna of this invention provides passive vibration damping effect.



क्रमांक : 044 13678  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

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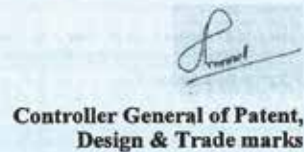


Patent No.	: 247886
Application No.	: 1809/CHE/2006
Date of Filing	: 28/09/2006
Patentee	: INDIAN SPACE RESEARCH ORGANISATION
Inventor(s)	: Dr S B SHARMA, B S MUNJAL, R K MALAVIYA, H M MISTRY, AC MATHUR, Dr PVBAS SARMA, CYRIL MACWAN, Dr H V TRIVEDI

It is hereby certified that a patent has been granted to the patentee for an invention entitled **MICROWAVE ANTENNA REFLECTORS** as disclosed in the above mentioned application for the term of 20 years from the 28 day of **SEPTEMBER 2006**, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 30/05/2011

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28 day of SEPTEMBER 2008 and on the same day in every year thereafter.



## LPSC

### 23 Liquid Depletion Sensor

248462

The liquid depletion sensor of the present invention senses the depleting levels of liquid(s) in a storage tank. The sensor comprises housing, a base member and a plurality of supporting members fixed to the base member. The sensor has a plurality of metallic discs, fixed to the supporting members by allowing them to pass through the circular passages on the discs. The supporting members extend from the peripheral disc to the base member. The pack of discs forms a set of parallel plate capacitors with insulating members disposed to form intervening gaps. A plurality of electrically conducting lugs is disposed on the discs to provide the capacitance from the discs to an external electronic means by means of lead wires. The sensor of the present invention uses the capacitance during depletion levels of the liquid, which is converted into voltage to determine the depleting levels of the liquid.



क्रमांक : 044 13685  
Sl. No. :




INTELLECTUAL  
PROPERTY INDIA  
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GEOGRAPHICAL INDICATIONS

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Patent Certificate  
(Rule 74 of Patents Rules)

Patent No. : 248462  
Application No. : 114/CHE/2005  
Date of Filing : 11/02/2005  
Patentee : DEPARTMENT OF SPACE

It is hereby certified that a patent has been granted to the patentee for an invention entitled **LIQUID DEPLETION SENSOR** as disclosed in the above mentioned application for the term of 20 years from the **11 day of FEBRUARY 2005**, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

  
Controller General of Patent,  
Design & Trade marks

Date of Grant: 18/07/2011

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11 day of FEBRUARY 2007 and on the same day in every year thereafter.





## SAC

24

**A dual-channel rotary joint for space-borne scanning antennas**

248944

The rotary joint comprises an upper cylindrical waveguide attached to rectangular waveguide having 90°-bend for one channel of input signal and to rectangular waveguide for the other channel of input signal, and a lower cylindrical waveguide attached to rectangular waveguides for one channel of output signal and to rectangular waveguides for the other channel of output signal, the top part of the said lower cylindrical waveguide being rotatably engaged with the bottom part of the said upper cylindrical waveguide in a ball bearing, and axial probe and two axial slots being provided in the said upper cylindrical waveguide for exciting respectively microwaves of modes TM<sub>01</sub> and TE<sub>01</sub> from microwaves of mode TE<sub>10</sub> fed through rectangular waveguides, and an axial probe and two axial slots being provided in the said lower cylindrical wave guide for converting respectively microwaves of modes TM<sub>01</sub> and TE<sub>01</sub> into microwaves of mode TE<sub>10</sub> delivered through rectangular waveguides and.



क्रमांक : 044 13718  
Sl. No. :



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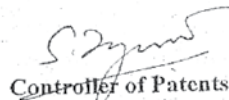
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(Rule 74 of Patents Rules)




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GEOGRAPHICAL INDICATIONS

Patent No. : 248944  
Application No. : 567/CHE/2007  
Date of Filing : 19/03/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A DUAL- CHANNEL ROTARY JOINT FOR SPACE - BORNE SCANNING ANTENNAS as disclosed in the above mentioned application for the term of 20 years from the 19 day of MARCH 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 13/09/2011

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 19 day of MARCH 2009 and on the same day in every year thereafter.



## VSSC

### 25 A portable digital holographic system

247506

The present invention is related to the digital imaging of holograms and real-time generation of holographic interferograms and shearograms based on the principle of digital holography for NDT related applications. The system is of modular design, consisting of an optical recording head and an image processor with real time digital hologram processing software. The recording head includes a device to generate two coherent waves, devices to control the intensity of reference beam and to adjust the object illumination, a mechanism to combine the object and reference waves forming an interference pattern at the recording plane and CCD/CMOS sensor. The detection device transfers the data to a processor, which does the real time digital reconstruction of the holograms, holographic interferograms and shearograms, which are displayed in the monitor. This data is used for non-destructive evaluation.



क्रमांक : 044 13621  
Sl. No. :




INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS


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(Rule 74 of Patents Rules)

Patent No. : 247506  
Application No. : 679/CHE/2007  
Date of Filing : 30/03/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : BINU PANACKAPARAMBIL  
THOMAS ,SUBRAMONIA PILLAI ANNAMALA  
PILLAI

It is hereby certified that a patent has been granted to the patentee for an invention entitled **PORTABLE REAL TIME DIGITAL HOLOGRAPHIC SYSTEM** as disclosed in the above mentioned application for the term of 20 years from the 30 day of **MARCH 2007**, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 12/04/2011

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 30 day of MARCH 2009 and on the same day in every year thereafter.





## VSSC

26

**A Slow Burning Composite Solid Propellant Composition and a Process of Making the Same**

250645

The present invention relates to a slow burning solid propellant composition as binder with low burning rate comprising hydroxyl terminated polybutadiene (HTPB), ammonium perchlorate as oxidizer and aluminium powder as metallic fuel, oxamide as ballistic modifier and at least one aromatic/aliphatic isocyanate as curing agents.

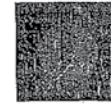


क्रमांक : 044 13292  
Sl. No. :




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PROPERTY INDIA  
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GEOGRAPHICAL INDICATIONS


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Patent No. : 250645  
Application No. : 467/CHE/2007  
Date of Filing : 07-03-2007  
Patentee : INDIAN SPACE RESEARCH  
ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SLOW BURN PROPELLANT COMPOSITION WITH HIGH PERFORMANCE CHARACTERISTICS as disclosed in the above mentioned application for the term of 20 years from the 7 day of MARCH 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

  
Controller General of Patent,  
Design & Trade marks

Date of Grant: 16/01/2012

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 7 day of MARCH 2009 and on the same day in every year thereafter.



## VSSC

27

**A system and method for calibrating signal processing electronics**

251042

The invention relates to a system having a random signal generator, which is fed to the input of a wide band voltage amplifier, which would amplify the noise in the microvolt level to a level specified as input signal level of the device under calibration (DUC). This amplified noise signal is a wide band signal having a wide range of frequencies. Hence the required band of interest that has to be used for calibration is filtered using appropriate filter. The filtered random signal is given as input to the DUC. A digital multi meter is used to exactly measure the rms voltage at the output of the filter. The output of the DUC in terms of digital count is acquired in a PC and the input-output ratio is computed as scale factor in  $\text{mV}_{\text{rms}}/\text{count}$ . A method of calibrating the signal processing electronics is also disclosed.



क्रमांक : 044 015405  
Sl. No. :




INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS


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**Patent Certificate**  
(Rule 74 of Patents Rules)



**Patent No.** : 251042  
**Application No.** : 763/CHE/2007  
**Date of Filing** : 11-04-2007  
**Patentee** : INDIAN SPACE RESEARCH ORGANISATION  
**Inventor(s)** : SETHUNADH REMANAN, TRICHUR  
KRISHNAN KRISHNAN, JAISHMI KIRUBA  
RAJATHI RABINDRAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A SYSTEM AND METHOD FOR CALIBRATION OF SIGNAL PROCESSING ELECTRONICS** as disclosed in the above mentioned application for the term of 20 years from the 11 day of APRIL 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

  
Controller General of Patent,  
Design & Trade marks

Date of Grant: 17/02/2012

**Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11 day of APRIL 2009 and on the same day in every year thereafter.**





## SAC

28

A segmented shaped multibeam reflector antenna

251718

A shaped, segmented multi beam reflector antenna comprising a single reflector segmented into separate surfaces, upper segments having higher focal lengths than the corresponding lower segments, said segments are shaped according to geophysical optics based interactive optimize operating in conjunction with mini max algorithm for simultaneous gain optimization and side lobe cancellation and individual clusters of feed horns for illuminating each of said segments to generate contiguous but inter based beams.



क्रमांक : 044 13880  
Sl. No. :




INTELLECTUAL  
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Patent Certificate  
(Rule 74 of Patents Rules)

Patent No. : 251718  
Application No. : 1874/CHE/2007  
Date of Filing : 22-08-2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : Dr. SHASHI BHUSHAN  
SHARMA, KHAGINDRA SOOD, RAJEEV  
JYOTI, BHARGAV NALINKANT PANDYA

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SEGMENTED SHAPED MULTI BEAM REFLECTOR ANTENNA as disclosed in the above mentioned application for the term of 20 years from the 22 day of AUGUST 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 29/03/2012

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 22 day of AUGUST 2009 and on the same day in every year thereafter.



## SAC

29

**A High Gain Wideband Planar Microstrip Array Antenna at C Band for Space Borne Application**

251970

The invention relates to a high gain wide band planar microstrip antenna at C band with dual polarization for space borne applications comprising of planar array of tiles, wherein each tile is a multilayer printed antenna comprising an upper patch (1), a lower patch (2), a thick dielectric foam (3), radome (4), substrate (5) for lower patch, ground plane (8), adhesive layers (9) a composite base plate (10), two buried feedlines (7), wherein the said tile is characterized by 480 electromagnetically coupled radiating elements arranged in 24 linear arrays of 20 radiating elements (16) and corporate feed network (17) of hybrid type to feed the radiating elements (16). The antenna is adapted to be installed in a Radar Imaging Satellite (RISAT) fitted with a Synthetic Aperture Radar (SAR) and to operate at frequency 5.35GHz with bandwidth of 225 MHz, gain of 44.5 dBi, beamwidth of  $0.5^{\circ}(\text{AZ}) \times 1.5^{\circ}(\text{EL})$ , cross polarization of -23dB and return loss of -15dB.



क्रमांक : 044 015568  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

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THE PATENT OFFICE  
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Patent Certificate  
(Rule 74 of Patents Rules)



Patent No. : 251970  
Application No. : 2139/CHE/2007  
Date of Filing : 21/09/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION, DEPARTMENT OF SPACE  
Inventor(s) : DR. SHASHI BHUSHAN SHARMA, VIJAY KUMAR SINGH, BALENDU KUMAR PANDEY, SANJEEV KULSHRESTHA, DR. SOUMYA BRATA CHAKRABARTY, RAJEEV JYOTI, SAMMIR SAKHARE

It is hereby certified that a patent has been granted to the patentee for an invention entitled **HIGH GAIN WIDEBAND PLANAR MICROSTRIP ANTENNA FOR SPACE BORNE APPLICATIONS** as disclosed in the above mentioned application for the term of 20 years from the 21 day of SEPTEMBER 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

  
Controller General of Patent,  
Design & Trade marks

Date of Grant: 18/04/2012

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 21 day of SEPTEMBER 2009 and on the same day in every year thereafter.





## SAC

30

**Multimode prime focal feeds for highly efficient elliptical beams for microwave sensors**

252111

This invention relates development a method and a elliptical multimode feeds, which are laterally displaced in the focal plane of a parabolic reflector of circular aperture in order to achieve two squinted elliptical beams with the required angular spacing. The asymmetry in the secondary beams is realized by illuminating the reflector with elliptic patterns of the elliptical feeds. The elliptical feeds yield different edge illumination tapers in the principal planes. The elliptical feeds consist of elliptical rings similar to the concept of circular coaxial feeds. The parameters of the feeds have been optimized to get the required amplitude and phase distribution in the dominant and higher order modes to synthesize sector shape elliptical radiation patterns.



क्रमांक : 044 015572  
Sl. No. :

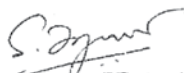



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Patent No. : 252111  
Application No. : 2173/CHE/2007  
Date of Filing : 26-09-2007  
Patentee : INDIAN SPACE RESEARCH  
ORGANISATION, DEPARTMENT OF  
SPACE  
Inventor(s) : DR. SHASHI BHUSHAN SHARMA, VIJAY  
KUMAR SINGH, DR. SOUMYA BRATA  
CHAKRABARTY, ANIL CHAND MATHUR

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF PROVIDING TWO SQUINTED BEAM FEEDS TO A MICROWAVE SENSOR AND A COMPOSITE ELLIPTICAL FEED as disclosed in the above mentioned application for the term of 20 years from the 26 day of SEPTEMBER 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

  
Controller General of Patent,  
Design & Trade marks

Date of Grant: 26/04/2012

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 26 day of SEPTEMBER 2009 and on the same day in every year thereafter.



## VSSC

31

**A method of manufacturing lightweight, honeycomb metallic thermal protection panels**

253455

This invention relates to lightweight honeycomb metallic thermal panels, which are reusable, heat resistant and are useful in making aerospace vehicle parts. Structures made from such panels are capable of with standing temperature conditions at re-entry of space vehicles. These panels are made from honeycomb structures, made from thin corrugated films of super alloys like NiCr alloy Titanium Aluminide and the like which are laser welded to form honey comb structures of the desired thickness. They are then sandwiched between two face plates, which are treated to withstand oxidation.



क्रमांक : 044 016165  
Sl. No. :



INTELLECTUAL  
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Patent No. : 253455  
Application No. : 2983/CHE/2007  
Date of Filing : 13-12-2007  
Patentee : INDIAN SPACE RESEARCH  
ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled **MANUFACTURING PROCESS TO REALIZE LIGHTWEIGHT INCONEL-718 PANELS FOR METALLIC THERMAL PROTECTION SYSTEM** as disclosed in the above mentioned application for the term of 20 years from the 13 day of DECEMBER 2007, in accordance with the provisions of the Patents Act, 1970.



Controller of Patents



Controller General of Patent,  
Design & Trade marks

Date of Grant: 24/07/2012

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 13 day of DECEMBER 2009 and on the same day in every year thereafter.





## VSSC

32

**High purity porous silica fiber-silica matrix composite and a method of manufacturing thereof**

253851

The invention describes a novel process for the preparation of high purity porous silica - silica composite for applications as a thermal protection material in the temperature range 1000°C to 1400°C. Silica/silica composite are prepared by leaching glass cloth with hydrochloric acid, rinsing to remove acid therefrom, vacuum drying, moulding and treating with ethyl silicate and cationic starch binder further drying and sintering.

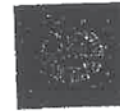


क्रमांक : 044 15277  
Sl. No. :



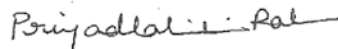
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

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Patent Certificate  
(Rule 74 of Patents Rules)



Patent No. : 253851  
Application No. : 47/CHE/2005  
Date of Filing : 19-01-2005  
Patentee : INDIAN SPACE RESEARCH ORGANISATION OF  
ISRO HEADQUARTERS  
Inventor(s) : MAPPILLATHARAYIL RAMAN  
AJITH, KANNUSWAMY GOVINDARAJU, MAHESH  
CHAND MITTAL, KUCHIBHATLA SITARAMA  
SASTRI

It is hereby certified that a patent has been granted to the patentee for an invention entitled HIGH PURITY POROUS SILICA FIBER - SILICA MATRIX COMPOSITE AND A METHOD OF MANUFACTURING THEREOF as disclosed in the above mentioned application for the term of 20 years from the 19 day of JANUARY 2005, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

  
Controller General of Patent,  
Design & Trade marks

Date of Grant: 29/08/2012

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 19 day of JANUARY 2007 and on the same day in every year thereafter.



## SAC

33

A method for passive damping on composite materials

254253

This invention relates to a method of passive vibration damping composite materials such as Kevlar & Graphite composites with embedded Kevlar flexcore at ambient & varying temperatures using surface activation technique of Plasma etching along with thin hybrid layers (on one side only) of high sensitivity ferro-electrically soft & hard piezoelectric ceramic material layers. The surface activation is done using Plasma etching technique for getting better adhesion of piezoceramic material with composites. Hydrophilic polymers such as KFRP (Kevlar Fiber Reinforced Plastic) & Hydrophobic Graphite Composites were treated with Radio Frequency (RF) plasma to modify the surface properties such that they get reflected in the adhesion enhancement between plasma treated polymer surfaces and the thin piezoceramic material coating at elevated temperatures. It has been found that there is significant passive damping contribution at resonant frequencies from the thin hybrid piezoelectric coatings on one side of the substrate composite materials like Graphite & Kevlar fiber with embedded Kevlar flexcore at elevated space domain temperatures.



क्रमांक : 044 015698  
Sl. No. :



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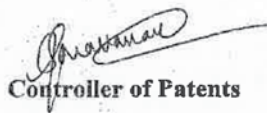
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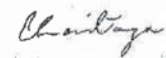
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

Patent No. : 254253  
Application No. : 1434/CHE/2006  
Date of Filing : 11-08-2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : DR S B SHARMA, AC MATHUR, B S  
MUNJAL, DR PVBAS SARMA, R K  
MALAVIYA, CYRIL MACWAN, H M  
MISTRY, DR H V TRIVEDI

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF MAKING COMPOSITES WITH PASSIVE VIBRATION DAMPING EFFECT as disclosed in the above mentioned application for the term of 20 years from the 11 day of AUGUST 2006, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 10/10/2012

  
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Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11 day of AUGUST 2008 and on the same day in every year thereafter.





## VSSC

34

**An adhesive composition and a process for bonding rubber to metals and alloys**

256945

This invention relates to the composition and processing of a novel adhesive composition suitable for bonding vulcanized neoprene rubber to an alloy such as steel. The two-component adhesive composition consists of a primer to be applied on the metal/alloy surface and an overcoat adhesive to be applied on the primed metal/alloy surface and rubber. The primer is based on a nitrile-phenolic adhesive composition; whereas, the overcoat adhesive is based on a neoprene phenolic adhesive composition. Curing of the adhesive can be effected at room temperature to provide a strong joint at the rubber-to-metal/alloy interface resulting in the required composite structure.



क्रमांक : 044 017095  
Sl. No. :



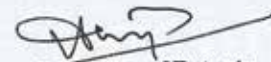
INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

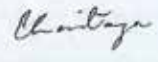
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THE PATENT OFFICE  
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Patent No.	: 256945
Application No.	: 15/CHE/2005
Date of Filing	: 11-01-2005
Patentee	: INDIAN SPACE RESEARCH ORGANISATION
Inventor(s)	: GOURI CHERUVALLY, PARAMESWARAN SASIDHARAN ACHARY, KOVOOR NINAN NINAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN ADHESIVE COMPOSITION AND A PROCESS FOR BONDING RUBBER TO METALS AND ALLOYS as disclosed in the above mentioned application for the term of 20 years from the 11 day of JANUARY 2005, in accordance with the provisions of the Patents Act, 1970.

  
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Date of Grant: 16/08/2013

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 11 day of JANUARY 2007 and on the same day in every year thereafter.



## SAC

35

**A method for simultaneously generating pencil beam and shaped beam from a single shaped reflector**

257011

The invention relates to concept of generating pencil beam from a shaped reflector that is shaped for some arbitrary coverage beam. The invention finds extensive application in the communication satellite antennas where a spot beam (pencil beam) is required to be generated in addition to the shaped beam from a same shaped reflector. The present invention finds wide application in the reflector surface distortion compensation. This invention reduces complexity over the existing art of compensating surface distortions. The invention describes the single shaped reflector with one feed for shaped beam and one for generating pencil beam away from shaped beam. One feed is placed at focus for generating shaped beam and second feed is placed such that it generates the pencil beam, which is equivalent to that generated from a same size parabolic reflector. The invention also provides technique to generate a composite beam, which has two isolated regions, one being large arbitrary shaped coverage and other is small coverage area.



क्रमांक : 044 017161  
Sl. No. :




INTELLECTUAL  
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(Rule 74 of Patents Rules)

Patent No. : 257011  
Application No. : 1876/CHE/2007  
Date of Filing : 22-08-2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : MR. A. BHASKARANARAYAN, DR. S.B. SHARMA, MR. MILIND MAHAJAN, MR. RAJEEV JYOTI

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR SIMULTANEOUSLY GENERATING PENCIL BEAM AND SHAPED BEAM FROM A SINGLE SHAPED REFLECTOR as disclosed in the above mentioned application for the term of 20 years from the 22 day of AUGUST 2007, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

  
Controller General of Patent,  
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Date of Grant: 26/08/2013

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 22 day of AUGUST 2009 and on the same day in every year thereafter.





## VSSC

36

GPS based programmable search and rescue beacon

260245

The invention is regarding a Search and rescue beacon, which transmits distress signals to SAR Satellites in case of accidents on land, water or in air to carry out search and rescue operations. It is an electronic device, programmable to change the serial number and country code based on location of its use, which gives location information with a resolution of 120 meters.



क्रमांक : 044 017988  
Sl. No. :



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PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS

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(Rule 74 of Patents Rules)



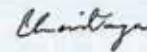
Patent No.	: 260245
Application No.	: 158/CHE/2008
Date of Filing	: 18/01/2008
Patentee	: INDIAN SPACE RESEARCH ORGANISATION
Inventor(s)	: SATYANARAYANA SIGHAKOLLI, ARUN ALEX, FEMINA BEEGUM SAINUDEEN, GOPAKUMAR RAMAKRISHNA PILLAI, MUKUNDAN KARARAKANDIYIL

It is hereby certified that a patent has been granted to the patentee for an invention entitled GPS BASED PROGRAMMABLE SEARCH AND RESCUE BEACON as disclosed in the above mentioned application for the term of 20 years from the 18 day of JANUARY 2008, in accordance with the provisions of the Patents Act, 1970.



Controller of Patents

Date of Grant: 15/04/2014



Controller General of Patent,  
Design & Trade marks



## VSSC

37

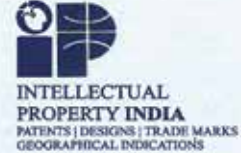
Method of processing NiTi base shape memory alloys

261445

This invention is directed to a method for producing reactive alloys particularly NiTi shape memory alloy with minimum carbon contamination. The raw materials are melted in a crucible kept within a furnace under vacuum. The inner surface of the crucible does not come into direct contact with the raw materials. The crucible is linked with Ti plates. In the center a ti sponge rod covered with Ni sheet is positioned. The space in between is filled with Ni billets. The crucible is heated to 1000°-1300° C and the molten metal is poured out into moulds lined with yttrium to produce billets. This method avoids repeated melting and casting and yields pure NiTi alloy.



क्रमांक : 044 018711  
Sl. No. :

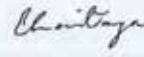


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(Rule 74 of Patents Rules)

Patent No. : 261445  
Application No. : 2331/CHE/2008  
Date of Filing : 24/09/2008  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : NIRAJ NAYAN, GOVIND, MAHESH CHAND MITTAL

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF PROCESSING NiTi BASE SHAPE MEMORY ALLOYS as disclosed in the above mentioned application for the term of 20 years from the 24 day of SEPTEMBER 2008, in accordance with the provisions of the Patents Act, 1970.

  
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Controller General of Patent,  
Design & Trade marks

Date of Grant: 25/06/2014

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 24 day of SEPTEMBER 2010 and on the same day in every year thereafter.





## SAC

38

A method for processing a plurality of Internet Protocol (IP) packets at a Digital Video Broadcast-Return Channel via Satellite (DVB-RCS) hub

262894

An improved method for processing IP packets at the DVB-RCS hub using a single PC with standard Linux Operating system, involves obtaining the IP packets at an application layer instead of the network layer. The IP packets can be encapsulated in the application layer based on the IP-MPE standard, and forwarded to a forward link transport stream generator. Then, the IP encapsulated packets can be sent using a UDP to a satellite interactive terminal (SIT). Similarly, in the return link. The IP encapsulated packets received from the SIT can be de-capsulated and routed based on a destination address in an IP header of the packets. Then the IP packets can either be pumped into a local LAN or encapsulated and forwarded to another SIT. This method can able to provide the functionality of the IP packet processing at the DVB-RCS hub without the need of standalone router and proprietary hardware and/or firmware.



क्रमांक : 044 018058  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
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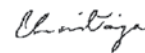
Patent No. : 262894  
Application No. : 2739/CHE/2008  
Date of Filing : 07/11/2008 16:31:42  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : NAGAMALLI GOPALAKRISHNA  
VASANTHAKUMAR,VISHAL  
AGARWAL,MOHANCHUR SARKAR

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR PROCESSING A PLURALITY OF INTERNET PROTOCOL (IP) PACKETS OF A DIGITAL VIDEO BROADCAST-RETURN CHANNEL VIA SATELLITE (DVB-RCS)HUB as disclosed in the above mentioned application for the term of 20 years from the 7 day of NOVEMBER 2008, in accordance with the provisions of the Patents Act,1970.



Controller of Patents

Date of Grant: 23/09/2014



Controller General of Patent,  
Design & Trade marks



## VSSC

39

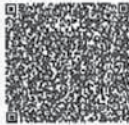
**Mechatronic Test Rig for Actuators**

263550

This invention relates to a mechatronic test rig for actuators. It consists of a loading actuator associated with position sensing means and interfaced to an electronically derivable load test actuator mounted between a fixed end plate and a movable platform. The movable platform has a load sensing means and means for measuring acceleration. A command generator is connected to a controller capable of feeding input parameters. The controller is capable of generating real time drive voltage for loading factors based on commands received from the command generator.



क्रमांक : 044 018834  
Sl. No. :



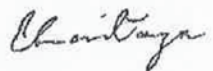
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Patent Number : 263550  
Application Number : 110/CHE/2006  
Date of Filing : 24/01/2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled MECHATRONIC TEST RIG FOR ACTUATORS as disclosed in the above mentioned application for the term of 20 years from the 24 day of JANUARY 2006, in accordance with the provisions of the Patent Act 1970.

  
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Controller General of Patents,  
Designs & Trademarks

Date of Grant: 31/10/2014

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 24 day of JANUARY 2008 and on the same day in every year thereafter.





## URSC

40

**A process for pulse hard anodizing of aluminum and its alloys**

263789

The present invention provides a process for pulse hard-anodizing of aluminum substrates, said process comprising the steps of; degreasing the substrate by immersing in a solvent and agitating the solution initially at a room temperature and thereafter to a higher temperature followed by air-drying of the substrate, treating the dried substrate with an alkali, acid cleaning and de-smutting in an acid solution of nitric acid, sulfuric acid and hydrofluoric acid, at an ambient temperature, neutralizing the substrate and rinsing with water, and pulse hard-anodizing the substrate in an electrolyte solution.



क्रमांक : 044 019180  
Sl. No. :



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Patent Number : 263789  
Application Number : 1311/CHE/2005  
Date of Filing : 16/09/2005  
Patentee : DEPARTMENT OF SPACE, INDIAN SPACE RESEARCH ORGANISATION(ISRO)

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR PULSE HARD ANODISING OF ALUMINIUM AND ITS ALLOYS as disclosed in the above mentioned application for the term of 20 years from the 16 day of SEPTEMBER 2005, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant:20/11/2014

  
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**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 16 day of SEPTEMBER 2007 and on the same day in every year thereafter.



## SAC

41

A single-gridded dual-reflector antenna

263784

A single-gridded dual-reflector antenna comprises a front reflector shell (1) of non-conductor materials with a gridded reflector surface at the aperture plane thereof, a rear reflector shell (2) of conductor materials held behind of the front reflector shell (1) by dielectric spacers (5) at an axial inclination with the front reflector shell (1), and two feed horns (3, 4) located one each at the focal centre/axis of front and rear reflector shells (1, 2). The method of producing the antenna comprises: (a) constructing the front and rear reflector shells according to design particulars determined by the mathematical formulations developed for the purpose, (b) constructing grids (6) of required shape, size and orientation, (c) fixing grids (6) at the aperture plane of front reflector shell, and (d) positioning feed horns (3, 4) at the focal centre/axis of front and rear reflector shells (3, 4) by brackets 10).



क्रमांक : 044 018221  
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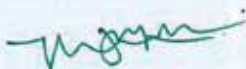
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Patent Number	:	263784
Application Number	:	80/CHE/2007
Date of Filing	:	12/01/2007
Patentee	:	INDIAN SPACE RESEARCH ORGANISATION

Inventor: DR. S B SHARMA, RAJEEV JYOTI, MILIND MAHAJAN, H.C. SANANDIYA, Y.H. TRIVEDI, D.N. HOLLA

It is hereby certified that a patent has been granted to the patentee for an invention entitled SINGLE GRIDDED DUAL REFLECTOR ANTENNA as disclosed in the above mentioned application for the term of 20 years from the 12 day of JANUARY 2007, in accordance with the provisions of the Patent Act 1970.



Controller of Patents



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Date of Grant: 20/11/2014

Note: The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 12 day of JANUARY 2009 and on the same day in every year thereafter.





## VSSC

42

**A system comprising hardware configurations for testing erasable programmable logic devices**

265350

An efficient and novel test system for erasable programmable logic devices, include a set of hardware configurations and the respective test suites developed to ensure the availability, integrity and healthiness of various elements inside the programmable logic devices. The hardware configurations address various elements like a logic array block, macrocells, elements in the macrocell, expander product terms, external interconnects, interconnects within logic array block and the user and dedicated input pins. The test suite tests for the various faults modelled in the programmable logic device. The different configurations shall be read, programmed into the device after erasure and tested with the test suite, alternately, on the device, which has to be tested. Each hardware configuration targets maximum faults in the programmable logic device and thus is unique. The invention enables to identify the good devices from a lot at a very early stage on procurement thereof.



क्रमांक : 044 019668  
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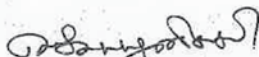
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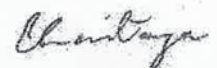


Patent Number : 265350  
Application Number : 1455/CHE/2005  
Date of Filing : 10/10/2005  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

Inventor: KUTTIYIL THOMAS OOMMEN THARAKAN, TRICHUR KRISHNAN  
KRISHNAN, SREENIVASAN SELVARAJU

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR TESTING ERASABLE PROGRAMMABLE LOGIC DEVICES as disclosed in the above mentioned application for the term of 20 years from the 10 day of OCTOBER 2005, in accordance with the provisions of the Patent Act 1970.

  
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Date of Grant: 19/02/2015

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 10 day of OCTOBER 2007 and on the same day in every year thereafter.



## VSSC

43

**A method and system for generating a generic test suite for Field Programmable Gate Arrays**

265352

The present invention provides a novel test system for Field Programmable Gate Arrays (FPGA). In particular, this invention provides a set of hardware configurations and the respective test suites to ensure the availability and integrity of various elements inside the programmable gate array device. The hardware configuration addresses different components of the FPGA such as Multiplexer, Programmable Interconnect Point (PIP), Look Up Table (LUT), Configuration Logic Block (CLB), Switch Box and I/O blocks. The test suite tests for the various faults modeled in the device. The configurations reside in the system external to the FPGA in an EPROM. The different configurations are loaded into the device after erasure and tested with the test suite, alternatively, on the device, which has to be tested out. Each hardware configuration targets maximum faults in the programmable logic device and thus is unique. Testing the device for the application circuit programmed suffers from the major drawback that it ensures the functionality of only a part of resources within the FPGA. The performance of the device is not guaranteed for another circuit, which can be programmed into the device some times on the fly, since it being many time programmable. Thus this invention provides a way for generic testing of FPGAs eliminating the need for testing the FPGA for the particular application circuit programmed into it. This invention enables to identify the good devices from a lot at a very earlier stage.



क्रमांक : 044 019669  
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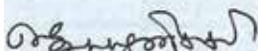


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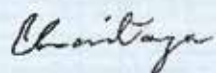


Patent Number : 265352  
Application Number : 2543/CHE/2007  
Date of Filing : 05/11/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor: KUTTIYIL THOMAS OOMMEN THARAKAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled UNIVERSAL TEST SUITE FOR FIELD PROGRAMMABLE GATE ARRAYS as disclosed in the above mentioned application for the term of 20 years from the 5 day of NOVEMBER 2007, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant: 19/02/2015

  
Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 5 day of NOVEMBER 2009 and on the same day in every year thereafter.





## SAC

44

**A test structure for testing electronic sub-assemblies of space applications under thermo-vacuum conditions**

265413

The present invention discloses a test structure for testing electronic sub-assemblies of space applications under thermo-vacuum conditions comprising: a single flange; said single flange provided with D-type shell connectors with plug and socket pins crimped with shortest link on both sides of said flange without adopted harness; multi strand insulated wires of a suitable length are crimped on both sides of plug and socket pins, inspection holes of said pins being sealed with an epoxy adhesive for vacuum sealing and said pins are inserted in the outer side and inner side of said connector shell being mounted flush onto the said flange; and said flange also provided with D-type coaxial contacts crimped on both sides of said flange without adopter harnesses.



क्रमांक : 044 018248  
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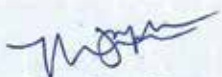
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Patent Certificate  
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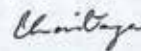


Patent No. : 265413  
Application No. : 3172/CHE/2008  
Date of Filing : 17/12/2008  
Patentee : DEPARTMENT OF SPACE, ISRO  
Inventor(s) : MOHAMMEDISHAK, NOORMOHAMMED  
SHAIKH

It is hereby certified that a patent has been granted to the patentee for an invention entitled A TEST STRUCTURE FOR TESTING ELECTRONIC SUB-ASSEMBLIES OF SPACE APPLICATIONS UNDER THERMO VACUUM CONDITIONS as disclosed in the above mentioned application for the term of 20 years from the 17 day of DECEMBER 2008, in accordance with the provisions of the Patents Act, 1970.



Controller of Patents



Controller General of Patent,  
Design & Trade marks

Date of Grant: 24/02/2015

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 17 day of DECEMBER 2010 and on the same day in every year



## SAC

45

**A UHF Miniature meandered microstrip patch antenna for mobile communications and Method of Production thereof**

266801

The invented patch antenna comprises a conductor grounding plate (3), one radiator patch (1) and four non-radiator patches (2) each of length (L), and being held perpendicularly at the required height above the upper surface of the grounding plate (3) with spacers (4), slits formed between adjacent edges of said patches (1, 2), one radiator wall (6) of length shorter than the width (W) of the radiator patch (1) located at position (5) on grounding plate (3) and one connecting probe located at position (7) on radiator plate (1), length (L) and width (W) being defined.



क्रमांक : 044 020013  
Sl. No. :



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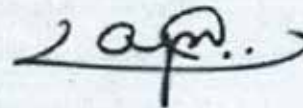


Patent Number : 266801  
Application Number : 2371/CHE/2006  
Date of Filing : 20/12/2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor: DR. S.B. SHARMA, RAJEEV JYOTI, ALOK KUMAR SINGHAL

It is hereby certified that a patent has been granted to the patentee for an invention entitled A UHF MINIATURE MEANDERED MICROSTRIP PATCH ANTENNA FOR MOBILE COMMUNICATIONS AND METHOD OF PRODUCTION THEREOF as disclosed in the above mentioned application for the term of 20 years from the 20 day of DECEMBER 2006, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant: 03/06/2015



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Note: The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 20 day of DECEMBER 2008 and on the same day in every year thereafter.





## SAC

46

**Filters utilizing combination of TE and modified HE mode dielectric resonators**

265805

A dielectric resonator filter comprises a metal wall 11 that is configured with metal cavities. Dielectric resonators 12, 14, 15 and 16 can be placed in the metal cavities and configured as a set of cylindrical TE mode resonators 12 and 14 and a set of rectangular HE mode resonators 15 and 16. Separating walls 13 are disposed between the dielectric resonators 12, 14, 15 and 16, which include tunable irises 17 for electromagnetic mixed coupling between the cylindrical TE mode resonators 12 and 14 and the rectangular HE mode resonators 15 and 16. The rectangular HE mode resonators 15 and 16 are configured to push far up the TE mode in frequency. This leads to an easy separation of two degenerate HE modes, a wide spur free stop band and also achieves electric coupling without using any additional coupling member.

***This Patent is also registered in USA***



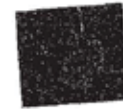
क्रमांक : 044 019690  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



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(Rule 74 of Patents Rules)




Patent Number : 265805  
Application Number : 228/CHE/2009  
Date of Filing : 02/02/2009  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A DIELECTRIC RESONATOR FILTERS WITH COMBINATION OF TE AND HE MODES as disclosed in the above mentioned application for the term of 20 years from the 2 day of FEBRUARY 2009, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant: 18/03/2015



Controller General of Patents,  
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**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 2 day of FEBRUARY 2011 and on the same day in every year thereafter.



## SAC

47

A wideband sector shaped beam antenna

266322

The invention relates to an apparatus for generating sector shaped beam with ultra low-level side lobes. The concepts of continuous aperture synthesis and aperture theory of parabolic reflector antenna are employed to achieve a sector shaped beam or a flat top beam. In the preferred embodiment two parabolic reflector antennas are used. The invention describes dual reflector antenna geometry configuration using two unshaped parabolic reflector antennas. The geometry consists of a secondary parabolic reflector, which is placed in the focal plane of main parabolic reflector and feed at the focus of secondary reflector. The invention finds extensive applications in the communication satellite antennas where enhanced co-polar beam-to-beam isolation and reduced gain roll-off within the coverage area are required. Further it finds applications in generating sector shape beam with high beam efficiency for remote sensing applications. This invention reduces complexity over the existing art of achieving sector shaped beam and provides ease of modifying the beam width of sector shaped pattern.



क्रमांक : 044 019711  
Sl. No. :



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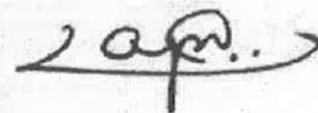
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THE PATENT OFFICE  
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Patent Certificate  
(Rule 74 of Patents Rules)

Patent Number : 266322  
Application Number : 2248/CHE/2009  
Date of Filing : 16/09/2009  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor: A BHASKARNARAYANA, S B SHARMA, RAJEEV JYOTI, MILIND MAHAJAN, Y H TRIVEDI

It is hereby certified that a patent has been granted to the patentee for an invention entitled A WIDEBAND SECTOR SHAPED BEAM ANTENNA as disclosed in the above mentioned application for the term of 20 years from the 16 day of SEPTEMBER 2009, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant: 27/04/2015



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Note: The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 16 day of SEPTEMBER 2011 and on the same day in every year thereafter.





## VSSC

48

**An analog compensation method and system for reducing distortion in a data acquisition system**

264544

The present disclosure relates to an analog compensation method for reducing the distortion in a data or signal acquisition system comprising the step of compensating the distorted frequency response characteristics of a  $\text{sinc}^3$  filter by cascading a compensation filter of complementary characteristics with the said  $\text{sinc}^3$  filter. The compensation filter can be implemented as an analog 2<sup>nd</sup> order type 1 Chebyshev filter. Also disclosed is system to reduce the distortion in a data/signal acquisition system comprising a  $\text{sinc}^3$  filter for decimation, band limiting and setting the output data rate, and an analog compensation filter with characteristics complementary to the said  $\text{sinc}^3$  filter wherein the said compensation filter is connected in cascade with the said  $\text{sinc}^3$  filter.



क्रमांक : 044 018254  
Sl. No. :



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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
Patent Certificate  
(Rule 74 of Patents Rules)**



Patent Number : 264544  
Application Number : 3209/CHE/2008  
Date of Filing : 19/12/2008  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

Inventor: SREELAL SREEDHARAN PILLAI, THOMAS KURIAN, HARESH KUMAR SINGH

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN ANALOG COMPENSATION METHOD AND SYSTEM FOR REDUCING DISTORTION IN A DATA ACQUISITION SYSTEM as disclosed in the above mentioned application for the term of 20 years from the 19 day of DECEMBER 2008, in accordance with the provisions of the Patent Act 1970.



Controller of Patents



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Date of Grant: 05/01/2015

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 19 day of DECEMBER 2010 and on the same day in every year thereafter.



## VSSC

49

**A temperature resistant ceramic coating composition for ceramic substrates, method of coating substrates therewith and articles coated thereby**

266653

This invention relates to a temperature resistant coating composition for coating porous ceramic substrates. It contains an aqueous slurry of silica powder, boron oxide powder and atleast one oxide of transition metals. Preferred oxides are cobalt nickel and chromium in the ratio of 1:1:1. Ceramic articles are heated to a temperature range of 1200°C to 1300°C.



क्रमांक : 044 020447  
Sl. No. :



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Patent Certificate  
(Rule 74 of Patents Rules)

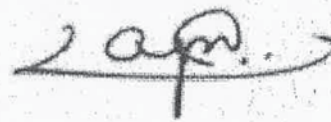
Patent Number : 266653  
Application Number : 21/CHE/2006  
Date of Filing : 04/01/2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF COATING A SUBSTRATE WITH TEMPERATURE RESISTANT CERAMIC COATING COMPOSITION WITH HIGH EMISSIVITY as disclosed in the above mentioned application for the term of 20 years from the 4 day of JANUARY 2006, in accordance with the provisions of the Patent Act 1970.



Controller of Patents

Date of Grant: 25/05/2015



Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 4 day of JANUARY 2008 and on the same day in every year thereafter.





## SAC

50

A Method of Collimation of Active Array Antenna

266750

This invention relates to a method of collimation of active array antenna. A probe is moved along a line around which the elements of active antenna are located and activating each antenna element separately and sequentially for characterizing, receiving and transmitting segments. The data received are processed to obtain maximum gain and maximum phase value, which are compared with a reference data to evaluate gain and phase coefficient. Each active array is then collimated on the basis of said correction coefficient.



क्रमांक : 044 019608  
Sl. No. :

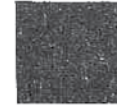
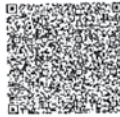


सत्यमेव जयते

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(Rule 74 of Patents Rules)



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Patent Number : 266750  
Application Number : 204/CHE/2008  
Date of Filing : 25/01/2008  
Patentee : DEPARTMENT OF SPACE, ISRO

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF COLLIMATION OF ACTIVE ARRAY ANTENNA BY SIMPLIFIED NEAR FIELD SCAN as disclosed in the above mentioned application for the term of 20 years from the 25 day of JANUARY 2008, in accordance with the provisions of the Patent Act 1970.



  
Controller of Patents

Date of Grant: 29/05/2015

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Note: The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 25 day of JANUARY 2010 and on the same day in every year thereafter.



## SAC

51

**An improved method for obtaining flat pass band response in a surface acoustic wave (SAW) filter**

267108

A SAW band pass filter and method for obtaining a flat pass band response in a SAW band pass filter are disclosed. The method estimates an amount of tilt in a pass band of the SAW filter by using crossed-field model simulation. Synchronous frequencies of an input and output inter-digital transducers (IDT) can be altered in relation to the estimated amount of pass band tilt. The input and output IDTs can be fabricated according to the altered synchronous frequencies, so that individual responses of the IDTs overlap to provide an effective filter response with a desired negative and/or positive slope in the pass band of the SAW filter. Therefore, it is possible to achieve a flat pass band response in the SAW filter without the need of external equalization circuitry.



क्रमांक : 044 020048  
Sl. No. :



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Patent Certificate  
(Rule 74 of Patents Rules)



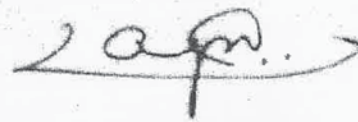
Patent Number : 267108  
Application Number : 227/CHE/2009  
Date of Filing : 02/02/2009  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN IMPROVED METHOD FOR OBTAINING FLAT PASS BAND RESPONSE IN A SURFACE ACOUSTIC WAVE (SAW) FILTER as disclosed in the above mentioned application for the term of 20 years from the 2 day of FEBRUARY 2009, in accordance with the provisions of the Patent Act 1970.



Controller of Patents

Date of Grant: 26/06/2015



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Designs & Trademarks

Note: The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 2 day of FEBRUARY 2011 and on the same day in every year thereafter.





## VSSC

52 An apparatus and a method for venting fluids and gases

267701

A venting apparatus (120) and a method for venting fluids and gases from a chamber (100), the venting apparatus comprising a housing (1) whose one end is attached to the chamber and said housing is leak tight with respect to chamber; a serrated cutter (3) housed inside said housing; an inlet opening (9) located on one of the vertical side walls of said housing; one or more shear pins (4) located on vertical side walls of said housing, said shear pins configured to hold and to release said serrated cutter; one or more retainers (6) placed at the other end of said housing, said retainer are configured to retain said serrated cutter; a closure membrane (5) fixed between said retainers to cover the other end of said housing such that the other end of housing is leak tight with respect to its inner region; and a cartridge (2) fixed to said inlet opening on the vertical side wall of said housing, wherein said cartridge is capable of being activated when desired to vent the fluids and gas from the chamber by building pressure on the serrated cutter to cut the closure membrane. The cartridge is activated, when the pressure inside the chamber as measured by the pressure transducer (110) is a desired pressure.



क्रमांक : 044 020611  
Sl. No. :



सत्यमेव जयते

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**Patent Certificate**  
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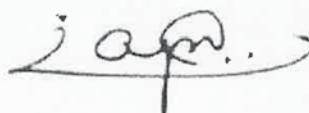


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GEOGRAPHICAL INDICATIONS



Patent Number : 267701  
Application Number : 1706/CHE/2009  
Date of Filing : 17/07/2009  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor: ANI DANIEL KURIEN, CHRISTOPHER MICHAEL, UMASANKAR SOMAN, KAYILAIRAJAN JEYAPRAKASH

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN APPARATUS AND A METHOD FOR VENTING FLUIDS AND GASES as disclosed in the above mentioned application for the term of 20 years from the 17 day of JULY 2009, in accordance with the provisions of the Patent Act 1970.




Controller of Patents

Controller General of Patents,  
Designs & Trademarks

Date of Grant: 29/07/2015

Note: The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 17 day of JULY 2011 and on the same day in every year thereafter.



## VSSC

53

**A system for testing integrated electronic devices by real time simulation and acquisition of data**

267780

The system simulates data such as analogue pressures, digital inputs, serial communication data; inputs the simulated data to the integrated electronic devices under test; acquires analogue command, serial data and status outputs in digital form from the devices under test; and carries out the evaluation of usage worthiness of the devices under test in a predetermined time cycle, which is programmed and generated by the hardware interrupt in the system. The acquired data is captured and stored in the system memory during each cycle and is verified for its functionality and correctness thereof. A real time display of the usage worthiness parameters of the devices under test is provided after sufficient validity checks of the data in real time, the usage worthiness of the devices being ascertained by monitoring of specific encoded signals. The salient feature of the system is that simulation and acquisition of data in every cycle are carried out without any data miss in any cycle for the full flight time of space vehicles.



क्रमांक : 044 020163  
Sl. No. :



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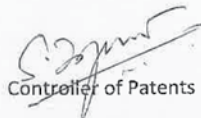


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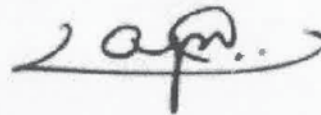


Patent Number	:	267780
Application Number	:	1458/CHE/2005
Date of Filing	:	10/10/2005
Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
Inventor: ANNIE PHILIP, THIRUNAVUKKA RASU CHIDAMBARAM, SREENIVASAN SELVARAJU		

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SYSTEM FOR TESTING INTEGRATED ELECTRONIC DEVICES BY REAL TIME SIMULATION AND ACQUISITION as disclosed in the above mentioned application for the term of 20 years from the 10 day of OCTOBER 2005, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant: 30/07/2015



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**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 10 day of OCTOBER 2007 and on the same day in every year thereafter.





## VSSC

54

**A method for demodulation of a composite/single FSK modulated signal**

265143

The proposed FSK demodulation method and system is meant for demodulating a composite FSK signal which contains addition of two or more different FSK modulated signals, with first FSK signal having first and second tone frequencies say  $f_1$  and  $f_2$ , corresponding to the binary '0' and '1' respectively of first information signal (a toggling binary signal with 50% duty cycle) and second FSK signal having third and fourth tone frequencies say  $f_3$  and  $f_4$ , corresponding to the binary '0' and '1' respectively of second information signal and so on. This method also demodulates and retrieves information from the single FSK modulated signal having first and second tone frequencies say  $f_1$  and  $f_2$ , corresponding to the binary '0' and '1' respectively of information signal. The novelty implemented here is DSP based autocorrelation technique and I&D method. According to this invention, the FSK demodulation method retrieves information signals without error even in low SNR of 6dB. As this invention is fully based on DSP techniques, traditional analog circuits like Phase Locked Loops (PLL) and Band Pass Filters (BPF) involving lot of test selectable components can be avoided (Fig 1).



क्रमांक : 044 019635  
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(Rule 74 of Patents Rules)



Patent Number : 265143  
Application Number : 2702/CHE/2007  
Date of Filing : 21/11/2007  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR DEMODULATION OF A COMPOSITE/SINGLE FSK MODULATED SIGNAL as disclosed in the above mentioned application for the term of 20 years from the 21 day of NOVEMBER 2007, in accordance with the provisions of the Patent Act 1970.

  
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Date of Grant:10/02/2015

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 21 day of NOVEMBER 2009 and on the same day in every year thereafter.



## VSSC

55

**A Process for Solventless Synthesis of Resinous Borosiloxane Oligomer Precursors for Ceramics**

277874

This invention relates to synthesis of resinous borosiloxane oligomer precursors for ceramics from boric acid and organotrialkoxysilanes by a solventless process without using any catalyst and their end-use as matrix resin and infiltrating resin for ceramic matrix composites. These oligomers give ceramic residue of 50 to 90% when subjected to pyrolysis at 900°C in inert atmosphere. On heat treatment in inert atmosphere at 1200-2000°C, the oligomers give boron containing siliconoxycarbide (SiOBC), silicon carbide (SiC) or SiC-B<sub>4</sub>C mixed non-oxide ceramics.



क्रमांक : 044 023513  
Sl. No. :

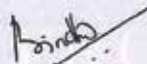


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(Rule 74 of Patents Rules)

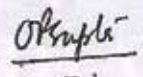
Patent No. : 277874  
Application No. : 113/CHE/2010  
Date of Filing : 18/01/2010 14:54:28  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : SHANMUGAM PACKIRISAMY, DEEPA  
DEVAPAL, PAYYADAKKAM VEEDU  
PRABHAKARAN, KRISHNAN NAIR  
JAYAKUMARI SREEJITH, ANISH PAUL, ANIL  
PAINULY

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR SOLVENTLESS SYNTHESIS OF RESINOUS BOROSILOXANE OLIGOMER PRECURSORS FOR CERAMICS as disclosed in the above mentioned application for the term of 20 years from the 18 day of JANUARY 2010, in accordance with the provisions of the Patents Act, 1970.



Controller of Patents

Date of Grant: 02/12/2016



Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 18 day of JANUARY 2012 and on the same day in every year thereafter.





## VSSC

56

**A Metal Injector and a Process for producing alloys containing highly reactive metals**

271289

The invention discloses a metal injector and a simplified and cost effective method of injecting molten metal into the bottom of alloy melt. The technique is devised for Lithium injection, which can be extended to inject any highly reactive metal. The process proposed Lithium addition under positive inert atmosphere wherein lithium yield >95% can be obtained by injection of Li at the bottom of the melt in addition to significant reduction of Li drosses and its oxide inclusions in the melt. Proposed Li injector involves Li packing under controlled atmosphere in an injector and radial injection of the molten Li at a controlled rate at the bottom of the melt under inert atmosphere. Subsequent stirring results in homogenous distribution of Li throughout the billet. The process is suitable for batch as well as continuous mode of Li addition.



क्रमांक : 044 021143  
Sl. No. :




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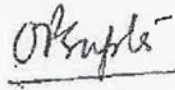
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THE PATENT OFFICE  
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Patent Number	: 271289
Application Number	: 744/CHE/2009
Date of Filing	: 31/03/2009
Patentee	: INDIAN SPACE RESEARCH ORGANISATION
Inventor: KOLLENPARAMBIL NANU SUDHAKARAN, GOVIND, NIRAJ NAYAN, SHARAD CHANDRA SHARMA, MAHESH CHAND MITTAL	

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METAL INJECTOR AND A PROCESS FOR PRODUCING ALLOYS CONTAINING HIGHLY REACTIVE METALS as disclosed in the above mentioned application for the term of 20 years from the 31 day of MARCH 2009, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant: 15/02/2016

  
Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 31 day of MARCH 2011 and on the same day in every year thereafter.



## SAC

57

**A System and Method for Converting Near-Field Antenna Data into Far-Field Antenna Pattern**

272096

This invention relates to a system for converting Near Field Antenna data into Far Field antenna pattern. It consists of exciting means to execute an antenna by chirped/FMCW pulse, recording means for simultaneous recording of signals from the antenna and sample reference signals, compression means to separate and compress the signals to a hologram depicting the amplitude and phase distribution of antenna illumination function and transforming means to project and transforming said hologram to obtain far field antenna pattern.



क्रमांक : 044 021696  
Sl. No. :



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Patent Certificate  
(Rule 74 of Patents Rules)



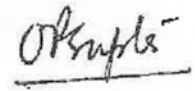
Patent Number : 272096  
Application Number : 244/CHE/2008  
Date of Filing : 30/01/2008  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor: TAPAN MISRA, RAKESH BHAN, DEEPAK PUTREVI, NIDHI CHAWLA, DILIP B DAVE

It is hereby certified that a patent has been granted to the patentee for an invention entitled A NOVEL METHOD OF IN SITU NEAR FIELD ANTENNA PATTERN MEASUREMENT as disclosed in the above mentioned application for the term of 20 years from the 30 day of JANUARY 2008, in accordance with the provisions of the Patent Act 1970.



Controller of Patents

Date of Grant: 17/03/2016



Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 30 day of JANUARY 2010 and on the same day in every year thereafter.





## SAC

58

**Dual Polarized Antenna with multilevel hybrid beam forming network for high power**

272809

The present invention relates to a hybrid beam forming network having a multilevel power distribution network for high power antenna system comprising a rectangular waveguide to a square coaxial line transition unit, a square coaxial to square coaxial line transition unit, a square coaxial to microstrip transition unit and a microstrip feed network.

A dual polarized shaped beam antenna with a multilayer printed antenna comprising a first Layer having a C-flange Clamp, a T-flange Clamp and a plain flange, a second layer to provide the input through two waveguides WR159, a third layer having a covering plate for housing 1 x 4, a fourth layer 1 x 4 left inner conductor (4a) and 1 x 4 right inner conductor, a fifth layer having two housings for 1 x 32 square coaxial line by providing a four asymmetric 1 x 8 sections with two on each sides asymmetric to next pair, a sixth layer forming a coverplate bottom for the 1 x 64 housing formed from the fifth layer; and a feed network microstrip line, a lower patch layer, a Rohacell foam layer, and an upper patch layer forming a microstrip feed network patch layer.



क्रमांक : 044 021714  
Sl. No. :



INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS




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(Rule 74 of Patents Rules)



Patent Number	: 272809
Application Number	: 6/CHE/2008
Date of Filing	: 01/01/2008
Patentee	: INDIAN SPACE RESEARCH ORGANISATION

Inventor: DR. SHASHI BHUSHAN SHARMA, SANJEEV KULSHRESTHA, BALENDU KUMAR PANDEY, RAJEEV JYOTI, DR. SOUMYA BRATA CHAKRABARTY, KARTIK BHALSOD

It is hereby certified that a patent has been granted to the patentee for an invention entitled DUAL POLARIZED ANTENNA WITH MULTILEVEL HYBRID BEAM FORMING NETWORK as disclosed in the above mentioned application for the term of 20 years from the 1 day of JANUARY 2008, in accordance with the provisions of the Patent Act 1970.



Controller of Patents

Date of Grant: 27/04/2016



Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 1 day of JANUARY 2010 and on the same day in every year thereafter.



## VSSC

59 Suntracking Radiometer

273358

Automatic Sun Tracking Multi Wavelength solar Radiometer (ASTMWR) is a scientific instrument used for measuring the intensity of directly transmitted solar flux at a number of wavelengths in the visible and near infrared regions (380-1025nm). The present design features a wideband photodiode signal amplifier, which receives the solar radiation, and provides a corresponding output. This output is proportional to the incident solar flux and is recorded as a function of wavelength. The measurements are carried out continuously as a function of time (solar zenith angle), for each wavelength. This data is then used for studies on the atmospheric spectral transmission using Langley techniques, which helps to estimate the total columnar spectral optical depth of the atmosphere and infer on the properties of the atmospheric constituents such as aerosols and water vapour. The design is based on position sensing using quadrant detectors, for achieving trouble free operation on moving platforms also. This instrument is designed for continuous direct solar radiation measurement from morning to evening, even on moving platforms.



क्रमांक : 044 022265  
Sl. No. :

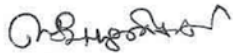


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Patent Certificate  
(Rule 74 of Patents Rules)

Patent No. : 273358  
Application No. : 1216/CHE/2009  
Date of Filing : 26/05/2009 16:30:04  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : PRADEEPKUMAR  
PADANNAYIL, KRISHNASWAMY  
KRISHNAMOORTHY

It is hereby certified that a patent has been granted to the patentee for an invention entitled SUN TRACKING RADIOMETER as disclosed in the above mentioned application for the term of 20 years from the 26 day of MAY 2009, in accordance with the provisions of the Patents Act, 1970.



Controller of Patents

Date of Grant: 31/05/2016



Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 26 day of MAY 2011 and on the same day in every year thereafter.





## SAC

60

Printed quasi-tapered tape helical array antenna

273866

A printed quasi-tapered tape helical element and printed helical array antenna are disclosed. The helical element comprises a thin helix conductor (1) having a uniform section (9) associated with a tapered section (10). The helix conductor (1) can be printed on a thin dielectric sheet and bonded to a hollow composite dielectric support (2). A solid copper conductor (3) is configured to provide electrical connection between a feeding point of the helix conductor (1) and a microstrip line of a microstrip feed network (8). The uniform and tapered helix turns are respectively wrapped around the uniform and tapered sections, which enables impedance matching, axial mode excitation, gain and radiation patterns, and damping out of standing waves generated in current distribution over the helix conductor. Conductive composite cups surrounding each helical element reduces mutual coupling in array environment. Thus, the helical element and the array antenna achieve low on-axis and off-axis axial ratio performance over the wideband for global coverage.

***This Patent is also registered in USA, UK, Germany***



क्रमांक : 044 021902  
Sl. No. :



सत्यमेव जयते

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PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
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Patent No. : 273866  
Application No. : 1876/CHE/2009  
Date of Filing : 06/08/2009  
Patentee : DEPARTMENT OF SPACE, ISRO  
Inventor(s) : DR.SHASHI BHUSHAN SHARMA, RAJEEV  
JYOTI, HARJIVAN SANANDIYA, SAGI SRAVAN  
KUMAR, YOGESH HARSHADRAI  
TRIVEDI, BHARGAV NALINKANT PANDYA

It is hereby certified that a patent has been granted to the patentee for an invention entitled PRINTED QUASI-TAPERED TAPE HELICAL ARRAY ANTENNA as disclosed in the above mentioned application for the term of 20 years from the 6 day of AUGUST 2009, in accordance with the provisions of the Patents Act, 1970.

Controller of Patents

Date of Grant: 30/06/2016

Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 6 day of AUGUST 2011 and on the same day in every year thereafter.



## VSSC

### 61 Miniaturized High Frequency DC-DC Converter

271815

DC-DC converters are used to provide isolated and regulated output voltages for powering various avionics packages in a battery-operated system. The present design features a miniaturized, highly efficient, surface mount technology based modular DC-DC converter with built in EMI filter to meet the requirements of MIL-STD-461C. The design is based on feed forward technique to achieve excellent input line transient response and audio rejection. Cycle by cycle over voltage protection, under voltage protection and short circuit protection has been implemented using feed forward technique. A miniaturized EMI filter has been built in, using voltage feed forward and lead lag compensation. High packaging density and weight reduction has been achieved by using surface mount technology. Usage of surface mount technology produces a reliable assembly and easiness of production at reduced cost. These converters are designed to provide full power over the voltage range of 16-40V. Output load regulation has been achieved by using pulse width modulation technique. The design provides an overall loop bandwidth of 12KHz, better load transient response and provides different output voltages.



क्रमांक : 044 022219  
Sl. No. :



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(Rule 74 of Patents Rules)  
2/1815

Patent No. :  
Application No. : 2782/CHE/2008  
Date of Filing : 12/11/2008  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : SAJITHA GIRIJA, THOMAS  
KURIAN, THIRUNAVUKARASU CHIDAMBARAM

It is hereby certified that a patent has been granted to the patentee for an invention entitled **MINIATURIZED, HIGH FREQUENCY DC-DC CONVERTER** as disclosed in the above mentioned application for the term of 20 years from the **12 day of NOVEMBER 2008**, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 07/03/2016

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 12 day of NOVEMBER 2010 and on the same day in every year thereafter.





## VSSC

62

Method of producing low loss ceramics

275251

This invention relates to a method of producing low loss homogenous ceramics containing oxides of Ba, Mg, Ta, Zn and Ni. The production is carried out in three stages. The first stage comprises the formation of columbite by slurring and homogenizing oxides of the selected metal wherein one of the selected oxides is in stoichiometric excess. Columbite thus produced is calcined and mixed with  $\text{BaCO}_3$ , slurred, dried and calcined. The calcined mass is then granulated, compacted and sintered. Temperature of calcinations is in the range of 1300 to 1400 for about 2 to 5 hrs.



क्रमांक : 044 022522  
Sl. No. :



**INTELLECTUAL  
PROPERTY INDIA**  
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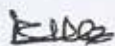


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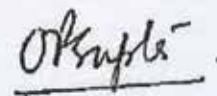
Patent Number : 275251  
Application Number : 2295/CHE/2009  
Date of Filing : 22/09/2009  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled "METHOD OF PRODUCING LOW LOSS CERAMICS" as disclosed in the above mentioned application for the term of 20 years from the 22 day of SEPTEMBER 2009, in accordance with the provisions of the Patent Act 1970.



Controller of Patents

Date of Grant: 30/08/2016



Controller General of Patents,  
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**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 22 day of SEPTEMBER 2011 and on the same day in every year thereafter.



## VSSC

63

**Process and Apparatus of Producing a Composite Paper Tube**

276018

The present invention discloses a process and an apparatus for the production of lightweight composite paper tubes for providing casing to the solid rocket propellants, into which propellant can be directly cast and make it as free-standing grain. The method uses Kraft paper (fibre material) and unsaturated polyester resin (matrix material) as primary raw materials to make the composite tube. The process involves usage of dehumidification dryer, semi-automatic winding machine, product mandrels and extraction fixture, which are designed and fabricated indigenously.



क्रमांक : 044 022905  
Sl. No. :



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Patent No. : 276018  
Application No. : 2103/CHE/2008  
Date of Filing : 28/08/2008  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : VAPPADUMEL SREEDHARAN, ANTONY  
STEEPEN, THANKAPPAN RAMESHCHANDRAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS AND APPARATUS OF PRODUCING A COMPOSITE PAPER TUBE as disclosed in the above mentioned application for the term of 20 years from the 28 day of AUGUST 2008, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 28/09/2016

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28 day of AUGUST 2010 and on the same day in every year thereafter.





## VSSC

64

**A System for Automatic Verification of Usage Worthiness of Flash Memory Hardwares used in Computers**

276137

The invention provides an automatic and comprehensive hardware verification system for Flash memory hardwares. The general procedure followed is to generate address and data by using a pattern generator, access the memory under test using the generated address, and write in said data, access and read out the memory under test using said address with appropriate output enable signal and compare the read-out data with the expected data or with a correct data for inspecting of the memory device carries out the correct read/write operation. A number of test patterns have been provided to aid evaluation of the memory device. A program operation is performed to write a “0” in a cell of the flash memory, and to write a “1” in that cell, the location of the cell is erased, one block at a time, by formulating a FMAT algorithm which is implemented for verification of usage worthiness of the flash memory hardwares in computers.



क्रमांक : 044 021786  
Sl. No. :



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Patent Number	:	276137
Application Number	:	1443/CHE/2005
Date of Filing	:	07/10/2005
Patentee	:	INDIAN SPACE RESEARCH ORGANISATION

Inventor: KUTTIYIL THOMAS OOMMEN THARAKAN, KULANDAIVELU  
VIDYA, GRAMINI ELUMALAI VASUDEVAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR AUTOMATIC VERIFICATION OF WORKABILITY OF FLASH MEMORY HARDWARE as disclosed in the above mentioned application for the term of 20 years from the 7 day of OCTOBER 2005, in accordance with the provisions of the Patent Act 1970.

Controller of Patents

Date of Grant: 30/09/2016

Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 7 day of OCTOBER 2007 and on the same day in every year thereafter.



## VSSC

65

**Fibre Reinforced Composites with Toughened Epoxy Matrix and a Process for Preparing the Same**

276350

This invention relates to a fibre reinforced composite comprising unidirectionally oriented fibres or wovenfabric impregnated in a matrix formulation consisting of an epoxy resin, a thermoplastic present in amount 5 to 30 wt%, an amine curing agent present in amount 30 to 35 wt% and a curing catalyst present in amount 0.1 to 3 wt%.



क्रमांक : 044 022665  
Sl. No. :



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PROPERTY INDIA  
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GEOGRAPHICAL INDICATIONS

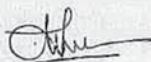


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Patent Certificate  
(Rule 74 of Patents Rules)

Patent Number	: 276350
Application Number	: 940/CHE/2006
Date of Filing	: 31/05/2006
Patentee	: Indian Space Research Organisation

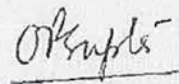
Inventor: Vattikuti Lakshmana Rao, Bejoy Francis, Rajagopal Ramaswamy, Kavoor Ninan Ninan, Sabu Thomas

It is hereby certified that a patent has been granted to the patentee for an invention entitled FIBRE REINFORCED COMPOSITES WITH TOUGHENED EPOXY MATRIX AND A PROCESS FOR PREPARING THE SAME as disclosed in the above mentioned application for the term of 20 years from the 31 day of MAY 2006 in accordance with the provisions of the Patents Act, 1970.



Controller of Patents

Date of Grant: 17/10/2016



Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained will fall/has fallen due on 31 day of MAY 2008 and on the same day in every year thereafter.





## NARL

66

A boundary layer micro pulse lidar system

271947

The invention relates to a boundary layer micro pulse lidar system comprising a laser head to generate a laser source. A beam expander is provided to expand the laser beam output to achieve eye safety, the expanded laser beam being projected into the atmosphere through mirrors positioned at 45° angles. A cassegrain telescope is provided only to receive the backscattered light. A Photo Multiplier Tube (PMT) is provided as a detector system for single photon counting. A data acquisition unit and analyzer for acquiring and processing the signal from the detector to profile aerosols/particulates and atmosphere clouds is provided. The said laser head comprises a laser diode, a Nd doped Yttrium Aluminium-Garnet crystal (Nd:YAG) which generates the laser, an acoustic opto-modulator (AOM), potassium tri-phosphate (KTP), which is a crystal that generates wavelength at the second harmonic of YAG resonating wavelength and other output optics.



क्रमांक : 044 021664  
Sl. No. :



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**Patent Number** : 271947  
**Application Number** : 597/CHE/2009  
**Date of Filing** : 17/03/2009  
**Patentee** : INDIAN SPACE RESEARCH ORGANISATION  
**Inventor:** Y. BHAVANI KUMAR, A. JAYARAMAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled A BOUNDARY LAYER MICRO PULSE LIDAR SYSTEM as disclosed in the above mentioned application for the term of 20 years from the 17 day of MARCH 2009, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant: 11/03/2016

  
Controller General of Patents,  
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**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 17 day of MARCH 2011 and on the same day in every year thereafter.



## VSSC

67

**System and method for detecting and isolating faults in pressure sensing of Flush Air Data System (FADS)**

274857

A system and method for detecting and isolating faults in pressure ports and pressure transducers of a pressure sensing system are disclosed. The system comprises a set of pressure ports flushed to a nose cap of a space vehicle in crucifix form. Three pressure transducers are connected to each pressure port through pneumatic tubes for measuring surface pressure from the pressure ports. Separate power supplying units are connected to the three pressure transducers for powering the pressure transducers at each pressure port. A processing unit is configured to acquire voltage inputs corresponding to the measured surface pressure from the pressure transducers. The processing unit executes one or more levels of fault checking to detect and isolate pressure transducer failures and blockage of the pressure ports based on the voltage inputs. Hence, it is possible to enhance the accuracy and reliability of the pressure estimation of the FADS.

***This Patent is also registered in USA, China, Russia, Europe (UK, Germany, France, Italy, Spain and Sweden)***



क्रमांक : 044 023201  
Sl. No. :



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PROPERTY INDIA**  
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Patent Certificate  
(Rule 74 of Patents Rules)**

**Patent No.** : 274857  
**Application No.** : 922/CHE/2009  
**Date of Filing** : 21/04/2009  
**Patentee** : INDIAN SPACE RESEARCH ORGANISATION  
**Inventor(s)** : JAYAKUMAR MADHAVANPILLAI, REMESH  
NARAYANAN, HARISH CHANDRAN  
SOUDAMINI, SWAMINATHAN  
SUBRAMANIAIYER, SIVAN  
KAILASAVADIVOO, SHRI SHARMA  
SURENDRA VIR

It is hereby certified that a patent has been granted to the patentee for an invention entitled **SYSTEM AND METHOD FOR DETECTING AND ISOLATING FAULTS IN PRESSURE SENSING OF FLUSH AIR DATA SYSTEM (FADS)** as disclosed in the above mentioned application for the term of 20 years from the **21 day of APRIL, 2009**, in accordance with the provisions of the Patents Act, 1970.

*A. A. A. A.*

Controller of Patents

Date of Grant: 11/08/2016

*OK Gupta*

Controller General of Patent,  
Design & Trade marks

**Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 21 day of APRIL 2011 and on the same day in every year thereafter.**





## VSSC

68

**A process for producing high density sintered silicon carbide**

279280

This invention relates to a process for preparing high density sintered silicon carbide at relatively low temperature. The ceramic body obtained by this process exhibits better mechanical properties. A mixture of silicon carbide, 2-3 percent by wt., of aluminum nitride and 0-3% by wt. of a rare earth oxide are subjected to Vacuum Hot Pressing.



क्रमांक : 044 024422  
Sl. No. :



सत्यमेव जयते




INTELLECTUAL  
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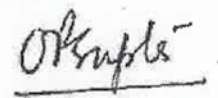
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Patent Number : 279280  
Application Number : 1430/CHE/2006  
Date of Filing : 10/08/2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR PRODUCING HIGH DENSITY SINTERED SILICON CARBIDE as disclosed in the above mentioned application for the term of 20 years from the 10 day of AUGUST 2006 in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant:17/01/2017



Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained will fall/has fallen due on 10 day of AUGUST 2008 and on the same day in every year thereafter.



## SAC

69

**Non linear microwave pulsed power amplifier and method for amplifying microwave signal**

279509

A non linear microwave pulsed power amplifier and a method for oscillation free pulsed microwave power output with compressed gain are disclosed. The amplifier comprises a first input matching network (101) configured for receiving and conditioning a microwave signal, a first nonlinear power device (102) connected to said first input matching network for amplifying the conditioned microwave signal from said first input matching network, a first output power matching network (103) connected to said first nonlinear power device for transferring the amplified microwave signal with desired power, from said first nonlinear power device to an isolator (104), a second input matching network (105) configured for receiving and conditioning output signal from said isolator, a plurality of second nonlinear power devices (107) connected in parallel to each other, with said splitter (106) for amplifying the microwave signals from the splitter, a combiner (108) connected to said plurality of second nonlinear power devices for combining the output power of the amplified microwave signals, a second output power matching network (109) connected to the combiner for yielding optimum output power of the amplified microwave signal, an electronic power conditioner (110) configured for supplying power to said first nonlinear power device and said plurality of second nonlinear power devices.



क्रमांक : 044 023849  
Sl. No. :



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<b>Patent Number</b>	:	<b>279509</b>
<b>Application Number</b>	:	<b>2312/CHE/2009</b>
<b>Date of Filing</b>	:	<b>23/09/2009</b>
<b>Patentee</b>	:	<b>INDIAN SPACE RESEARCH ORGANISATION</b>
<b>Inventor: JOLLY DHAR, RAJ KUMAR ARRORA, SAMRITI KUMAR GARG, SURINDER SINGH RANA</b>		

It is hereby certified that a patent has been granted to the patentee for an invention entitled "NON LINEAR MICROWAVE PULSED POWER AMPLIFIER AND METHOD FOR AMPLIFYING MICROWAVE SIGNAL" as disclosed in the above mentioned application for the term of 20 years from the 23 day of SEPTEMBER 2009 in accordance with the provisions of the Patents Act, 1970.



Controller of Patents

Date of Grant: 24/01/2017



Controller General of Patents,  
Designs & Trademarks





## SAC

70

**A sensor and data logger based system and method for real-time monitoring, processing and prediction of weather information**

279733

A system and a method for real time monitoring and processing of weather data, said system comprising: at least a field unit for the acquisition of weather parameter signals and processing of the signals, and at least a data receiving station to receive the processed signals from the respective field unit for further processing, display and dissemination of weather information. The present invention also provides a pressure sensor for sensing of atmospheric pressure.



क्रमांक : 044 023629  
Sl. No. :



INTELLECTUAL  
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Patent No. : 279733  
Application No. : 91/CHE/2005  
Date of Filing : 02/02/2005  
Patentee : DEPARTMENT OF SPACE

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A SENSOR AND DATA LOGGER BASED SYSTEM AND METHOD FOR REAL-TIME MONITORING, PROCESSING AND PREDICTION OF WEATHER INFORMATION** as disclosed in the above mentioned application for the term of 20 years from the 2 day of FEBRUARY 2005, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 30/01/2017

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 2 day of FEBRUARY 2007 and on the same day in every year thereafter.



## VSSC

71

**Aromatic Bisether Diamines having Pendant Diphenyl Phosphine Oxide and a Process for Preparing the Same**

279815

The present invention relates to Aromatic bisether diamines having pendant diphenyl phosphine oxide and a process for preparing the same. More specifically, the present invention relates to a variety of new phosphorus containing aromatic diamines prepared from cashew nut shell liquid (CNSL), which is a renewable resource material. The present invention particularly relates to novel [2, 4-bis-(4'-amino-3'-pentadecylphenoxy) phenyl]-diphenyl phosphine oxide, [2, 4-bis-(4'-amino-3'-alkylphenoxy) phenyl]-diphenyl phosphine oxide, [2, 4-bis-(6'-amino-3'-pentadecylphenoxy) phenyl]-diphenyl phosphine oxide, [2, 4-bis-(6'-amino-3'-alkylphenoxy) phenyl]-diphenyl phosphine oxide; [2, 5-bis-(4'-amino-3'-pentadecylphenoxy) phenyl]-diphenyl phosphine oxide, [2, 5-bis-(4'-amino-3'-alkylphenoxy) phenyl]-diphenyl phosphine oxide, [2, 5-bis-(6'-amino-3'-pentadecylphenoxy) phenyl]-diphenyl phosphine oxide, [2, 5-bis-(6'-amino-3'-alkylphenoxy) phenyl]-diphenyl phosphine oxide and further provides a method for their preparation.



क्रमांक : 044 024449  
Sl. No. :



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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS




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**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**Patent Certificate**  
*(Rule 74 of Patents Rules)*

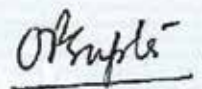
Patent Number	:	279815
Application Number	:	656/CHE/2010
Date of Filing	:	11/03/2010
Patentee	:	INDIAN SPACE RESEARCH ORGANISATION

Inventor: NOORMAHMAD NABI MALDAR, MRIDUL MEDHI, SHANMUGAM PACKIRISAMY

It is hereby certified that a patent has been granted to the patentee for an invention entitled AROMATIC BISETER DIAMINES HAVING PENDANT DIPHENYL PHOSPHINE OXIDE AND A PROCESS FOR PREPARING THE SAME as disclosed in the above mentioned application for the term of 20 years from the 11 day of MARCH 2010 in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 31/01/2017



Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained will fall/has fallen due on 11 day of MARCH 2012 and on the same day in every year thereafter.





## VSSC

72

**Fabricated Electrodes for Supercapacitors in High Pulse Power Applications**

282179

This invention relates to fabricated electrodes comprising electrode active layers of hydrated amorphous ruthenium oxide deposited on activated charcoal/carbon mix laminated on current collectors made of gold plated mixed metal oxide coated titanium foil. This invention also includes an electrode stack assembly, a supercapacitor made from the above fabricated electrode and a process for producing ruthenium oxide containing electrode active layer for making such an electrode.



क्रमांक : 044 025137  
Sl. No. :



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(Rule 74 of Patents Rules)**

<b>Patent Number</b>	: 282179
<b>Application Number</b>	: 1238/CHE/2009
<b>Date of Filing</b>	: 28/05/2009
<b>Patentee</b>	: INDIAN SPACE RESEARCH ORGANISATION

**Inventor:** RADHA BHARATHI, 2.VELAYUDHAN NAIR DANANJAYAN  
NAIR3.SINTHAI APPUSAMY IANGO VAN4.KAVOOR NINAN NINAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled "SUPERCAPACITORS FOR HIGH PULSE POWER APPLICATIONS" as disclosed in the above mentioned application for the term of 20 years from the 28 day of MAY 2009, in accordance with the provisions of the Patent Act 1970.



Controller of Patents

Date of Grant: 31/03/2017



Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 28 day of MAY 2011 and on the same day in every year thereafter.



## URSC

73

**Annular Retroreflective photogrammetric target  
for mesh surfaces**

282911

The invention relates to a photogrammetric target having an annular retro reflective material adhered on a nodal disk to form an annular retro reflective surface and the centroid of the annular retro reflective surface lies on the mesh surface. The annular retro reflective surface is integrally provided at the nodes that represent the mesh surface thereby making it possible to measure the mesh surface within a tolerance of  $\pm 0.007\text{mm}$ .



क्रमांक : 044 025145  
Sl. No. :



सत्यमेव जयते



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PATENTS [DESIGNS] TRADE MARKS  
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(Rule 74 of Patents Rules)

Patent No. : 282911  
Application No. : 2140/CHE/2011  
Date of Filing : 24/06/2011  
Patentee : INDIAN SPACE RESEARCH ORGANIZATION  
Inventor(s) : 1. CHOUPALLY KOTESHWAR RAO 2. ROHIT JAIN 3. PRAVESH MATHUR 4. ABDUL HAMEED 5. RAJEEV RANGRAO BADAGANDI 6. VISWANATHA N 7. GOVINDA K V

It is hereby certified that a patent has been granted to the patentee for an invention entitled "ANNULAR RETRO-REFLECTIVE PHOTOGRAMMETRIC TARGET FOR MESH SURFACES" as disclosed in the above mentioned application for the term of 20 years from the 24 day of JUNE 2011, in accordance with the provisions of the Patents Act, 1970.

A. A. A. A.

Controller of Patents

Date of Grant: 28/04/2017

Okupla

Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 24 day of JUNE 2013 and on the same day in every year thereafter.





## VSSC

74

**Seal-rings of Turbo-pumps for feeding liquid propellants into rocket-engines and method of producing the same**

283575

The invention provides seal-rings for use in high-speed (40,000-45,000 rpm) turbo-pumps, each comprising an outer ring-layer containing powders of Cu-90±5 and Sn-10±5; and an inner-ring-layer containing CU-85±5, Sn-10±5 and BN-5±2 (by weight%), and a sharply demarcated interface for joining the said two ring-layers; and a method of producing the seal-rings comprising (a) preparing blends of metallic powders for forming the outer and inner ring-layers, (b) filling the die, constructed for the purpose, with the blends, (c) compacting the blends in the die at pressure 50-80 MPa at ambient temperature, (d) sintering at 600-825°C for 1-2 hours in Hydrogen atmosphere, (e) re-compacting at pressure 120-180 MPa, (f) annealing at 200-500°C for 1-2 hours in Hydrogen atmosphere and (g) removing the seal-ring formed with an interface joining the two layers from the die.



क्रमांक : 044 025352  
Sl. No. :




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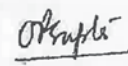
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THE PATENT OFFICE  
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Patent Certificate  
(Rule 74 of Patents Rules)

Patent No. : 283575  
Application No. : 1808/CHE/2006  
Date of Filing : 28/09/2006  
Patentee : INDIAN SPACE RESEARCH ORGANISATION  
Inventor(s) : GOUTHAM PRASAD KHANRA, SANKARAN GIRIKUMAR, GANGADHAR DE, KANJIRAMKALAYIL SUSEELAN NAIR, MAHESH CHAND MITTAL, KOVOOR NINAN NINAN

It is hereby certified that a patent has been granted to the patentee for an invention entitled **PROCESS FOR THE DEVELOPMENT OF DOUBLE LAYERED BRONZE SEAL RING FOR PREVENTING LEAKAGE OF FLUIDS ACROSS HIGH AND LOW PRESSURE REGIONS IN TURBO PUMPS** as disclosed in the above mentioned application for the term of 20 years from the 28 day of SEPTEMBER 2006, in accordance with the provisions of the Patents Act, 1970.

  
Controller of Patents

Date of Grant: 25/05/2017

  
Controller General of Patent,  
Design & Trade marks

Note.-The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28 day of SEPTEMBER 2008 and on the same day in every year thereafter.



## VSSC

75

**Method of casting thin webbed propellant grains and a system for casting the same**

283729

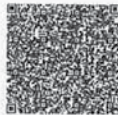
This invention presents a method of casting thin webbed propellant grains into a casting site preferably a solid rocket motor. The technique involves subjecting the slurry mix in the feeding cylinder to Nitrogen gas pressure in a controlled manner, so as to feed the slurry through feeding hose and the feeding valve at the bottom of the motor case into the annular space between mandrel and motor case. Intermittent vibrations are given during casting to offset any force equilibrium experienced by an entrapped air bubble and to facilitate rising of bubble to the free surface at the top and also to help in proper filling and leveling of the viscous slurry in intricate areas. This process has led to a tremendous improvement in the yield of thin webbed solid propellant grains and the presence of blowholes and voids has been brought down to negligible level in these grains. All this is achieved without compromising on the safety aspects of propellant processing. This invention also includes a system for carrying out the method of casting.



क्रमांक : 044 025437  
Sl. No. :



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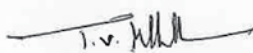


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(Rule 74 of Patents Rules)

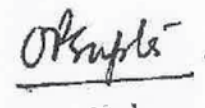
Patent Number	: 283729
Application Number	: 2547/CHE/2010
Date of Filing	: 01/09/2010
Patentee	: INDIAN SPACE RESEARCH ORGANISATION

Inventor: IMTIAZ ALI KHAN<sup>2</sup>.PARAMASIVAN SANTHANA SATHIS  
KUMAR<sup>3</sup>.MATHEW PUTHUVILAYIL DANIEL<sup>4</sup>.VARIKATTU RAMAKAIMAL  
SASIDHARA KAIMAL<sup>5</sup>.THOMAS CHALISSERY RAPHAEL<sup>6</sup>.SIVARAMAKRISHNAN  
RAMAMOORTHY

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF CASTING THIN WEBBED PROPELLANT GRAINS AND A SYSTEM FOR CASTING THE SAME as disclosed in the above mentioned application for the term of 20 years from the 1 day of SEPTEMBER 2010, in accordance with the provisions of the Patent Act 1970.

  
Controller of Patents

Date of Grant: 30/05/2017



Controller General of Patents,  
Designs & Trademarks





## SAC

76

**Circuit for compensating gain variation over operating frequency and/or temperature range**

284294

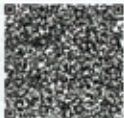
A circuit for compensating gain variation of the RF/microwave system over its operating frequency and/or temperature range comprises a ground line (13), and a main transmission line (12) that is configured with a set of ports at both ends for connecting an input port (10) and an output port (11). Shunt networks (51-54) are connected between the main transmission line and the ground line. Each shunt network is formed by an auxiliary transmission line (14, 24, 34, 44), which is serially connected in between a set of impedances (15, 16, 25, 26, 35, 36, 45, 46). At least one of the impedances is configured as variable impedance in such a way that it provides adjustable impedance for adjusting variable attenuation slope over the operating frequency range depending on voltage or current supplied to the circuit and also for adjusting variable attenuation slope over the operating temperature range depending on temperature dependent voltage or current supplied to the circuit. Such circuit easily optimizes and compensates the gain variation of any RF or microwave systems and is simple in construction.



क्रमांक : 044 025200  
Sl. No. :



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Patent Number	:	284294
Application Number	:	3001/CHE/2009
Date of Filing	:	04/12/2009
Patentee	:	INDIAN SPACE RESEARCH ORGANISATION

Inventor: SUBHASH CHANDRA BERA<sup>2</sup>. VIRENDRA KUMAR JAIN<sup>3</sup>. RAJVIR SINGH<sup>4</sup>. VINESH KUMAR GARG

It is hereby certified that a patent has been granted to the patentee for an invention entitled CIRCUIT FOR COMPENSATING GAIN VARIATION OVER OPERATING FREQUENCY AND/OR TEMPERATURE RANG as disclosed in the above mentioned application for the term of 20 years from the 4 day of DECEMBER 2009, in accordance with the provisions of the Patent Act 1970.

Controller of Patents

Date of Grant: 16/06/2017

Controller General of Patents,  
Designs & Trademarks

**Note:** The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 4 day of DECEMBER 2011 and on the same day in every year thereafter.



## LPSC

### 77 | Fiber Optic Liquid Level Detector

282878

The present invention provides a hollow prism for detecting liquid level in the presence of an optical beam, including a hollow member (101), dielectric members (104, 105) sealed to the hollow member (101) with one of the dielectric members (104, 105) arranged at an inclined angle to the other, a sealed hollow space disposed between said dielectric members (104, 105), wherein an incident optical beam (109) enters through the first dielectric member (104) at normal incidence and exits as an emergent optical beam through the second dielectric member (105), and wherein the emergent optical beam remains undeviated when the hollow member (101) not immersed in a liquid medium (113) and the emergent beam suffers deviation when immersed in the liquid medium (113). The present invention also provides a fiber optic liquid level detector (124) with the hollow prism for detecting liquid levels.

***This Patent is also registered in South Korea, USA, Russia, China, Japan, Europe***







## VSSC

78

**An Apparatus and Method of Simulating Rotor Blade Failure**

281167

The objective of the present invention is to induce failure of rotor blade at desired time and speed with test repeatability. The present invention discloses an apparatus and a method for simulating rotor blade failure. An energetic material is positioned inside a plurality of cavities in axial direction at the root of rotor blade and triggered by electrical means. The energetic material, upon being energized, severs said webs and radially ejects said blade along the rotor axis at desired time and speed. The blade impact simulation test is done to qualify the engine casing. If the casing fails to contain the failed blade inside, then the design of said casing would be re-considered for improvements.



DECEMBER 2010 and on the same day in every year thereafter.	
क्रमांक : 011 32001	
SI. No. :	
भारत सरकार GOVERNMENT OF INDIA पेटेंट कार्यालय THE PATENT OFFICE पेटेंट प्रमाणपत्र Patent Certificate (Rule 74 of Patents Rules)	
Patent Number	: 281167
Application Number	: 3248/CHE/2008
Date of Filing	: 23/12/2008
Patentee	: INDIAN SPACE RESEARCH ORGANISATION
Inventor:	CHANDU VELAYUDHAN, Z.MADHUSUTHANAN NALLAPERUMA, 3.MATHEW DANIEL, 4.BABY ABRAHAM, 5.KAILAIRAJAN JEYAPRAKASH,
It is hereby certified that a patent has been granted to the patentee for an invention entitled AN APPARATUS AND METHOD OF SIMULATING ROTOR BLADE FAILURE as disclosed in the above mentioned application for the term of 20 years from the 23 day of DECEMBER 2008, in accordance with the provisions of the Patent Act 1970.	
INTELLECTUAL PROPERTY INDIA PATENTS   DESIGNS   TRADE MARKS GEOGRAPHICAL INDICATIONS	
Controller General of Patents, Designs & Trademarks	Signature
Date of Grant: 08/03/2017	
Note: The fees for renewal of this patent, if it is to be maintained, will fall/has fallen due on 23 day of	
http://10.199.2.57/patentnew/examination/LP.aspx?patno=281167 http://10.199.2.57/patentnew/examination/LP.aspx?patno=281167	



## SAC

79


**A method for track steering for azimuth compression of high resolution Synthetic Aperture Radar (SAR) on an aircraft**

289474


The invention provides an improved method for track steering for azimuth compression of high resolution synthetic aperture radar (SAR) mounted on an aircraft. The invention essentially involves a time domain correction of linear RCM during motion compensation itself. For this purpose, initially SAR raw data reference is made to a global mean track and Pulse Repetition Frequency (PRF) slaving operation is carried out. Subsequently, motion compensation (i.e. window steering, phase compensation and PRF slaving) is carried out around a synthetic track, which is perpendicular to beam pointing direction. This local track is named as “steered track”. After this correction, SAR data appears to be collected from broadside pointing. Consequently, range broadening is reduced. The said correction is applied differently for different range gates so that linear RCM is minimized over large swath. This way, it is much more effective than traditional bulk RCM correction method and high resolution is obtained over a large swath. This method is as effective as mechanical antenna steering but without bulky electromechanical hardware required for antenna steering. This method, consequently, results into simplified SAR hardware where antenna can be kept fixed.








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क्रमांक : 044103003  
SL No :



पेटेंट सं. / Patent No.	:	289474
आवेदन सं. / Application No.	:	2969/CHE/2007
फाइल करने की तारीख / Date of Filing	:	11/12/2007
पेटेटी / Patentee	:	DEPARTMENT OF SPACE, ISRO
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.TAPAN MISRA 2.VENUGOPALAN MANAVALA RAMANUJAM

प्रमाणित किया जाता है कि पेटेटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD OF TRACK STEERING FOR AZIMUTH COMPRESSION OF HIGH RESOLUTION AIRBORNE SAR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 11th day of December 2007 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF TRACK STEERING FOR AZIMUTH COMPRESSION OF HIGH RESOLUTION AIRBORNE SAR as disclosed in the above mentioned application for the term of 20 years from the 11th day of December 2007 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 10/11/2017  
Date of Grant :

*(Signature)*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 11th day of December 2009 से और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 11th day of December 2009 and on the same day in every year thereafter.





## VSSC

80

A Satellite Separation System and a Method Thereof

288546

Invention relates to a satellite separation system 40 for ejecting satellite 26 from the container 20. The door 1 of the container that houses the satellite is held in closed position by a plurality of clamping members 28. The actuation unit 32 including the coil fusing block 7, the at least one torsion spring 25, and the door torsion spring 21 mounted at the base of the door 1 rotates the door 1 and after the door 1 has rotated by a predetermined angle, delay unit 37 unlocks the pusher plate 11 and the satellite 26 is ejected from the container 20 by the biasing means 9 in a compressed state. The delay unit 37 facilitates ejection of satellite without interference with the door 1. Moreover, the satellite 26 is preloaded from the first side 31 and the second side 30 to provide better stiffness to the system. The helical spring 9 having variable biasing provides variable ejection velocity to satellite.



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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044102641  
SL No :



पेटेंट सं. / Patent No.	:	288546
आवेदन सं. / Application No.	:	3236/CHE/2010
फाइल करने की तारीख / Date of Filing	:	29/10/2010
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.LALE RAHUL PRADIPRAO 2.AJAYAKUMAR NARAYANA PILLAI 3.POKKAN PURUSHOTHAMAN 4.RAGHAVAN PILLAI RADHAKRISHNA PILLAI

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A SATELLITE SEPARATION SYSTEM AND A METHOD THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 29th day of October 2010 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SATELLITE SEPARATION SYSTEM AND A METHOD THEREOF as disclosed in the above mentioned application for the term of 20 years from the 29th day of October 2010 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 20/10/2017  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 29th day of October 2012 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 29th day of October 2012 and on the same day in every year thereafter.



## URSC

81

**A Process for Low Voltage, Room Temperature Hard-Anodizing of Aluminium Alloys**

289029

The present invention relates to a process for hard-anodizing of aluminium alloy substrate comprising the step of subjecting the substrate to an electrolyte solution characterized in that the said process is carried out at a temperature of 20°C to 30°C and at a constant current density of 20-80 A/ft<sup>2</sup> with a pulsed power supply, forward and reverse pulse duty cycle of 40-90%. 13. The invention also relates to an apparatus for hard anodizing of aluminium alloy substrate. The present process does not require any cooling, thereby saving in energy requirements and hence is a cost effective process.





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सत्यमेव जयते

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**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044102812  
SL No :



पेटेंट सं. / Patent No.	:	289029
आवेदन सं. / Application No.	:	609/CHE/2011
फाइल करने की तारीख / Date of Filing	:	01/03/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.HARI KRISHNA THOTA 2.ALEVOOR RAJENDRA 3.LAKSHMI GAYATHRI RAMACHANDRAN 4.ANAND KUMAR SHARMA

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR LOW VOLTAGE, ROOM TEMPERATURE HARD-ANODIZING OF ALUMINIUM ALLOYS नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 1st day of March 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR LOW VOLTAGE, ROOM TEMPERATURE HARD-ANODIZING OF ALUMINIUM ALLOYS as disclosed in the above mentioned application for the term of 20 years from the 1st day of March 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 31/10/2017  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बकाया रखा जाता है, 1st day of March 2013 को और उसके परफत प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 1st day of March 2013 and on the same day in every year thereafter.





## VSSC

82

Method of calibrating a data acquisition system for resistive input

292302

The present invention relates to a method of calibrating a data acquisition system (100, 100a, 100b) for a negative resistance input. The method comprises the steps of applying positive supply voltage to the data acquisition system through its supply voltage terminal (101, 101a, 101b). Current flow from current terminals of the data acquisition system is established to a resistive unit (200, 200a, 200b) by respectively connecting an upper terminal (201, 201a, 201b) and a lower terminal (202, 202a, 202b) of the resistive unit to positive and negative analog input terminals of the data acquisition system. Direction of the current flow through the resistive unit is reversed by connecting and routing the upper terminal to a system ground (102, 102a, 102b). Such method is capable of simulating the effect of negative resistance input for calibration of the data acquisition system without using any additional setup or complicated devices or equipments.



**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044103999  
SL No :



पेटेंट सं. / Patent No.	:	292302
आवेदन सं. / Application No.	:	33/CHE/2011
फाइल करने की तारीख / Date of Filing	:	05/01/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.SREELAL SREEDHARAN PILLAI 2.SMITHA JOSE 3.VINOD PADMANABHA RAO 4.KRISHNAN ARYANAYAKIPURAM RAMANATHAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD OF CALIBRATING A DATA ACQUISITION SYSTEM FOR RESISTIVE INPUT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 5th day of January 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF CALIBRATING A DATA ACQUISITION SYSTEM FOR RESISTIVE INPUT as disclosed in the above mentioned application for the term of 20 years from the 5th day of January 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 30/01/2018  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 5th day of January 2013 से और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 5th day of January 2013 and on the same day in every year thereafter.



## URSC

83


**A Process for Forming a Corrosion Resistant Oxide Coating on Magnesium Alloys**

295389


This invention provides a process for forming a corrosion resistant oxide coating on magnesium alloys with micro arc oxidation at room temperature. The magnesium alloy substrate is subjected to micro arc oxidation process with AC power supply with pulsing durations in milli seconds, varying between base to peak values having a duty cycle of 40-70%, in an aqueous solution containing Tri sodium ortho phosphate, sodium silicate and potassium fluoride at a temperature of 20-30°C for time period of 20-30 minutes and at a constant current density of 20-30 A/ft<sup>2</sup> to obtain a uniform ceramic like coating deposition. This process is applicable to magnesium alloys AZ31B and ZK60A substrates.








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GEOGRAPHICAL INDICATIONS



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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044104980  
SL No :



पेटेंट सं. / Patent No.	295389
आवेदन सं. / Application No.	3770/CHE/2012
फाइल करने की तारीख / Date of Filing	11/09/2012
पेटेंटी / Patentee	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	1.HARI KRISHNA THOTA 2.RAJENDRA ALEVOOR 3.ANAND KUMAR SHARMA

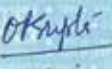
प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR FORMING A CORROSION RESISTANT OXIDE COATING ON MAGNESIUM ALLOYS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 11th day of September 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR FORMING A CORROSION RESISTANT OXIDE COATING ON MAGNESIUM ALLOYS as disclosed in the above mentioned application for the term of 20 years from the 11th day of September 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 02/04/2018  
Date of Grant :

**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
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पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 11th day of September 2014 को और उसके पचास प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 11th day of September 2014 and on the same day in every year thereafter.





## VSSC

84

**A Device and a Method for Casting Allow Billets  
Conforming to Ultrasonic Standards**

295517

This invention relates to a mould with suitably optimized gating and risering systems; and a combination of (sand and graphite) to ensure proper directional solidification; for casting of Mg-alloy AZ31B to obtain good quality molten metal (free from gas and inclusions). By adopting this cost effective process, cast billets conforming to ultrasonic test standard AMS2630 B Class 'A' were obtained. The billets, so obtained can be subjected to mechanical working like forging, rolling and extrusion to realize required products. This process also provides flexibility to design sand moulds to process various sizes of such rectangular Mg-alloy AZ31B billets. Slit type vertical gate of the device extends through out the height of the billet and the down sprue is introduced to ensure the availability of hot metal at the top continuously till the pouring is completed. Graphite chills have been used for forming the mould cavity for billet portion, which accelerate solidification rate of this particular portion. These special features result in a uniform, progressive and inclusion free metal flow inside the mould cavity and enable to obtain premium quality billets.



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पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044105042  
SL No :



पेटेंट सं. / Patent No.	:	295517
आवेदन सं. / Application No.	:	3188/CHE/2008
फाइल करने की तारीख / Date of Filing	:	18/12/2008
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1. IMANDI RAJARAO 2. SACHIN GUPTA 3. GOVIND 4. MAHESH CHAND MITTAL 5. KANJIRAMKALAYIL SUSEELAN NAIR

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A DEVICE AND A METHOD FOR CASTING ALLOY BILLETS CONFORMING TO ULTRASONIC STANDARDS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 18th day of December 2008 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A DEVICE AND A METHOD FOR CASTING ALLOY BILLETS CONFORMING TO ULTRASONIC STANDARDS as disclosed in the above mentioned application for the term of 20 years from the 18th day of December 2008 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 05/04/2018  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 18th day of December 2010 से और उसके परन्ततः प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 18th day of December 2010 and on the same day in every year thereafter.



## VSSC

85

**A Device and Method for Characterisation and Bond-Evaluation of Soft/Brittle Porous Materials**

298050

The device comprises electronic unit for generating acoustic and ultrasonic electrical signals of frequency range 100 Hz to 500 KHz, and transmitting the same to transducer which converts the electrical signals into sound waves and focuses the sound waves on the flat side of specimen, for receiving the electrical signals produced by transducers from sound waves reflected by the test specimen and also by transducer from sound waves transmitted through the test specimen, analysing the received signals, and displaying/computing the test results obtained. The method comprises mounting the test specimen in the device with flat side in the horizontal as well as in the vertical plane, converting acoustic and ultrasonic electrical signals from the device, into sound waves, and focusing the same on the test specimen by transducer, converting sound waves, reflected from and transmitted through the test specimen, by transducers and supplying the same to the device, analysing the signals and displaying/computing the test results by the device.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044106538  
SL No :



पेटेंट सं. / Patent No.	:	299956
आवेदन सं. / Application No.	:	4871/CHE/2013
फाइल करने की तारीख / Date of Filing	:	29/10/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.RENJITH DEVASIA 2.SANDHYA GOPINATHAN NAIR 3.KRISHNAN NAIR JAYAKUMARY SREEJITH 4.SHANMUGAM PACKIRISAMY

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित FIBER-REINFORCED CERAMIC MATRIX COMPOSITE MATERIAL WITH POLYMER DERIVED INTERFACE COATING नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 29th day of October 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled FIBER-REINFORCED CERAMIC MATRIX COMPOSITE MATERIAL WITH POLYMER DERIVED INTERFACE COATING as disclosed in the above mentioned application for the term of 20 years from the 29th day of October 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 14/08/2018  
Date of Grant :

*OKSupta*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 29th day of October 2015 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note.- The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 29th day of October 2015 and on the same day in every year thereafter.





## VSSC

86

**Fiber-Reinforced Ceramic Matrix Composite Material with Polymer Derived Interface Coating**

299956

This invention relates to a polymer derived interface coating (22) for a fibrous material (21) comprising a natural or crystalline graphitic structure of a polyacrylonitrile derived pyrocarbon interface containing from 0.5 wt% to 1.0 wt% of polyacrylonitrile and having a flexural strength of 146 to 163 MPa with an average coating thickness of 0.5 to 1.0  $\mu\text{m}$ .



**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044106538  
SL No :



पेटेंट सं. / Patent No.	:	299956
आवेदन सं. / Application No.	:	4871/CHE/2013
फाइल करने की तारीख / Date of Filing	:	29/10/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.RENJITH DEVASIA 2.SANDHYA GOPINATHAN NAIR 3.KRISHNAN NAIR JAYAKUMARY SREEJITH 4.SHANMUGAM PACKIRISAMY

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित FIBER-REINFORCED CERAMIC MATRIX COMPOSITE MATERIAL WITH POLYMER DERIVED INTERFACE COATING नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 29th day of October 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled FIBER-REINFORCED CERAMIC MATRIX COMPOSITE MATERIAL WITH POLYMER DERIVED INTERFACE COATING as disclosed in the above mentioned application for the term of 20 years from the 29th day of October 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 14/08/2018  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 29th day of October 2015 को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 29th day of October 2015 and on the same day in every year thereafter.



## VSSC

87


**A Device for Testing The Presence and Level of Soluble Pollutants in Water**

302049


This invention relates to a device and a method for indicating the level and presence of soluble pollutants in water. The device consists of a transparent receptacle (R) provided with a lid (L) having an air vent (AV) and a double U bent inlet (Lb, Ub). The receptacle contains a reagent which will react with the pollutants and the double U bend of the inlet contains a colour indicating means to indicate the level of reaction between the pollutant and the reagent.








**INTELLECTUAL  
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GEOGRAPHICAL INDICATIONS



भारत सरकार  
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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044107274  
SL No :



पेटेंट सं. / Patent No.	:	302049
आवेदन सं. / Application No.	:	941/CHE/2006
फाइल करने की तारीख / Date of Filing	:	31/05/2006
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Aiyaswami Hariharasubramanian 2.Anthimalan Kavilwarriyathu Madhavan 3.Thiruvannathapuram Subbiah iyer Ramasubramanian 4.Kannan Govindasamy Kannan 5.Kovoor Ninan Ninan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में बचाप्रकटित A DEVICE FOR TESTING THE PRESENCE AND LEVEL OF SOLUBLE POLLUTANTS IN WATER नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 31st day of May 2006 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A DEVICE FOR TESTING THE PRESENCE AND LEVEL OF SOLUBLE POLLUTANTS IN WATER as disclosed in the above mentioned application for the term of 20 years from the 31st day of May 2006 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 09/10/2018  
Date of Grant :

INTELLECTUAL  
PROPERTY INDIA  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATION

*OK Singh*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 31st day of May 2006 से और उसके परवर्त प्रत्येक वर्ष में उन्ही दिन देव लेगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 31st day of May 2006 and on the same day in every year thereafter.





## SAC

88

**Symmetrical branching Ortho Mode Transducer (OMT) with enhanced bandwidth**

301707

An Ortho Mode Transducer (OMT) comprising a main guide configured with a set of ports 11 and 13 at both ends for communicating a band of frequencies. The ports 11 and 13 are placed at a predetermined distance from each other to form a taper section 12. Branching waveguides 15 are disposed around the main guide for extracting polarization signals from the main guide. Coupling apertures 14 are disposed apart along the periphery of the main guide for coupling the branching waveguides 15 to the main guide. The coupling apertures 14 are aligned parallel to a longitudinal axis of the main guide and extended to the taper portion 12 of the main guide, which enhances bandwidth performance without the need for additional extraneous impedance matching elements.

***This Patent is also registered in USA***



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सत्यमेव जयते

**भारत सरकार**  
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**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044107150  
SL No :



पेटेंट सं. / Patent No.	:	301707
आवेदन सं. / Application No.	:	1659/CHE/2009
फाइल करने की तारीख / Date of Filing	:	13/07/2009
पेटेंटी / Patentee	:	DEPARTMENT OF SPACE, ISRO
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.DR.SHASHI BHUSHAN SHARMA 2.RAJEEV JYOTI 3.JIGAR MAHESHBHAI PANDYA 4.JIDESH SHANKAR NAIR 5.KHAGINDRA SOOD 6.YOGESH HARSHADRAI TRIVEDI

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित SYMMETRICAL BRANCHING ORTHO MODE TRANSDUCER (OMT) WITH ENHANCED BANDWIDTH नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 13th day of July 2009 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SYMMETRICAL BRANCHING ORTHO MODE TRANSDUCER (OMT) WITH ENHANCED BANDWIDTH as disclosed in the above mentioned application for the term of 20 years from the 13th day of July 2009 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 29/09/2018  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 13th day of July 2011 से और उसके पचास प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 13th day of July 2011 and on the same day in every year thereafter.



## SAC

89

High Directivity Microstrip Directional Couplers

298736

The present invention relates to a high directivity microstrip directional coupler (1) comprising:


- a substrate (2) made of dielectric material,
- a directional coupling unit (3), disposed on the surface of said substrate (2), comprising of pair of spaced-apart inverted-U-shaped microstrip conductors, constituting first transmission line (4) having an input port (6) and an output port (7), and second transmission line (5) having a coupled port (8) and an isolated port (9), wherein said first transmission line (4) lies above said second transmission line (5), and wherein the confronting edges of said microstrip conductors are indented with uniform periodic square grooves (10) in such a way that the indentation provided on the edge of one microstrip conductor reciprocates with the indentation provided on the edge of the adjacent microstrip conductor; and wherein the groove-width is equal to the groove-space.

The present invention also relates to a high directivity microstrip tandem directional coupler (12) comprising of a substrate (2) made of dielectric material and a pair of directional coupling units, first directional coupling unit (13) and second directional coupling unit (14), disposed on the surface of said substrate (2) in tandem.


The present invention proposes to overcome drawbacks associated with conventional parallel-coupled microstrip lines such as poor directivity and isolation.








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सत्यमेव जयते

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**GOVERNMENT OF INDIA**  
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**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044106150  
SL No :




पेटेंट सं. / Patent No.	:	298736
आवेदन सं. / Application No.	:	3175/CHE/2010
फाइल करने की तारीख / Date of Filing	:	25/10/2010
पेटेटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.JOLLY DHAR 2.SUMAN AICH 3.B V BAKORI 4.RAJKUMAR ARRORA 5.S S RANA

प्रमाणित किया जाता है कि पेटेटी को उपरोक्त आवेदन में यथाप्रकटित HIGH DIRECTIVITY MICROSTRIP DIRECTIONAL COUPLERS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 25th day of October 2010 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled HIGH DIRECTIVITY MICROSTRIP DIRECTIONAL COUPLERS as disclosed in the above mentioned application for the term of 20 years from the 25th day of October 2010 in accordance with the provisions of the Patents Act, 1970.

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अनुदान की तारीख : 11/07/2018  
Date of Grant :

*Signature*

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 25th day of October 2012 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 25th day of October 2012 and on the same day in every year thereafter.





## VSSC

90

**A Method of Estimating Frequency Domain Response in Vibration Testing and a System thereof**

304378

A method and a system for estimating frequency domain response in swept sine vibration test is disclosed. A drive signal 19 is applied to a vibration generator 14. Vibration is then generated in a test article in response to the signal being applied to the vibration generator 14. The data related to the vibration being generated in the test article as a function of time is being acquired in the data acquisition and processing system 16. Then a constant output level adaptor (COLA) signal is acquired by the data acquisition and processing system 16. A plurality of cycles of sweep signal at a first frequency is generated to obtain a reference signal. Cross correlation is computed between the reference signal and the constant output level adaptor (COLA) signal. A peak is identified in the computed cross correlation and sweep start is detected by subtracting number of samples in the sweep signal from sample corresponding to the peak in the cross correlation. Data related to the vibration is synchronized with the detected sweep start in constant output level adaptor (COLA) detected. Data related to the vibration from the sweep start to end of the test is divided into a plurality of blocks, each of the plurality of blocks corresponding to different points in time. Amplitude information for data related to the vibration is generated by multiplying root mean square (rms) value obtained for the vibration at each of the plurality of blocks with  $\sqrt{2}$ . Frequency information for data related to the vibration is generated at each of the plurality of blocks on the basis of sweep rate, first frequency and time corresponding to each of the plurality of blocks from sweep start. Amplitude information is plotted versus the frequency information to obtain the frequency domain response.



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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044108092  
SL No :



पेटेंट सं. / Patent No.	:	304378
आवेदन सं. / Application No.	:	946/CHE/2011
फाइल करने की तारीख / Date of Filing	:	25/03/2011
पेटेटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.SHANAVAS ABDUL HABEEBULLA 2.BALACHANDRAN PARAMESWARAN NAIR 3.SIVASUBRAMONIAN BHAGANTHEESWARA IYER

प्रमाणित किया जाता है कि पेटेटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD OF ESTIMATING FREQUENCY DOMAIN RESPONSE IN VIBRATION TESTING AND SYSTEM THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 25th day of March 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF ESTIMATING FREQUENCY DOMAIN RESPONSE IN VIBRATION TESTING AND SYSTEM THEREOF as disclosed in the above mentioned application for the term of 20 years from the 25th day of March 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 13/12/2018  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 25th day of March 2013 से और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 25th day of March 2013 and on the same day in every year thereafter.



## VSSC

91

**Precursor based Ceramic Coating and Adhesive Compositions for High Temperature Applications**

304496

The present application relates to the field of ceramic coating and adhesive compositions for high temperature applications. In particular, the present application relates to a precursor based ceramic coating and adhesive composition comprising a carbon precursor binder and ceramic fillers. The compositions of the present application may be employed as sealant/protective coatings, as crack repair system, or for joining of carbon-carbon composites in carbonaceous substrates.





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सत्यमेव जयते

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**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044108134  
SL No :



पेटेंट सं. / Patent No.	:	304496
आवेदन सं. / Application No.	:	2293/CHE/2015
फाइल करने की तारीख / Date of Filing	:	06/05/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Remani Sreeja 2.Thazhathu Vettoor Sebastian 3.Payyadakkan Veedu Prabhakaran 4.Naveenchandra Prabhu Sreenivas 5.Mallasamudram Paramasivam Dhanasekaran 6.Shanmugham Packirisamy

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PRECURSOR BASED CERAMIC COATING AND ADHESIVE COMPOSITIONS FOR HIGH TEMPERATURE APPLICATIONS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 6th day of May 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PRECURSOR BASED CERAMIC COATING AND ADHESIVE COMPOSITIONS FOR HIGH TEMPERATURE APPLICATIONS as disclosed in the above mentioned application for the term of 20 years from the 6th day of May 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 14/12/2018  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 6th day of May 2017 को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 6th day of May 2017 and on the same day in every year thereafter.





## VSSC

92 A Method of Brazing Ti5Al2.5Sn-ELI Alloy

305174

The present disclosure teaches a brazing process for bonding Ti5Al2.5Sn Extra Low Interstitial (ELI) Alloys wherein machined surfaces of Ti5Al2.5Sn-ELI alloy specimens are polished, cleaned and acid pickled. Ti15Cu15Ni brazing foils are cleaned and placed in between the specimens. The specimens are placed inside a fixture, and the fixture is placed inside a vacuum brazing furnace. The specimens are heated to a temperature  $980^{\circ}\text{C} \pm 10^{\circ}\text{C}$  and homogenized at  $900^{\circ}\text{C}$  for 60 to 90 minutes and cooled back to room temperature. In addition to devising a unique method for brazing Ti5Al2.5Sn-ELI alloys for 20K applications, the invention produces brazed joints of parent metal comparable strength.



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GEOGRAPHICAL INDICATIONS



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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044108352  
SL No :



पेटेंट सं. / Patent No.	:	305174
आवेदन सं. / Application No.	:	4870/CHE/2013
फाइल करने की तारीख / Date of Filing	:	29/10/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.PRAVIN MUNESHWAR 2.SATISH KUMAR SINGH 3.KURNALA NARESH KUMAR 4.BHANU PANT

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD OF BRAZING Ti5AL2.5SN-ELI ALLOY नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 29th day of October 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुवृत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF BRAZING Ti5AL2.5SN-ELI ALLOY as disclosed in the above mentioned application for the term of 20 years from the 29th day of October 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 01/01/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 29th day of October 2015 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 29th day of October 2015 and on the same day in every year thereafter.



## SAC

93


**A Method and a Device for Evaluation of Phase and Gain Characteristics of a Transmit Receive Module**

305296


This invention relates to a method and a device for evaluation of phase and gain characteristics of a transmit receive module (1). T/R Module needs to be characterized for phase and gain for Transmit and Receive path (transmit and receive paths in a T/R Module are not simultaneously active). The signal from RF Frequency Source (FS) (10) is split into two paths using a 1:2 power divider (11); where-in one path is directly used as reference signal to a digital signal oscilloscope (DSO) (12) while other signal passes through Device Under Test DUT (9), which deviates the phase and amplitude of the signal to second channel of the DSO (12). The two signals are digitized and stored on DSO (12) and transferred to computer for processing. Offline data on computer is demodulated, filtered, multiplied for evaluation of phase and gain of T/R Module. This method of evaluation of Phase and Gain of T/R Module can be repeated at desired operational temperature and across the operational bandwidth.








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**पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)


क्रमांक : 044108404  
SL No :



पेटेंट सं. / Patent No.	:	305296
आवेदन सं. / Application No.	:	1633/CHE/2009
फाइल करने की तारीख / Date of Filing	:	09/07/2009
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION,
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.NIDHI CHAWLA, 2.RAKESH BHAN 3.TAPAN MISRA.


प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD AND A DEVICE FOR EVALUATION OF PHASE AND GAIN CHARACTERISTICS OF A TRANSMIT RECEIVE MODULE नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 9th day of July 2009 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD AND A DEVICE FOR EVALUATION OF PHASE AND GAIN CHARACTERISTICS OF A TRANSMIT RECEIVE MODULE as disclosed in the above mentioned application for the term of 20 years from the 9th day of July 2009 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/01/2019  
Date of Grant :

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पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 9th day of July 2011 को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देब होगा।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 9th day of July 2011 and on the same day in every year thereafter.





## VSSC

94

**A Method for Removal of Propellant from a Case Bonded Motor**

305325

Cured solid propellants are normally resistant to solvents and chemicals because of the crosslinks developed during curing process. It is difficult to discard the cured propellant from the containers in which it is cured. The propellant removal from even a small case bonded grain is very tedious and hazardous operation. The present invention pertains to the removal of solid propellant material cured in a motor case assembly comprising, contacting the propellant surface with one or more solvents selected from the group consisting of tetrahydrofuran (THF), dioxane or their combination thereof for a period of time sufficient to dislodge the propellant from the motor case assembly. The invention also relates to a process for removal of cured propellant in a motor case assembly. The invention is particularly useful for removal of cured propellant from a shelf life expired or defected motor even in nozzle assembled condition where all other disposal methods are impractical. The process in this invention is retrieving the expensive motor case without any damage.



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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044108414  
SL No :



पेटेंट सं. / Patent No.	:	305325
आवेदन सं. / Application No.	:	7138/CHE/2015
फाइल करने की तारीख / Date of Filing	:	31/12/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Soyamol Thomas 2.Sethulakshmi Bhai V 3.B Rani Mathammal

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD FOR REMOVAL OF PROPELLANT FROM A CASE BONDED MOTOR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 31st day of December 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR REMOVAL OF PROPELLANT FROM A CASE BONDED MOTOR as disclosed in the above mentioned application for the term of 20 years from the 31st day of December 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/01/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 31st day of December 2017 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 31st day of December 2017 and on the same day in every year thereafter.



## VSSC

95

**Vulcanizable Epoxy Composition and Process for Preparing the same**

312266

The present invention relates to a vulcanizable epoxy composition comprising: a modified epoxy resin; a monoamidoamine; and a long chain unsaturated amine. In one aspect of the invention, the modified epoxy resin comprises an epoxy resin, polyether glycol and diluents. The modified epoxy resin is prepared by the steps of: heating a mixture of epoxy resin, polyether glycol and diluents; adding an adhesion promoter to said mixture; adding a cross-linking agent to the above reaction mixture; heating the reaction mixture to 170-200°C with stirring; cooling the mixture to ambient temperature. The invention also relates to a process for synthesizing a vulcanizable epoxy composition. The obtained epoxy resin adhesive composition may be applied to metal sheets followed by holding them together and curing at higher temperatures. The invention provides a vulcanizable epoxy composition which exhibits good adhesion and mechanical properties.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044110747  
SL No :



पेटेंट सं. / Patent No. : 312266  
आवेदन सं. / Application No. : 3713/CHE/2014  
फाइल करने की तारीख / Date of Filing : 30/07/2014  
पेटेंटी / Patentee : INDIAN SPACE RESEARCH ORGANISATION  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.Ranajit Pal 2.Dhanya Sreethankom Mohan 3.Suraj Sudhi  
4.Vattikuti Lakshmana Rao 5.Chethrappilly Padmanabhan  
Raghunadhan Nair

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित VULCANIZABLE EPOXY COMPOSITION AND PROCESS FOR PREPARING THE SAME नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 30th day of July 2014 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled VULCANIZABLE EPOXY COMPOSITION AND PROCESS FOR PREPARING THE SAME as disclosed in the above mentioned application for the term of 20 years from the 30th day of July 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/06/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 30th day of July 2016 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 30th day of July 2016 and on the same day in every year thereafter.





## VSSC

96

**Method of Producing Sheets and Foils from Brittle Metallic Alloys**

315483

The present invention is about a method of producing sheets or foils from brittle alloys through ingot metallurgy route followed by appropriate thermomechanical processing. The new hot working technique overcomes the problems faced during conventional forging and rolling. The alloys are enclosed in ductile mild steel blocks to provide hydrostatic pressure during forging and hot rolling. Tri-axial compressive stress generated due to in-situ formed cavity arrests the propagation of crack generated at the edges. The sheets/foils of desired thickness can then be prepared effectively by adopting Isothermal-cum Hydrostatic processing techniques.



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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044111784  
SL No :



पेटेंट सं. / Patent No.	:	315483
आवेदन सं. / Application No.	:	1645/CHE/2009
फाइल करने की तारीख / Date of Filing	:	10/07/2009
पेटेंटी / Patentee	:	DEPARTMENT OF SPACE,
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.THIRUVENKATAM VENKATESWARAN 2.DHENUVAKONDA SIVAKUMAR, 3.THOMAS THARIAN KADAVIL 4.SHARAD CHANDRA SHARMA 5.MAHESH CHAND MITTAL

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित "METHOD OF PRODUCING SHEETS AND FOILS FROM BRITTLE METALLIC ALLOYS" नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 10th day of July 2009 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled "METHOD OF PRODUCING SHEETS AND FOILS FROM BRITTLE METALLIC ALLOYS" as disclosed in the above mentioned application for the term of 20 years from the 10th day of July 2009 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/07/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 10th day of July 2011 को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 10th day of July 2011 and on the same day in every year thereafter.



## VSSC

97

**A Reactor Assembly for Continuous Production of Ammonium Perchlorate**

309912

The present invention discloses a simple process for the continuous production and crystallization of ammonium perchlorate which meet the stringent particle size distribution requirement of solid propellant formulation. In particular, the present invention relates to a process for the preparation of ammonium perchlorate, wherein ammonium chloride and sodium perchlorate solutions are prepared separately and reacted inside R1 to produce ammonium perchlorate, and the unreacted contents reacted completely in R2. The saturated ammonium perchlorate solution from R2 is crystallized inside a cascade of crystallizers, filtered and the ammonium perchlorate cakes are collected in a collection bin.





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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार  
GOVERNMENT OF INDIA  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044109922  
SL No :



पेटेंट सं. / Patent No.	:	309912
आवेदन सं. / Application No.	:	4272/CHE/2014
फाइल करने की तारीख / Date of Filing	:	02/09/2014
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Sananth Harihara Menon 2.Shobha Jose 3.Jayesh Jayan Kannamkumarath 4.Ramachandra Rao Adduru 5.Jojo Mathew 6.Kumkumath Mukundan 7.Venkataraman Srinivasan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में बयां प्रकटित A REACTOR ASSEMBLY FOR CONTINUOUS PRODUCTION OF AMMONIUM PERCHLORATE नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 2nd day of September 2014 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A REACTOR ASSEMBLY FOR CONTINUOUS PRODUCTION OF AMMONIUM PERCHLORATE as disclosed in the above mentioned application for the term of 20 years from the 2nd day of September 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 26/03/2019  
Date of Grant :

*OKSupta*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 2nd day of September 2016 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 2nd day of September 2016 and on the same day in every year thereafter.





## VSSC


98

Acrylic Based Pressure Sensitive Adhesive Compositions


310288

The present invention relates to acrylic based pressure sensitive film adhesive compositions which have good transferability and good shelf life for bonding of lightweight components. The invention is very much useful in satellite structural applications especially for the bonding of honeycomb structures and multilayer insulation bonding etc.






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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044110071  
SL No :



पेटेंट सं. / Patent No.	:	310288
आवेदन सं. / Application No.	:	3927/CHE/2013
फाइल करने की तारीख / Date of Filing	:	02/09/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Satheesh Chandran M. 2.TEMINA MARY ROBERT 3.SAVITHA NAIR 4.DONA MATHEW 5.C.P. REGHUNADHAN NAIR

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित ACRYLIC BASED PRESSURE SENSITIVE ADHESIVE COMPOSITIONS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 2nd day of September 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ACRYLIC BASED PRESSURE SENSITIVE ADHESIVE COMPOSITIONS as disclosed in the above mentioned application for the term of 20 years from the 2nd day of September 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 28/03/2019  
Date of Grant :

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PATENTS | DESIGNS | TRADE MARKS  
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*OKrajha*

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 2nd day of September 2015 को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देव होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 2nd day of September 2015 and on the same day in every year thereafter.



## VSSC

99


**A Flame Retardent Polymer-Ceramic Hybrid Coating Composition**

315551


The present invention relates to a water based durable, room temperature curable, non intumescent, flameproof, waterproof, eco-friendly thermal control coating based on polymer-ceramic hybrid composition, a process for its preparation and its application on multiple substrates including polymer, foam, wood, fabric, paper, thatched leaves, cardboards, wool, coir based products etc using methods like brushing, spraying, trowelling and impregnation.








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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044111804  
SL No :




पेटेंट सं. / Patent No.	:	315551
आवेदन सं. / Application No.	:	1582/CHE/2015
फाइल करने की तारीख / Date of Filing	:	27/03/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Pravin R 2.Smitha C Sukumaran 3.Prasanta Kumar Behera 4.RS Rajeev 5.G Prabhakaran 6.V Lakshmana Rao 7.CP Reghunadhan Nair

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A FLAME RETARDENT POLYMER-CERAMIC HYBRID COATING COMPOSITION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 27th day of March 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A FLAME RETARDENT POLYMER-CERAMIC HYBRID COATING COMPOSITION as disclosed in the above mentioned application for the term of 20 years from the 27th day of March 2015 in accordance with the provisions of the Patents Act, 1970.



जनदान की तारीख : 04/07/2019  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 27th day of March 2017 को और उसके पचास प्रत्येक वर्ष से उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 27th day of March 2017 and on the same day in every year thereafter.





## LPSC

100

Pressure regulator with double controls

324546

A pressure regulator has two single stage regulating units (2a, 2b) working independently and arranged in reverse cascaded way with only one regulator functions at a time. The primary regulator sensing is done by a low pressure bellow through a high pressure sensing device. Upon leakage or open mode failure of primary regulator (2a), high pressure sensing port diverts the inlet pressure to secondary regulators (2b) and prevents it reaching the primary regulator outlet. The open mode failure or leak of first regulator (2a) initiates the second regulator (2b) to carry out regulation. The regulators are in a single housing and thus overall envelope and weight is reduced, when compared two independent regulators.



**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044114909  
SL No :



पेटेंट सं. / Patent No.	:	324546
आवेदन सं. / Application No.	:	3179/CHE/2012
फाइल करने की तारीख / Date of Filing	:	02/08/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.SUNIL S. 2.M. RADHAKRISHNAN 3.M. YAGNANARAYANA

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PRESSURE REGULATOR WITH DOUBLE CONTROLS नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 2nd day of August 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PRESSURE REGULATOR WITH DOUBLE CONTROLS as disclosed in the above mentioned application for the term of 20 years from the 2nd day of August 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 06/11/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 2nd day of August 2014 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 2nd day of August 2014 and on the same day in every year thereafter.



## VSSC

101

**Control Actuation System for Aerospace Vehicles and a Method thereof**

314967

A control actuation system for aerospace vehicles having a direct drive valve (26) for metering fluid to actuators (4, 5) through independent hydraulic systems. Solenoid operated valves (39, 40) are respectively positioned on the actuators (4, 5) to supply and drain fluid from the hydraulic systems to the actuators. A bypass valve (50) is configured to connect and disconnect the fluid chambers (C1, C2, C3, C4) of actuators (4, 5) to the drive valve (26), and another bypass valve (70) functions to interconnect and disconnect said fluid chambers (C1, C2, C3, C4) from each other. An accumulator (69) is configured to maintain at least one actuator, even if other system fails or made to shut down. A failsafe valve (60) positioned in one of the actuating system, connects the respective actuating chamber (C1, C2, C3, C4) to the drive valve (26) in operational condition and to the accumulator (69) in non-operational condition.





भारत सरकार  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044111620  
SL No :



पेटेंट सं. / Patent No.	:	314967
आवेदन सं. / Application No.	:	3653/CHE/2011
फाइल करने की तारीख / Date of Filing	:	24/10/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.BIJAN BEHARI DAS 2.KONIKKARA VARAPPAN SIMON 3.KACHIGERE SHANKARAJAH NAGESH 4.KOTIAPPAVELAR SANKARASUBRAMANIAN ANAND KUMAR

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित CONTROL ACTUATION SYSTEM FOR AEROSPACE VEHICLES AND A METHOD THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 24th day of October 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled CONTROL ACTUATION SYSTEM FOR AEROSPACE VEHICLES AND A METHOD THEREOF as disclosed in the above mentioned application for the term of 20 years from the 24th day of October 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 27/06/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 24th day of October 2013 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24th day of October 2013 and on the same day in every year thereafter.






## VSSC

102 | Metallo-Ceramic Adhesive Composition


324651 |

This invention relates to metallo-ceramic adhesive composition pertains to an adhesive composition for bonding metals, metal alloys, super alloys and a process for their production thereof. Particularly, the adhesive composition of the invention is characterized by internally improved adhesive strength, a high degree of heat resistance and thermal shock resistance.






**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



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**भारत सरकार  
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PATENT CERTIFICATE**  
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क्रमांक : 044114948  
SL No :



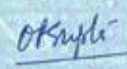
पेटेंट सं. / Patent No.	:	324651
आवेदन सं. / Application No.	:	6791/CHE/2015
फाइल करने की तारीख / Date of Filing	:	21/12/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Dr. Sreeja R 2.Shri AM Kamalan Kirubakaran 3.Dr. Deepa Devapal 4.Dr. PV Prabhakaran

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METALLO-CERAMIC ADHESIVE COMPOSITION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 21st day of December 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METALLO-CERAMIC ADHESIVE COMPOSITION as disclosed in the above mentioned application for the term of 20 years from the 21st day of December 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 07/11/2019  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 21st day of December 2017को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21st day of December 2017 and on the same day in every year thereafter.



## VSSC

103

**Method of producing a seamless conical component of Titanium alloy**

316444

Conical components of Titanium alloy required for spacecraft as part of propellant management device used to be realized by TIG welding of cold formed thin petals resulting in higher rate of rejections due to weld related defects in the components and thereby providing poor yield. This invention provided a solution to this problem by developing seamless (weld-free) conical shaped components through hot-forming route at about 940°C in three stages, which eliminated rejections and increased the yield in addition to retaining the mechanical properties of the alloy like Ultimate tensile strength, Yield strength and Percentage elongation. Hemispherical shape is formed in the first stage using die and punch, conical shaped dome is formed in second stage using die and punch finally conical component is formed in third stage by annealing of conical shaped dome at standard temperature at about 720°C and by machining the upper and lower parts thereafter.





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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044112100  
SL No :



पेटेंट सं. / Patent No.	:	316444
आवेदन सं. / Application No.	:	2548/CHE/2010
फाइल करने की तारीख / Date of Filing	:	01/09/2010
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.SATISH KUMAR SINGH 2.BHANU PANT 3.PARMESHWAR PRASAD SINHA

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD OF PRODUCING SEAMLESS CONICAL COMPONENT OF TITANIUM ALLOY नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 1st day of September 2010 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF PRODUCING SEAMLESS CONICAL COMPONENT OF TITANIUM ALLOY as disclosed in the above mentioned application for the term of 20 years from the 1st day of September 2010 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 19/07/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 1st day of September 2012 को और उसके बाद प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fee for renewal of this patent, if it is to be maintained will fall / has fallen due on 1st day of September 2012 and on the same day in every year thereafter.





## VSSC

104

**Nanoclay Dispersed Polyurethane Coating Composition and a Process for its Preparation**

316475

The present invention relates to a coating composition comprising a nanoclay dispersed polyurethane resin and a process for its preparation. In particular, the present invention relates to a nanoclay dispersed polyurethane resin coating composition comprising a nanoclay dispersed polyurethane resin, a mixture of triols as crosslinking agent and a diisocyanate curative.



**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

**भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044112112  
SL No :



पेटेंट सं. / Patent No.	:	316475
आवेदन सं. / Application No.	:	6703/CHE/2014
फाइल करने की तारीख / Date of Filing	:	30/12/2014
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Srirangam Siripothu 2.Dr Saraswathy Kesava Pillai Manu 3.Madhavan Pillai Radhakrishnan Nair 4.Gurumurthy Chandrasekaran

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में वयाप्रकटित NANOCALY DISPERSED POLYURETHANE COATING COMPOSITION AND A PROCESS FOR ITS PREPARATION नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 30th day of December 2014 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled NANOCALY DISPERSED POLYURETHANE COATING COMPOSITION AND A PROCESS FOR ITS PREPARATION as disclosed in the above mentioned application for the term of 20 years from the 30th day of December 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 19/07/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 30th day of December 2016 से और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 30th day of December 2016 and on the same day in every year thereafter.



## LPSC

105

**Compact pilot operated command valve with self aligning poppets**

316652

The Present invention relates to command valve assembly. In particular a pilot operated command value. The existing pilot operated command valves are complex and huge in structure and posses high leak rate. The command value assembly according to present invention discloses a pneumatically operated command value and a solenoid operated pilot valve which are packed in a single valve body in parallel to each other and the service ports of each valves are provided in at the same face of the valve body in order to achieve maximum compactness. Moreover, self aligning polycarbonate poppets are provided for the command valve in order to reduce the leakage rate of the command valve. The valve assembly according to present invention can be implemented as a command valve for pneumatically operated device, which requires highly reduced leak rate, compactness and weight advantage.





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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044112171  
SL No :



पेटेंट सं. / Patent No.	:	316652
आवेदन सं. / Application No.	:	3743/CHE/2012
फाइल करने की तारीख / Date of Filing	:	10/09/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.BENOY JOSEPH K 2.C. AMARASEKARAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित COMPACT PILOT OPERATED COMMAND VALVE WITH SELF ALIGNING POPPETS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 10th day of September 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled COMPACT PILOT OPERATED COMMAND VALVE WITH SELF ALIGNING POPPETS as disclosed in the above mentioned application for the term of 20 years from the 10th day of September 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 23/07/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के संवर्धन के लिए फीस, यदि इसे बनाए रखा जाना है, 10th day of September 2014 से और उसके पश्चात प्रत्येक वर्ष ने उसके दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 10th day of September 2014 and on the same day in every year thereafter.





## VSSC

106

**Device for non-destructive bond-evaluation of soft/brittle porous tiles in noisy environments using sweeping-frequency ultrasonic waves**

312451

The device comprises an electronic unit (1) having a transmitter for supplying sweeping-frequency ultrasonic signals, a receiver to receive sweeping frequency ultrasonic signals, an Analogue-to-Digital converter, a memory, a computer and a display unit (5), and at least one each of pulsing transducer (2), receiving transducer (3) and coupler (6), for coupling ultrasonic longitudinal waves in air with test tiles (4), and is capable of determining rapidly in the noisy industrial environments the quality characteristics such as bond/debond state, density, rigidity and thickness of test tiles for quality control thereof.



**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044110823  
SL No :



पेटेंट सं. / Patent No. : 312451  
आवेदन सं. / Application No. : 280/CHE/2007  
फाइल करने की तारीख / Date of Filing : 08/02/2007  
पेटेंटी / Patentee : 1. INDIAN SPACE RESEARCH ORGANISATION  
2. CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1. VALIAPARAMBIL KANDUNNI RAVINDRAN  
2. VISWANATHAN KUMAR 3. RAJAGOPALAN  
SUNDARESAN 4. BIRESH CHANDRA BHAUMIK  
5. CHAMBALON BYJU 6. PRESANNA SUDHAKARAN  
SUBODH 7. RAMANKUTTY MURALI 8. VITTALAPAI  
SARALA DEVI et al. et al.

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित SYSTEM PROVIDING SWEEPING FREQUENCY RESPONSE STUDIES FOR IMPROVED BOND EVALUATION OF SOFT/BRITTLE AND HIGHLY POROUS MATERIALS नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 8th day of February 2007 से बीस वर्ष की अवधि के लिए पेटेंट अनुवृत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SYSTEM PROVIDING SWEEPING FREQUENCY RESPONSE STUDIES FOR IMPROVED BOND EVALUATION OF SOFT/BRITTLE AND HIGHLY POROUS MATERIALS as disclosed in the above mentioned application for the term of 20 years from the 8th day of February 2007 in accordance with the provisions of the Patents Act, 1970.



अनुवृत्त की तारीख : 08/05/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 8th day of February 2009 से और उसके पश्चात प्रत्येक वर्ष से इसी दिन देब होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of February 2009 and on the same day in every year thereafter.



## VSSC

107

**Hypergolic Earth Storable Liquid Bi-Propellant  
Composition With Reduced Toxicity**

319030

This invention relates to a hypergolic liquid bi-propellant composition comprising tetraoleylamino copper (II) chloride having a copper content in the ratio of 5-6% by weight as catalyst, wherein, the bipropellant composition comprises hydrogen peroxide as the oxidizer and liquid hydrocarbon as the fuel, and the content of tetraoleylamino copper (II) chloride catalyst is 10 to 60% by weight of fuel.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044112981  
SL No :



पेटेंट सं. / Patent No.	:	319030
आवेदन सं. / Application No.	:	201641001117
फाइल करने की तारीख / Date of Filing	:	12/01/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.S. Reshmi 2.M. Sreejith 3.B Sivakumar 4.J Mary Gladis 5.KN Ninan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित HYPERGOLIC EARTH STORABLE LIQUID BI-PROPELLANT COMPOSITION WITH REDUCED TOXICITY नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 12th day of January 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled HYPERGOLIC EARTH STORABLE LIQUID BI-PROPELLANT COMPOSITION WITH REDUCED TOXICITY as disclosed in the above mentioned application for the term of 20 years from the 12th day of January 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 26/08/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 12th day of January 2018 से और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 12th day of January 2018 and on the same day in every year thereafter.





## VSSC

108

**A Telemetry Receiving System for Establishing Direct Communication between Spacecrafts and/or Probes**

320867

A telemetry receiving system for establishing direct communication between spacecrafts and probes comprises a set of limiters (B1, B4) connected with one or more gain amplifiers (B2) and one or more filters (B3, B5) for receiving and limiting a RF input signal (A5) to obtain wide dynamic range. A sweep aided local oscillator (B17) is implemented with a PLL frequency synthesizer (B26) that is interfaced with a sweep voltage generation unit (B18) and a VCXO (B16) for generating sweep aided carrier acquisition signal (A7) with a desired sweep rate and amplitude by controlling and tracking desired reference frequency (A8) of the VCXO. A single conversion unit (B6) is associated with the limiters and the local oscillator for generating an IF signal (A6) using super heterodyne architecture in relation to the RF input signal and the carrier acquisition signal. A data demodulation unit (B21) is communicated with the single conversion unit and a TCXO (B19). Once the IF signal is phase locked with a reference signal of the TCXO, the data demodulation unit demodulates and extracts telemetry data (A4) from phase modulated carrier signal of the spacecrafts or probes in accordance with phase locked carrier of the IF signal and the reference signal of the TCXO. Such receiving system achieves effective reception of telemetry data at high sensitivity and also covers wide dynamic range in the deep space environment. Also, it facilitates real time communication between the spacecrafts and the probes even in the absence of direct visibility from the ground stations at all the times.



**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044113558  
SL No :



पेटेंट सं. / Patent No. : 320867  
आवेदन सं. / Application No. : 3482/CHE/2010  
फाइल करने की तारीख / Date of Filing : 19/11/2010  
पेटेंटी / Patentee : INDIAN SPACE RESEARCH ORGANISATION  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.SHERLY JOY 2.NIVIN RAJENDRA RAO 3.SMITHA  
KRISHNAKUMARI SIVASANKARAN NAIR 4.DIANA  
MOHAN 5.THAKADIYIL JOSEPH APREN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में ब्यवहकृत A TELEMETRY RECEIVING SYSTEM FOR ESTABLISHING DIRECT COMMUNICATION BETWEEN SPACECRAFTS AND/OR PROBES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 19th day of November 2010 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A TELEMETRY RECEIVING SYSTEM FOR ESTABLISHING DIRECT COMMUNICATION BETWEEN SPACECRAFTS AND/OR PROBES as disclosed in the above mentioned application for the term of 20 years from the 19th day of November 2010 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 19/09/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 19th day of November 2012 को और उसके पर्याप्त प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 19th day of November 2012 and on the same day in every year thereafter.



## LPSC

109

**Sit-On-Umbilical System for Remote Fluid Servicing of Launch Vehicles**

322509

The flight segment (1) and ground segment (3) have integrated fluid line connectors (2a, 2b) connected respectively to the launch vehicle and the resource at the launch pedestal (4). The flight segment is constructed to mate with the ground segment. Automatic sealing device (5) provided in the flight segment (1) as fluid connector is such that it allows the fluid communication when flight segment is mated with ground segment (3) and automatically closes after the vehicle lift off from the launch pedestal. An actuator assembly (6) housing a pack of spring discs (7) and a twin spherical ball bearing (8) connects the ground segment with the launch pedestal. The ground segment (3) sit over the launch pedestal (4) through the twin spherical ball bearing mechanism and the pack of disc spring transfers the load to the ground segment. The flight segment (1) is constructed to perfectly mate with the ground segment (3) and while mating it is guided through guide pins placed in the ground segment with the guide pins (9) receptacle in flight segment.





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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044114161  
SL No :



पेटेंट सं. / Patent No.	:	322509
आवेदन सं. / Application No.	:	3789/CHE/2012
फाइल करने की तारीख / Date of Filing	:	11/09/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.DILIP V 2.HEMENDRA KUMAR D 3.B SATHIS KUMAR 4.M RADHAKRISHNAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित SIT-ON-UMBILICAL SYSTEM FOR REMOTE FLUID SERVICING OF LAUNCH VEHICLES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 11th day of September 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SIT-ON-UMBILICAL SYSTEM FOR REMOTE FLUID SERVICING OF LAUNCH VEHICLES as disclosed in the above mentioned application for the term of 20 years from the 11th day of September 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 10/10/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 11th day of September 2014 से और उसके पर्याप्त प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 11th day of September 2014 and on the same day in every year thereafter.





## VSSC

110

**Process for Multilayer Thermal Barrier Coating for Protection of Metallic Substrates from Extreme Temperature Conditions**

322018

Disclosed herein is a novel multilayer thermal barrier coating for the protection of metallic substrates from extreme temperature conditions and a method for making the same and the method comprises of preparation of preceramic slurry using a mixture of ceramic additives with an organic binder, coating substrates with the said slurry and again coating with thermo insulative zirconia coating. The invention is very much useful in space applications in the form of TBC over steel, inconel, 15CDV6 and titanium alloys. It is also useful in industrial applications including aircraft engine parts, combustion chambers and high thrust nozzles.



भारत सरकार  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044113979  
SL No :



पेटेंट सं. / Patent No.	:	322018
आवेदन सं. / Application No.	:	4132/CHE/2015
फाइल करने की तारीख / Date of Filing	:	07/08/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Deepa Devapal 2.Thazhathu Vettoor Sebastian 3.Amirtharaj Moses Kamalan Kirubaharan 4.Payadakkam Veedu Prabhakaran 5.Balakrishnan Deependran 6.Subramanian Jeyarajan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PROCESS FOR MULTILAYER THERMAL BARRIER COATING FOR PROTECTION OF METALLIC SUBSTRATES FROM EXTREME TEMPERATURE CONDITIONS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 7th day of August 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS FOR MULTILAYER THERMAL BARRIER COATING FOR PROTECTION OF METALLIC SUBSTRATES FROM EXTREME TEMPERATURE CONDITIONS as disclosed in the above mentioned application for the term of 20 years from the 7th day of August 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 30/09/2019  
Date of Grant :

*Signature*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 7th day of August 2017 को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7th day of August 2017 and on the same day in every year thereafter.



## VSSC

111

**High Temperature Resistant Reactive Thermoplastic Toughened Bismaleimide Based Resin System and Composites thereof**

322883

This invention relates to a toughened bismaleimide (BMI) based thermoset resin system wherein the phase morphology is rendered co-continuous with the thermoplastic toughener directed mainly for advanced composite applications. The co-continuous, cross-linked structure is achieved by engineering a reactive thermoplastic with a suitable functionality which is capable of co-reacting with the BMI, thus resulting in a toughened thermoplastic-thermoset network wherein the formed phase are locked by the cross linking of the thermoplastic with the thermoset, BMI.





क्रमांक : 044114282  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	322883
आवेदन सं. / Application No.	:	6785/CHE/2015
फाइल करने की तारीख / Date of Filing	:	21/12/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Satheesh Chandran M 2.K Sunitha 3.Dona Mathew 4.V Lakshmana Rao 5.CP Raghunadhan Nair

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित HIGH TEMPERATURE RESISTANT REACTIVE THERMOPLASTIC TOUGHENED BISMALEIMIDE BASED RESIN SYSTEM AND COMPOSITES THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 21st day of December 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled HIGH TEMPERATURE RESISTANT REACTIVE THERMOPLASTIC TOUGHENED BISMALEIMIDE BASED RESIN SYSTEM AND COMPOSITES THEREOF as disclosed in the above mentioned application for the term of 20 years from the 21st day of December 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 16/10/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट की नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 21st day of December 2017 को और उसके पश्चात प्रत्येक वर्ष में उसके दिन देना होगा।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21st day of December 2017 and on the same day in every year thereafter.





## VSSC

112

**A Facile Method for Preparation of Superhydrophobic Powders and Coating Compositions Comprising them**

323844

The present application relates to a facile method for preparing superhydrophobic powders and also relates to coatings compositions comprising the superhydrophobic powders prepared according to the method of the present invention. In particular, the present application relates to a process of grafting fluorine containing organic molecules on the surface of the nanoparticles in the presence of a catalyst to produce superhydrophobic powders.



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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



**भारत सरकार**  
**GOVERNMENT OF INDIA**  
**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044114625  
SL No :



पेटेंट सं. / Patent No.	:	323844
आवेदन सं. / Application No.	:	201641000593
फाइल करने की तारीख / Date of Filing	:	07/01/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Dr. KS Santhosh Kumar 2.Shri Ramakrishna S 3.Dr. Dona Mathew 4.Dr. V Lakshmana Rao 5.Dr. CP Reghunadhan Nair

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A FACILE METHOD FOR PREPARATION OF SUPERHYDROPHOBIC POWDERS AND COATING COMPOSITIONS COMPRISING THEM नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 7th day of January 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A FACILE METHOD FOR PREPARATION OF SUPERHYDROPHOBIC POWDERS AND COATING COMPOSITIONS COMPRISING THEM as disclosed in the above mentioned application for the term of 20 years from the 7th day of January 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 29/10/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखने के लिए है, 7th day of January 2018 से और उसके पश्चात प्रत्येक वर्ष में उसी दिन देना होगा।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7th day of January 2018 and on the same day in every year thereafter.



## VSSC


### 113 Method of Welding Thin Wires

324122


A method of welding thin wires involves forming a swelled portion (20) at both ends of thin wires (4) using a laser pulse from a laser unit, and flattening the swelled portion of the thin wires using mechanical tools. Holding the end flattened wires in alignment to the respectively provided terminal pins (3) using a fixture (1), such that the fixture positions and clamps the wires and the terminal pins in a required welding position. Locating a laser beam from the laser unit at the wire pin joints using a locating device and welding the wires (4) with the terminal pins using the laser pulse. The wire ends and the terminal pins (3) are melted and fused together using the laser pulse. An inert gas chamber is formed to surround the fixture, such that the inert gas chamber avoids oxidation during welding process of the thin wires and terminal pins.








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पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044114761  
SL No :



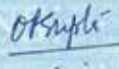
पेटेंट सं. / Patent No.	:	324122
आवेदन सं. / Application No.	:	4423/CHE/2011
फाइल करने की तारीख / Date of Filing	:	16/12/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
अविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.ALIYAS AREECKAL VARKEY 2.PARMESHWAR PRASAD SINHA 3.REKESH SASIBHUSHAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD OF WELDING THIN WIRES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 16th day of December 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF WELDING THIN WIRES as disclosed in the above mentioned application for the term of 20 years from the 16th day of December 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 31/10/2019  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 16th day of December 2013 को और उसके पश्चात प्रत्येक वर्ष में उन्नी दिन देय रहेगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 16th day of December 2013 and on the same day in every year thereafter.





## VSSC

114

**A Pyrotechnic Pressure Generating Composition For  
Different High Performance Pyro Devices**

326236

Disclosed herein is a single pyrotechnic pressure generating composition for three different high performance pyro devices used in space applications. It comprises of guanidinium azotetrazolate (GZT) as fuel and ammonium perchlorate (AP) as oxidant besides containing an energetic binder. The invention is having space applications for explosive actuated multi strand cable cutting shut off valve, mortar based parachute deployment system for deceleration of crew module and burst qualification of nozzle closures of solid rocket motors/liquid engines at sea level. It is also useful in gas pressure actuated mechanical devices such as power cartridges for cutting cables/diaphragms, large caliber guns/mortars for accelerating projectiles and gas pressure generators such as pushing of pistons, electric generators, turbines and pneumatic tools.



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**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044115509  
SL No :



पेटेंट सं. / Patent No.	:	326236
आवेदन सं. / Application No.	:	201741007169
फाइल करने की तारीख / Date of Filing	:	01/03/2017
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.B. Hari Haranath 2.Harikrishnan ES 3.Vineeth GM 4.Vinod Kumar N 5.Baby Abraham

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PYROTECHNIC PRESSURE GENERATING COMPOSITION FOR DIFFERENT HIGH PERFORMANCE PYRO DEVICES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 1st day of March 2017 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PYROTECHNIC PRESSURE GENERATING COMPOSITION FOR DIFFERENT HIGH PERFORMANCE PYRO DEVICES as disclosed in the above mentioned application for the term of 20 years from the 1st day of March 2017 in accordance with the provisions of the Patents Act,1970.



अनुदान की तारीख : 28/11/2019  
Date of Grant :

*OKSupte*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 1st day of March 2019 को और उसके पचास प्रत्येक वर्ष में उगी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 1st day of March 2019 and on the same day in every year thereafter.



## URSC

115

**A Power Control System with Single Inductor Integrated Battery Charger Fully Regulated Bus (IBCFR) and the Method thereof**

311153

The present invention provides a power control system with single inductor integrated battery charger and fully regulated (IBCFR) bus for power generation and management in a spacecraft system. The system comprises a switching integrated circuit (201) having a single inductor  $L$  with two switches namely first switch  $S1$  and second switch  $S2$  that is located proximal to a battery charger unit (202). The switching circuit (201) is disposed between an input power supply source (203) and an output power load (204) to facilitate battery charging along with power processing in an embedded fashion for supplying regulated output power and charging current. A switching controller (205) is interfaced with the switching circuit (201) and electrically coupled to the two switches  $S1$  and  $S2$  forms first control loop and second control loop which are interconnected in tandem for sharing single inductor such that two switches  $S1$  and  $S2$  are controlled dependently based on the bandwidth of each independent loop generated by the switching controller (205). It also comprises one selective mode switch  $S3$  that is disposed in the second loop between the detecting means of the input power source and battery charger unit (202) to select the power control system to operate either in first mode or second mode.





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**भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044110341  
SL No :



पेटेंट सं. / Patent No. : 311153  
आवेदन सं. / Application No. : 5576/CHE/2014  
फाइल करने की तारीख / Date of Filing : 05/11/2014  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहां लागू हो) / Inventor(s) : C.S. Madhusudhana

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A POWER CONTROL SYSTEM WITH SINGLE INDUCTOR INTEGRATED BATTERY CHARGER FULLY REGULATED BUS (IBCFR) AND THE METHOD THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 5th day of November 2014 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A POWER CONTROL SYSTEM WITH SINGLE INDUCTOR INTEGRATED BATTERY CHARGER FULLY REGULATED BUS (IBCFR) AND THE METHOD THEREOF as disclosed in the above mentioned application for the term of 20 years from the 5th day of November 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 12/04/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 5th day of November 2016 से और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 5th day of November 2016 and on the same day in every year thereafter.





## SAC

116

**Wideband Waveguide Turnstile Junction Based Microwave Coupler And Monopulse Tracking Feed System**

331104

The present invention relates to a waveguide turnstile junction based coupler (1) for selectively coupling the higher order modes of propagating microwave energy while allowing the dominant mode of said microwave energy to propagate unperturbed comprising of:

- an over-moded circular waveguide (2),
- a single-mode circular waveguide (5),
- a taper region (3) of circular cross-section having two ends, a broad end (6) and a narrow end (7), the broad end (6) of the taper region (3) is connected to said over-moded circular waveguide (2), while the narrow end (7) of the taper region (3) is connected to said single-mode circular waveguide (5) of smaller cross-section after tapering down in the axial direction;
- a branch-coupling section (4) comprised of a plurality of equispaced coupling arms (10) symmetrically disposed around the circumference of the junction of said over-moded circular waveguide (2) and said taper region (3); each said coupling arm (10) is in signal communication with the over-moded circular waveguide section (2).

The present invention also provides a monopulse tracking feed system for generating tracking sum signal and tracking difference signal to be used for directing an antenna.



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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044117178  
SL No :



पेटेंट सं. / Patent No.	:	331104
आवेदन सं. / Application No.	:	2017/CHE/2011
फाइल करने की तारीख / Date of Filing	:	14/06/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.RAJEEV JYOTI 2.KHAGINDRA KUMAR SOOD 3.SHASHANK SAXENA 4.JIGAR PANDYA 5.YOGESH HARSHADRAY TRIVEDI

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित WIDEBAND WAVEGUIDE TURNSTILE JUNCTION BASED MICROWAVE COUPLER AND MONOPULSE TRACKING FEED SYSTEM नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 14th day of June 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled WIDEBAND WAVEGUIDE TURNSTILE JUNCTION BASED MICROWAVE COUPLER AND MONOPULSE TRACKING FEED SYSTEM as disclosed in the above mentioned application for the term of 20 years from the 14th day of June 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/02/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 14th day of June 2013 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note : The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 14th day of June 2013 and on the same day in every year thereafter.



## NARL

117


**Raman Lidar System for Measurement of Atmospheric Water Vapour**

333818


The present invention relates to a Raman LIDAR system. The Raman LIDAR system includes a transmitter subsystem, a receiver subsystem, and an optical separator for isolating the optical axes of the transmitter subsystem and the receiver subsystem, thereby providing the biaxial configuration. The optical separator aligns the optical axes of transmitter subsystem and the receiver subsystem parallel to each other. The transmitter subsystem, the receiver subsystem, and the optical separator are contained in a mechanical housing. The mechanical housing thus enables a compact arrangement of the Raman LIDAR system for a greater mobility. A titling mechanism is provided on the rack to facilitate tilting of the mechanical housing. This provision of titling the mechanical housing enables the Raman LIDAR system to scan the atmosphere from various angles, thereby increasing an area of scanning the atmosphere for water vapour/aerosol.








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सत्यमेव जयते

**भारत सरकार**  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044118099  
SL No :




पेटेंट सं. / Patent No.	:	333818
आवेदन सं. / Application No.	:	1972/CHE/2012
फाइल करने की तारीख / Date of Filing	:	17/05/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Y. BHAVANI KUMAR 2.A. JAYARAMAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित RAMAN LIDAR SYSTEM FOR MEASUREMENT OF ATMOSPHERIC WATER VAPOUR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 17th day of May 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled RAMAN LIDAR SYSTEM FOR MEASUREMENT OF ATMOSPHERIC WATER VAPOUR as disclosed in the above mentioned application for the term of 20 years from the 17th day of May 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/03/2020  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 17th day of May 2014 को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 17th day of May 2014 and on the same day in every year thereafter.





## HQ IISc

118

**Method of communicating signal data in GNSS using LDPC convolution codes and a system thereof**

335137

The present invention relates to a method and system for communicating signal data in GNSS system using LDPC convolution codes. The method involves, at transmitting end, formatting signal data into a set of subframes. Each subframe of the signal data can be encoded in accordance with a parity check matrix defining Tanner graph representation of LDPC convolution codes. The encoded signal data can be interleaved and added with a Sync word field to transmit an interleaved block of encoded signal data through a communication channel. At receiving end, the interleaved block of encoded signal data can be de-interleaved after it is received from the communication channel. The Tanner Graph shows the connectivity in time invariant parity check matrix. A message passing technique is used to decode the LDPCCC encoded message. The encoded signal data can be decoded through the message passing technique to obtain the signal data primitively transmitted at the transmitting end. Such method and system are capable of achieving error free performance over the GNSS communication channel for effective navigation data communication, and also provide good BER performance over a wide range of Signal-to-Noise ratios.

***This Patent is also registered in USA***



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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044118541  
SL No :



पेटेंट सं. / Patent No.	:	335137
आवेदन सं. / Application No.	:	2064/CHE/2009
फाइल करने की तारीख / Date of Filing	:	27/08/2009
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	SURESH VITHAL KIBE

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD OF COMMUNICATING SIGNAL DATA IN GNSS USING LDPC CONVOLUTION CODES AND A SYSTEM THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 27th day of August 2009 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF COMMUNICATING SIGNAL DATA IN GNSS USING LDPC CONVOLUTION CODES AND A SYSTEM THEREOF as disclosed in the above mentioned application for the term of 20 years from the 27th day of August 2009 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 18/03/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 27th day of August 2011 को और उसके पश्चात प्रत्येक वर्ष से उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 27th day of August 2011 and on the same day in every year thereafter.



## VSSC

119

**Method of Charging Pyrogen Igniters for Space Applications**

334195

A pyrogen igniter charging technique involves resin inhibiting the nozzle end of a cast solid free-standing propellant grain and positioning concentrically inside a fiber glass case of the igniter and assembled on a dedicated jig. An optimal resin mix is formulated and prepared for injection. The resin mix is then de-aerated and injected in to the annular gap between propellant grain and igniter case, and cured at ambient conditions. The head end of the igniter so charged is sealed and the resin is also cured at ambient conditions. The method of charging pyrogen igniters according to present invention provides a safe and reproducible method of realizing zero-defect pyrogen igniters suitable for single shot applications of expensive space missions.





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GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044118232  
SL No :



पेटेंट सं. / Patent No.	:	334195
आवेदन सं. / Application No.	:	4193/CHE/2012
फाइल करने की तारीख / Date of Filing	:	08/10/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.THANKAPPAN RAMESHCHANDRAN 2.ANTONY STEEPHEN 3.SIBAPADA PAL 4.AROLICKAL GOPALAN RAJENDRAN 5.VENKATARAMAN SRINIVASAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD OF CHARGING PYROGEN IGNITERS FOR SPACE APPLICATIONS नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 8th day of October 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF CHARGING PYROGEN IGNITERS FOR SPACE APPLICATIONS as disclosed in the above mentioned application for the term of 20 years from the 8th day of October 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 09/03/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 8th day of October 2014 से और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of October 2014 and on the same day in every year thereafter.






## VSSC

120 Process of producing carbon/carbon composite


331700

Disclosed herein is an improved process for the fabrication of carbon/carbon composite consisting of carbon as the matrix material and carbon fiber dispersed in the matrix material as the reinforcing phase, wherein hybrid carbon fibers are chopped, split and then mixed with mesophase pitch using distilled water to form charge, said charge is molded, dried, hot pressed and carbonized. The pores created during carbonisation are then filled using resin impregnation, said carbon/carbon compact is thermoset and finally carbonized. This cycle of resin impregnation-thermosetting-carbonisation is repeated 3 times. In addition to devising a processing technology involving less processing time, invention addresses the problem of producing carbon/carbon composite with variable density and high conductivity.






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GEOGRAPHICAL INDICATIONS



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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044117388  
SL No :



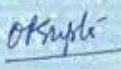
पेटेंट सं. / Patent No.	:	331700
आवेदन सं. / Application No.	:	1713/CHE/2012
फाइल करने की तारीख / Date of Filing	:	02/05/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.THAKUR SUDESH KUMAR RAUNIJA 2.SANKARANARAYANAN BABU 3.CHERUVATHOOR SIMON WESLEY

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PROCESS OF PRODUCING CARBON/CARBON COMPOSITE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 2nd day of May 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS OF PRODUCING CARBON/CARBON COMPOSITE as disclosed in the above mentioned application for the term of 20 years from the 2nd day of May 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 11/02/2020  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 2nd day of May 2014 से और उसके पश्चात प्रत्येक वर्ष से उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 2nd day of May 2014 and on the same day in every year thereafter.



## LPSC


121 Fluid Level Indicator

333246


Described herein is a fluid level indicator including a sensor array having a plurality of Micro Electro Mechanical Systems (MEMS) capacitors immersable in a fluid in a reservoir. The fluid level indicator further includes a read-out module coupled to the sensor array for reading a capacitance from the plurality of MEMS capacitors and converting the capacitance to a voltage output. Further, a signal processing unit is coupled to the read-out module for receiving the voltage output from the read-out module and processing the voltage output for determining a level of fluid in the reservoir.








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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044117917  
SL No :



पेटेंट सं. / Patent No.	:	333246
आवेदन सं. / Application No.	:	2599/CHE/2011
फाइल करने की तारीख / Date of Filing	:	28/07/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANIZATION

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A LIQUID LEVEL SENSOR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 28th day of July 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A LIQUID LEVEL SENSOR as disclosed in the above mentioned application for the term of 20 years from the 28th day of July 2011 in accordance with the provisions of the Patents Act, 1970.



जनान की तारीख : 27/02/2020  
Date of Grant :

**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
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*OK Singh*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 28th day of July 2013 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 28th day of July 2013 and on the same day in every year thereafter.





## VSSC

122

**A compact force motor for producing high force output**

334366

The present invention relates to a compact force motor for producing high force output comprising at least a pair of magnetic housing at least two oppositely placed magnets comprising two ends a first end and a second end the magnets are preferable permanent magnets. The magnets on the first end a fixed iron holds the magnets on the other end; a moving iron; a push rod assembly connected to the drive cones axially aligned and couple to the tubular support a push rod assembly connected to the drive cones; at least a pair of diaphragms connected to the drives cones; a plurality of limit stops housed over the periphery of the magnetic housing a coil winding assembly encapsulating the magnetic housing wherein the compact motor provides a suitable output.



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**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044118307  
SL No :



पेटेंट सं. / Patent No.	:	334366
आवेदन सं. / Application No.	:	4200/CHE/2015
फाइल करने की तारीख / Date of Filing	:	12/08/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Pradeep Kumar 2.Dr. B.B. Das 3.M. Srinivasan 4.K.S. Nagesh 5.K.S. Anand Kumar

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A COMPACT FORCE MOTOR FOR PRODUCING HIGH FORCE OUTPUT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 12th day of August 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A COMPACT FORCE MOTOR FOR PRODUCING HIGH FORCE OUTPUT as disclosed in the above mentioned application for the term of 20 years from the 12th day of August 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 11/03/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 12th day of August 2017 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 12th day of August 2017 and on the same day in every year thereafter.



## URSC

123

**LSS-ISAC-1 Highland Lunar Soil Simulant and a Method for its Manufacture**

336998

This invention relates to a lunar soil simulant prepared from a terrestrial analogue and a method for producing and manufacturing it. The simulant almost equivalent with regolith of lunar highland region and comparable with Apollo 16 return samples. The lunar soil simulant can be used for scientific studies of lunar terrain relating to mobility/ trafficability of rover for scientific explorations or for the study of geo-technical/ mechanical properties of lunar soil for understanding the engineering behaviour of lunar regolith or to carry out fundamental research work (theoretical and experimental) to postulate a broad design philosophy for realizing civil engineering structures on Moon surface, and to make a pathway to lunar locomotive engineering.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044119282  
SL No :



पेटेंट सं. / Patent No.	:	336998
आवेदन सं. / Application No.	:	2423/CHE/2014
फाइल करने की तारीख / Date of Filing	:	15/05/2014
पेटेटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.I Venugopal 2.S A Kannan 3.Shamrao 4.V Chandra Babu 5.Prof S Anbazhagan 6.Dr. S Arivazhagan 7.C R Paramasivam 8.M Chinnamuthu, 9. Dr. K Muthukumar

प्रमाणित किया जाता है कि पेटेटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD FOR MANUFACTURE OF HIGHLAND LUNAR SOIL SIMULANT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 15th day of May 2014 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR MANUFACTURE OF HIGHLAND LUNAR SOIL SIMULANT as disclosed in the above mentioned application for the term of 20 years from the 15th day of May 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 15/05/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 15th day of May 2016 को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देव होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 15th day of May 2016 and on the same day in every year thereafter.





## VSSC

124

Process for Preparing Carbon/Silicon Carbide Composites

337549

Disclosed herein is a method for making C/SiC composite with self-oxidation protection suited for high heat flux applications. The invention also relates to a method for the fabrication of components suitable for use in nozzle throat inserts of satellites and rocket nozzle thrusters of launch vehicles, combustor segments and boundary layer splitters of air breathing propulsion engine, brake discs and clutch plates of reusable launch vehicle and high speed automotive, high temperature fasteners for aerospace, defence and industrial sectors, high temperature moulds, cavities, piston assemblies, crucibles, etc.



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पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044119488  
SL No :



पेटेंट सं. / Patent No.	:	337549
आवेदन सं. / Application No.	:	201841011636
फाइल करने की तारीख / Date of Filing	:	28/03/2018
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Thakur Sudesh Kumar Raunija 2.Mariamma Mathew 3.Sharad Chandra Sharma 4.PV VENKITAKRISHNAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PROCESS FOR PREPARING CARBON/SILICON CARBIDE COMPOSITES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 28th day of March 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS FOR PREPARING CARBON/SILICON CARBIDE COMPOSITES as disclosed in the above mentioned application for the term of 20 years from the 28th day of March 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 29/05/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 28th day of March 2020 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 28th day of March 2020 and on the same day in every year thereafter.



## VSSC

125 | A Liquid Cooling And Heating Garment

338868

This invention relates to the present invention relates to a liquid cooling and heating garment made of biocompatible fabrics and parts to provide comfortable body temperature and removal of sweat. Advantageously, the garment has superior heat transfer efficiency and can be conveniently used for maintaining the body temperature of wearer at levels suitable for the physiological performance required. These garments find use in human space flight and also for earth bound operations such as fire fighting, working in steel mill and the like.





क्रमांक : 044119954  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	338868
आवेदन सं. / Application No.	:	201641004369
फाइल करने की तारीख / Date of Filing	:	08/02/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Srirangam Siripothu 2.Reshmi Balachandran 3.Saraswathi Kesava Pillai Manu 4.Gurumurthy Chandrasekaran

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A LIQUID COOLING AND HEATING GARMENT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 8th day of February 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A LIQUID COOLING AND HEATING GARMENT as disclosed in the above mentioned application for the term of 20 years from the 8th day of February 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 19/06/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए शुल्क, यदि इसे नवीकरा गया है, 8th day of February 2018 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगा।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of February 2018 and on the same day in every year thereafter.





## URSC

126 Rotary Drive Actuator

318075

The present invention is in the field of rotary drive actuators and in particular relates to a bi-axial rotary drive actuator that actuates the connected devices such as an antenna, in two orthogonal axes. Desired torque for rotation of the connected devices is provided by a direct-drive, brushless, non-g geared DC motor. The bi-axial rotary drive actuator is provided with a flexi-print cable-based flex cable assembly for electrical transmission. Further, a non-contact RF rotary joint is used to transfer RF signals to the connected devices. A restraint and release assembly is connected to the bi-axial rotary actuator in the form of a single pin-puller device actuated by a Shape Memory Alloy (SMA) wire.



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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार  
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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044112644  
SL No :



पेटेंट सं. / Patent No. : 318075  
आवेदन सं. / Application No. : 2941/CHE/2007  
फाइल करने की तारीख / Date of Filing : 07/12/2007  
पेटेदी / Patentee : DEPARTMENT OF SPACE, ISRO

प्रमाणित किया जाता है कि पेटेदी को उपरोक्त आवेदन में यथाप्रकटित ROTARY DRIVE ACTUATOR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 7th day of December 2007 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ROTARY DRIVE ACTUATOR as disclosed in the above mentioned application for the term of 20 years from the 7th day of December 2007 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 13/08/2019  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 7th day of December 2009 से और उसके परवर्त प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7th day of December 2009 and on the same day in every year thereafter.



## VSSC

127

**Room Temperature Processable Oxidation Resistant Coating Material**

337418

The present invention pertains to an oxidation resistant organic-inorganic hybrid coating composition for composites, metals or ceramics processable at room temperature to protect it from oxidizing environment containing NO, HN03, N<sub>2</sub>O<sub>4</sub> and MON or any combination thereof and to a method of production thereof. The invention also relates to a method of application on composites, metals or ceramics without involvement of complex technology and machineries.





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GEOGRAPHICAL INDICATIONS



**भारत सरकार  
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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044119444  
SL No :



पेटेंट सं. / Patent No.	:	337418
आवेदन सं. / Application No.	:	201641004366
फाइल करने की तारीख / Date of Filing	:	08/02/2016
पेटेटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Ranajit Pal 2.Suraj Sudhi 3.Vattikuti Lakshmana Rao 4.Chethrappilly Padmanabhan Raghunadhan Nair

प्रमाणित किया जाता है कि पेटेटी को उपरोक्त आवेदन में यथाप्रकटित ROOM TEMPERATURE PROCESSABLE OXIDATION RESISTANT COATING MATERIAL नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 8th day of February 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ROOM TEMPERATURE PROCESSABLE OXIDATION RESISTANT COATING MATERIAL as disclosed in the above mentioned application for the term of 20 years from the 8th day of February 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 27/05/2020  
Date of Grant :

*OKSudhi*  
पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बकाया रखा जाता है, 8th day of February 2018 से और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of February 2018 and on the same day in every year thereafter.





## VSSC

128

**A Process for Preparation of Silicon Carbide Coated Carbon Nanomaterials using Polyborosiloxanes**

338705

The present invention relates to polymer-derived ceramic oxidation protection coating which can be coated over carbon nanotubes/nanowires/rods thereby protecting the carbon from oxidation at temperatures above 500°C as well as a novel method for converting CNT to SiCNT. It is a unique system containing inorganic elements which forms borosilicate glasses on exposure to air. A ceramic material containing carbon nanotubes coated with a matrix featuring inorganic elements and silicon carbide are prepared through a novel route of preceramic polymer pyrolysis. Here, the carbon nanotubes react with the silicon containing infiltrant resin so that SiC coating is formed on the carbon nanotubes on sintering. The infiltrant inorganic precursor material either reacts with some of the carbon layers to form in situ silicon carbide, and that the formed SiC is sufficiently dense that it effectively seals the surface or in the other case it converts CNT to SiC.



क्रमांक : 044119890  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No. : 338705  
आवेदन सं. / Application No. : 201741024214  
फाइल करने की तारीख / Date of Filing : 10/07/2017  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.Deepa Devapal 2.Gopakumar MP 3.PV Prabhakaran 4.S Packirisamy 5.B Swaminathan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR PREPARATION OF SILICON CARBIDE COATED CARBON NANOMATERIALS USING POLYBOROSILOXANES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 10th day of July 2017 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR PREPARATION OF SILICON CARBIDE COATED CARBON NANOMATERIALS USING POLYBOROSILOXANES as disclosed in the above mentioned application for the term of 20 years from the 10th day of July 2017 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 18/06/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 10th day of July 2019 से और उसके परवर्त प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 10th day of July 2019 and on the same day in every year thereafter.



## VSSC

129

**Method of Manufacturing Silica Tiles for Thermal Protection of Re-Entry Space Vehicles**

340448

The invention presents a method of machining contour silica tiles for winged body space vehicles using a single porous silica fixture. The method comprises machining an inner mold line (IML) and two side surfaces of a silica tile using diamond coated tools by holding silica billet in simple vacuum fixture as a first step. The porous silica fixture is machined to match the surfaces of the silica tile using CNC program and solid model of silica tile surfaces. The silica tile is then positioned and held under vacuum using the inner mold line (IML) and the two side surfaces and the outer mold line (OML) and the remaining two surfaces of the silica tile are machined as a second step. Black surface coating and white surface coating are performed for densification of the machined silica tile and the resulting silica tile is sintered using the porous silica fixture as a support block. The porous silica fixture is then reused for machining multiple dissimilar contour silica tiles.





**INTELLECTUAL  
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GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

**भारत सरकार**  
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**THE PATENT OFFICE**  
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**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044120488  
SL No :



पेटेंट सं. / Patent No.	:	340448
आवेदन सं. / Application No.	:	1313/CHE/2011
फाइल करने की तारीख / Date of Filing	:	15/04/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.HANAMANTRAY BALURAGI 2.SASIBHUSHAN RAKESH 3.PARAMESWAR PRASAD SINHA

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में बयां प्रकटित METHOD OF MACHINING SILICA TILES FOR THERMAL PROTECTION OF RE-ENTRY SPACE VEHICLES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 15th day of April 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF MACHINING SILICA TILES FOR THERMAL PROTECTION OF RE-ENTRY SPACE VEHICLES as disclosed in the above mentioned application for the term of 20 years from the 15th day of April 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 04/07/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 15th day of April 2013 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 15th day of April 2013 and on the same day in every year thereafter.





## VSSC


130

**A Composition for Phenolic ablative composites providing very high yield of strong char**


341790

The present application relates to the field of phenolic ablative compositions having high flame retardancy, enhanced thermal and oxidative stability, high strength and good char forming properties and char retaining characteristics. In particular, the present application relates to novel phenolic ablative compositions comprising at least one phenolic resin, a reinforcing agent and a nanofiller.






**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

**भारत सरकार  
GOVERNMENT OF INDIA  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**


क्रमांक : 044120977  
SL No :



पेटेंट सं. / Patent No.	:	341790
आवेदन सं. / Application No.	:	201641010309
फाइल करने की तारीख / Date of Filing	:	24/03/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
अविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Termina Mary Robert 2.Satheesh chandran Maniyeri 3.Satheesh Kumar Balakrishna Pillai 4.Sunitha Kayyurkarathi 5.Bipin Babu 6.Dona Mathew 7.Chethrappilly Padmanabhan Reghunadhan Nair


प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A COMPOSITION FOR PHENOLIC ABLATIVE COMPOSITES PROVIDING VERY HIGH YIELD OF STRONG CHAR नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 24th day of March 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A COMPOSITION FOR PHENOLIC ABLATIVE COMPOSITES PROVIDING VERY HIGH YIELD OF STRONG CHAR as disclosed in the above mentioned application for the term of 20 years from the 24th day of March 2016 in accordance with the provisions of the Patents Act,1970.



अनुदान की तारीख : 16/07/2020  
Date of Grant :

**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
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पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 24th day of March 2018 को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देव होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24th day of March 2018 and on the same day in every year thereafter.



## SAC

131

A Circuit with a pair of CRLH Transmission Lines

342024

The present invention discloses a high frequency, ultra broadband, multi octave quadrature hybrid circuit in ultra compact size and simple construction using metamaterial structure. The quadrature hybrid is a four-port device and includes a pair of CRLH transmission lines for dividing an input signal into two quadrature output signals. The quadrature hybrid circuit includes a dielectric substrate and a pair of loosely coupled microstrip transmission lines disposed on the top layer of the dielectric substrate. The bottom layer of the dielectric substrate includes a multi-section complementary split ring resonators etched on it. The quadrature hybrid circuit may be employed in design of power divider/combiner, coupler/hybrid, mixers, and other high frequency circuits such as IQ modulators, power amplifiers, frequency multipliers, di-multiplexers, antenna feeds, beam-forming networks, variable attenuators, radar phase cancellers etc.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044121068  
SL No :



पेटेंट सं. / Patent No.	:	342024
आवेदन सं. / Application No.	:	3090/CHE/2011
फाइल करने की तारीख / Date of Filing	:	08/09/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.PUJA SRIVASTAVA 2.CHEEMALAMARI VENKATA NARASIMHA RAO 3.RAJKUMAR ARORA

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A CIRCUIT WITH A PAIR OF CRLH TRANSMISSION LINES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 8th day of September 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A CIRCUIT WITH A PAIR OF CRLH TRANSMISSION LINES as disclosed in the above mentioned application for the term of 20 years from the 8th day of September 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 20/07/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 8th day of September 2013 से और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगा।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of September 2013 and on the same day in every year thereafter.





## SAC


132

Cross-Pin Tuning Mechanism for Cross-Coupled Filters


345811

A ground isolated coaxial probe I cross-pin is used to provide electric coupling between two adjacent resonators in microwave filters for generating transmission zeros. Exact characterization of this cross-pin for proving required coupling is necessary. The external tunability of this cross-pin will help in minimizing time for coupling characterization and also adds flexibility during final filter response optimization. The present invention proposes a new mechanism for externally tuning the cross-pin. The invention is implemented on a six pole (6-2-0) cross coupled Dielectric resonator (DR) filter at Ku-band, but this invention can be implemented on any kind of filter at any frequency band where cross-pin is used. The externally operable cross-pin tuning mechanism according to the invention is capable of providing lateral movement to the cross-pin with respect to the cavities to provide required coupling variation between the resonators.






**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

**भारत सरकार  
GOVERNMENT OF INDIA**  
**पेटेंट कार्यालय  
THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)


क्रमांक : 044122428  
SL No :



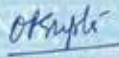
पेटेंट सं. / Patent No.	345811
आवेदन सं. / Application No.	3162/CHE/2012
फाइल करने की तारीख / Date of Filing	01/08/2012
पेटेंटी / Patentee	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	1.K.V.TRIVEDI 2.A.V.PATHAK 3.YH.DAVE 4.AMBRISH GHADIYA 5.SHILPI SONI

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित CROSS PIN TUNING MECHANISM FOR CROSS COUPLED FILTER नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 1st day of August 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुवत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled CROSS PIN TUNING MECHANISM FOR CROSS COUPLED FILTER as disclosed in the above mentioned application for the term of 20 years from the 1st day of August 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 01/09/2020  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनकर रखा जाता है, 1st day of August 2014 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 1st day of August 2014 and on the same day in every year thereafter.



## SAC

133

**A Novel Method for Sequential Information Condensation using Fourier Basis**

346206

The present invention provides an efficient FFT based hyper-spectral image compression method to store multiple acquisitions over same region of interest and thereby, improve SNR of hyper-spectral images which usually have coarse spatial resolution. The present invention meets the computational complexity and time bound of a typical hyper-spectral payload. Also, this method of improving SNR exploits proper utilization of storage space and transmission rate. The present invention accommodates all the spectral bands of HSI in a compact representation space, namely VCS to assimilate variations present along the spectral dimension. This VCS representation allows one to analyze per-pixel purity of spectral signatures and offers the provision of an additional quality assessment band with minimal cost.





**INTELLECTUAL  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044122601  
SL No :



पेटेंट सं. / Patent No.	:	346206
आवेदन सं. / Application No.	:	202041004166
फाइल करने की तारीख / Date of Filing	:	30/01/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Tapan Misra 2.Litu Rout

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में बचाप्रकटित A METHOD FOR SEQUENTIAL INFORMATION CONDENSATION USING FOURIER BASIS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 30th day of January 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD FOR SEQUENTIAL INFORMATION CONDENSATION USING FOURIER BASIS as disclosed in the above mentioned application for the term of 20 years from the 30th day of January 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 07/09/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 30th day of January 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 30th day of January 2022 and on the same day in every year thereafter.





## SAC

134

**A Planar Microstripline Based Compact Ultra Broadband Power Divider/Combiner**

346574

A circuit for ultra wide broadband (UWB) power divider including a compact planar structure on micro strip line having an input port and a plurality of output ports, comprising: a plurality of micro strip line segments in folded form cascaded between the input port and the plurality of output ports to achieve an ultra wide broadband response; and a plurality of isolation resistors disposed on resistor pads adjacent to each of the plurality of micro strip line segments for providing isolation, wherein each of the plurality of micro strip line segments terminates over the resistor pads in such a way which creates a lower number of discontinuities in the circuit, wherein each of the plurality of micro strip line segments is configured to have predetermined unique width and predetermined unique length to achieve the ultra wide broadband response.



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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044122766  
SL No :



पेटेंट सं. / Patent No.	:	346574
आवेदन सं. / Application No.	:	3092/CHE/2011
फाइल करने की तारीख / Date of Filing	:	08/09/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.PANKAJ BHAVSAR 2.CHEEMALAMARI VENKAT NARASIMHA RAO 3.PUNAM PRADEEP KUMAR 4.RAJKUMAR ARORA

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PLANAR MICROSTRIPLINE BASED COMPACT ULTRA BROADBAND POWER DIVIDER / COMBINER नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 8th day of September 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PLANAR MICROSTRIPLINE BASED COMPACT ULTRA BROADBAND POWER DIVIDER / COMBINER as disclosed in the above mentioned application for the term of 20 years from the 8th day of September 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 11/09/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 8th day of September 2013 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देर होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of September 2013 and on the same day in every year thereafter.



## VSSC

135

**A Process for Cork-Phenolic Resin Composite sheets with controlled Physical, Mechanical, Thermal and Ablative properties**

347223

The present invention relates to a process for preparing cork-resin composite sheets, in particular cork-resin ablative material, and a method of producing the material with desired physical, mechanical, thermal and ablative properties. The present invention also relates to the procedure for processing cork composites with high temperature resistant laminates and application of cork-resin ablative material as acoustic insulation material and for other applications.





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सत्यमेव जयते

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**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044122977  
SL No :



पेटेंट सं. / Patent No.	:	347223
आवेदन सं. / Application No.	:	201741047188
फाइल करने की तारीख / Date of Filing	:	29/12/2017
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Jerry Calvin J 2.SK Manu 3.M Radhakrishnan Nair 4.G Chandrasekharan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR CORK-PHENOLIC RESIN COMPOSITE SHEETS WITH CONTROLLED PHYSICAL, MECHANICAL, THERMAL AND ABLATIVE PROPERTIES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 29th day of December 2017 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR CORK-PHENOLIC RESIN COMPOSITE SHEETS WITH CONTROLLED PHYSICAL, MECHANICAL, THERMAL AND ABLATIVE PROPERTIES as disclosed in the above mentioned application for the term of 20 years from the 29th day of December 2017 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 21/09/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 29th day of December 2019 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 29th day of December 2019 and on the same day in every year thereafter.





## URSC

136

**Process of Cable Network and Mesh Fabrication and Assembly for use in Large Deployable Antenna**

351087

This invention relates to a method for fabricating a cable network assembly having top and bottom cable nets suitable for large deployable antennas comprising the steps of:

- a) preparing a plurality of in-plane cords having bonded first and second end-terminals and marking node points on each in-plane cord;
- b) fabricating plurality of separate nodes for top and bottom cable nets by placing the node points marked on the in-plane cords on a suitable fixture and interweaving the in-plane cords onto a nodal disc using low thermal expansion lubricant coated RF transparent fibers.



क्रमांक : 044124364  
SL No :



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पेटेंट सं. / Patent No.	:	351087
आवेदन सं. / Application No.	:	1065/CHE/2012
फाइल करने की तारीख / Date of Filing	:	22/03/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANIZATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.TALAKAD PARTHSARATHY IYENGAR MURALI 2.MILIND UNDALE 3.NARASIMHAIAH VISWANATHA

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में सहायक त्रि-PROCESS OF CABLE NETWORK AND MESH FABRICATION AND ASSEMBLY FOR USE IN LARGE DEPLOYABLE ANTENNA नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 22nd day of March 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS OF CABLE NETWORK AND MESH FABRICATION AND ASSEMBLY FOR USE IN LARGE DEPLOYABLE ANTENNA as disclosed in the above mentioned application for the term of 20 years from the 22nd day of March 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 06/11/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 22nd day of March 2014 को और उसके परवर्ती प्रत्येक वर्ष में उन्ही दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22nd day of March 2014 and on the same day in every year thereafter.



## SAC

137 | Broadband Waveguide Junction

352073 |

A waveguide type broadband high performance junction is described. It utilizes only a single metallic projection to achieve broadband performance and completely eliminates steps, transitions, or any other type of impedance matching elements in equal junction configuration. The unique single metallic projection ensures a broadband performance of parameters of interest to those skilled in the art through a 55 percent bandwidth without the need of any extraneous impedance matching element. The restriction of employing reduced height waveguides to achieve a broadband performance is also circumvented through the invention.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044124750  
SL No :



पेटेंट सं. / Patent No.	:	352073
आवेदन सं. / Application No.	:	3436/CHE/2012
फाइल करने की तारीख / Date of Filing	:	21/08/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.JIGAR PANDYA 2.JIDESH. S. NAIR 3.KHAGINDRA KUMAR SOOD 4.RAJEEV JYOTI

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित BROADBAND WAVEGUIDE JUNCTION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 21st day of August 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled BROADBAND WAVEGUIDE JUNCTION as disclosed in the above mentioned application for the term of 20 years from the 21st day of August 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 24/11/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 21st day of August 2014 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note: - The fee for renewal of this patent, if it is to be maintained will fall / has fallen due on 21st day of August 2014 and on the same day in every year thereafter.





## VSSC


138

**A solvent-less, hydrophobic composition for non-curable, anti-galvanic corrosion coating**


352079

The present invention relates to the field of anti-galvanic corrosion coating composition. Particularly, the present invention relates to a solvent-less, corrosion resistant, non-curable, hydrophobic composition coatings. The present invention also relates to method for preparing the said composition and is highly appropriate in preventing galvanic corrosion of metallic joints and metallic couples. The present invention is also beneficial for precluding atmospheric corrosion of metallic structures.






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PATENT CERTIFICATE  
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क्रमांक : 044124754  
SL No :




पेटेंट सं. / Patent No.	:	352079
आवेदन सं. / Application No.	:	202041006896
फाइल करने की तारीख / Date of Filing	:	18/02/2020
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Santhosh Kumar KS 2.Satheesh Kumar B 3.Temina Mary Robert 4.Bipin Babu 5.Dona Mathew

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A SOLVENT-LESS, HYDROPHOBIC COMPOSITION FOR NON-CURABLE, ANTI-GALVANIC CORROSION COATING नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 18th day of February 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SOLVENT-LESS, HYDROPHOBIC COMPOSITION FOR NON-CURABLE, ANTI-GALVANIC CORROSION COATING as disclosed in the above mentioned application for the term of 20 years from the 18th day of February 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 24/11/2020  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट की नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 18th day of February 2022 को और उसके पचास वर्ष के उसी दिन देय होगी।  
Note.- The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 18th day of February 2022 and on the same day in every year thereafter.



## VSSC

139

**Spherical silica shells with fibrous internal network through hybrid microwave heating**

352169

The present invention relates to spherical silica shells with fibrous internal network. The present invention also relates to a method of producing amorphous spherical silica shells. More particularly the present invention relates to a method of producing amorphous spherical ceramic shells of diameter 500 to 3000  $\mu\text{m}$  of silica by sol-gel process through microwave heating.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044124787  
SL No :



पेटेंट सं. / Patent No.	:	352169
आवेदन सं. / Application No.	:	201841003046
फाइल करने की तारीख / Date of Filing	:	25/01/2018
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.S. Nagapriya 2.M R Ajith 3.H. Sreemoolanadhan 4.Mariamamma Mathew 5.Sharad Chandra Sharma

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR PREPARATION OF SPHERICAL SILICA SHELLS WITH FIBROUS INTERNAL NETWORK नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 25th day of January 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR PREPARATION OF SPHERICAL SILICA SHELLS WITH FIBROUS INTERNAL NETWORK as disclosed in the above mentioned application for the term of 20 years from the 25th day of January 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 25/11/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 25th day of January 2020 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 25th day of January 2020 and on the same day in every year thereafter.



## URSC

140

**Clamping System for Attaching Spacecraft with Matching Interfaces**

354471

This invention is generally related to the clamping of two circular matching interfaces and more specifically to the frequent detachable joint between spacecraft to mechanical ground support equipment (MGSE) adaptor.





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PATENT CERTIFICATE  
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क्रमांक : 044125568  
SL No :



पेटेंट सं. / Patent No. : 354471  
आवेदन सं. / Application No. : 202041002539  
फाइल करने की तारीख / Date of Filing : 21/01/2020  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.Sukhendu Sekhar Manna 2.Surendran N.

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित CLAMPING SYSTEM FOR ATTACHING SPACECRAFT WITH MATCHING INTERFACE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 21st day of January 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled CLAMPING SYSTEM FOR ATTACHING SPACECRAFT WITH MATCHING INTERFACE as disclosed in the above mentioned application for the term of 20 years from the 21st day of January 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 24/12/2020  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 21st day of January 2022 को और उसके पचास प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21st day of January 2022 and on the same day in every year thereafter.





## SAC

141

**Method for Generating Modulation Signals for a Satellite Navigation System**

355353

The present invention discloses a method of generating a spreading Synthesized Binary Offset Carrier (SBOC) modulated signal. The method comprising: generating first and second signal using first and second signal generators, modulating first or second generated signals with signal generated from at least a subcarrier generators. Further, synthesizing modulated data signals, wherein said synthesis is based on the modulated signal generated by a connection between the at least one subcarrier generator with the first signal generator or the second signal generator. Furthermore, aggregating said synthesized modulated data signals using a unit to generate SBOC modulated signal.



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**GOVERNMENT OF INDIA**  
**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044125860  
SL No :



पेटेंट सं. / Patent No.	:	355353
आवेदन सं. / Application No.	:	202041022558
फाइल करने की तारीख / Date of Filing	:	29/05/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Upadhyay Dhaval Jitendrabhai 2.Parimal Jayantilal Majithiya 3.Vijay Singh Bhadouria 4.Subhash Chandra Bera

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD FOR GENERATING MODULATION SIGNALS FOR A SATELLITE NAVIGATION SYSTEM नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 29th day of May 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुवत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD FOR GENERATING MODULATION SIGNALS FOR A SATELLITE NAVIGATION SYSTEM as disclosed in the above mentioned application for the term of 20 years from the 29th day of May 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 06/01/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 29th day of May 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगा।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 29th day of May 2022 and on the same day in every year thereafter.



## IISU

142

**In-Situ Monitoring of Plasma Polishing Process by Using Optical Emission Spectrometer**

356489

This invention relates to the process for plasma polishing of fused silica optics with any kind of shape i.e complex or flat. Controlled material removal rate during plasma polishing is very essential for achieving expected surface integrity. Optical emission spectroscopy is used for monitoring and controlling the plasma during polishing by calculating the volumetric material removal rate by detecting the linear correlation between the intensity ratios of said silica substrate with the material removal rate at different time periods of operation; It is a kind of non- invasive spectroscopic method for the real time monitoring during plasma polishing.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044126247  
SL No :



पेटेंट सं. / Patent No.	:	356489
आवेदन सं. / Application No.	:	202041007062
फाइल करने की तारीख / Date of Filing	:	19/02/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Enni Krishna 2.Sreelakshmy Kombath 3.Sam Dayala Dev Devanesan 4.Manas Das

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित IN-SITU MONITORING OF PLASMA POLISHING PROCESS BY USING OPTICAL EMISSION SPECTROMETER नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 19th day of February 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled IN-SITU MONITORING OF PLASMA POLISHING PROCESS BY USING OPTICAL EMISSION SPECTROMETER as disclosed in the above mentioned application for the term of 20 years from the 19th day of February 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 22/01/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 19th day of February 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 19th day of February 2022 and on the same day in every year thereafter.



## LPSC

143

**Pressurization Initiation Valve with Telescopic Actuator Bellow for GH2 Applications**

357575

A bellow valve actuator installed in a valve assembly having a cylindrical main body which extends and communicates with an inlet and outlet portion in said main body, comprising a guide movably arranged and aligned in the central cylindrical axis of the main body, a plurality of bellow segments arranged telescopically in series and being sealingly supported onto said movable guide, a connecting means disposed within said bellow segments for interconnecting the ends of said telescopically arranged bellow segments for sequential movement of bellows, and a plurality of restraining elements disposed exterior to said bellow segments for limiting the expansion and compression of the said plurality of bellow segments.





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GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

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GOVERNMENT OF INDIA  
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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044126683  
SL No :



पेटेंट सं. / Patent No. : 357575  
आवेदन सं. / Application No. : 3742/CHE/2012  
फाइल करने की तारीख / Date of Filing : 10/09/2012  
पेटेंटी / Patentee : INDIAN SPACE RESEARCH ORGANISATION  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1.SUNIL S. 2.M. RADHAKRISHNAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PRESSURIZATION INITIATION VALVE WITH TELESCOPIC ACTUATOR BELLOW FOR GH2 APPLICATIONS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 10th day of September 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PRESSURIZATION INITIATION VALVE WITH TELESCOPIC ACTUATOR BELLOW FOR GH2 APPLICATIONS as disclosed in the above mentioned application for the term of 20 years from the 10th day of September 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 02/02/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 10th day of September 2014 को और उसके पश्चात प्रत्येक वर्ष ने उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 10th day of September 2014 and on the same day in every year thereafter.





## LPSC


144

A Telescopic Chatter Free Poppet Check Valve Assembly


357705

This invention relates to a chatter free poppet check valve assembly which is configured to allow passing a fluid in one direction is provided. The chatter free poppet check valve assembly includes a housing which includes an inlet, an outlet, and one or more poppets which are positioned in between the inlet and the outlet of the housing. The one or more poppets include a first poppet and a second poppet and the first poppet is telescopically disposed within the second poppet. The first poppet sliding inside the second poppet during open condition of the chatter free poppet check valve assembly and the first poppet moves away from the second poppet during close condition of the chatter free poppet check valve assembly.






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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044126731  
SL No :




पेटेंट सं. / Patent No.	:	357705
आवेदन सं. / Application No.	:	3744/CHE/2012
फाइल करने की तारीख / Date of Filing	:	10/09/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
अविष्कारक (जहां लागू हो) / Inventor(s)	:	1.RAJI GEORGE 2.A. MANIMARAN 3.C. AMARASEKARAN


प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित "A TELESCOPIC CHATTER FREE POPPET CHECK VALVE ASSEMBLY" नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 10th day of September 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुवत किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled "A TELESCOPIC CHATTER FREE POPPET CHECK VALVE ASSEMBLY" as disclosed in the above mentioned application for the term of 20 years from the 10th day of September 2012 in accordance with the provisions of the Patents Act, 1970.

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अनुदान की तारीख : 03/02/2021  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 10th day of September 2014 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 10th day of September 2014 and on the same day in every year thereafter.



## VSSC

145

**A Traveling Rotary Station Setting Tool for Jigs of Aircraft Like Structures**

358031

The invention relates to a precision rotary traveling rotary station setting tool for precision jig setting and inspection of jigs, such as aircraft structures, or the like. It consists of a setting media and a removable arm attached to the setting media. A digital read out is connected to the setting media. Tooling holes are precisely drilled in the setting media. A pair of precision angular contact bearings mounts in the bearing housing. A support frame holds the bearing housing and linear motion guide blocks hold the support frame. A pair of precision linear motion guide ways are provided on which the linear motion guide blocks are guided.





क्रमांक : 044126868  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No. : 358031  
आवेदन सं. / Application No. : 4977/CHE/2013  
फाइल करने की तारीख / Date of Filing : 04/11/2013  
पेटेंटी / Patentee : INDIAN SPACE RESEARCH ORGANISATION  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1.VIMAL THOMAS 2.JACOB PHILIP 3.DILEEP CHANDRAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A TRAVELLING ROTARY STATION SETTING TOOL FOR JIGS OF AIRCRAFT LIKE STRUCTURES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 4th day of November 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A TRAVELLING ROTARY STATION SETTING TOOL FOR JIGS OF AIRCRAFT LIKE STRUCTURES as disclosed in the above mentioned application for the term of 20 years from the 4th day of November 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 06/02/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 4th day of November 2015 को और उसके पचास प्रत्येक वर्ष में उन्नी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 4th day of November 2015 and on the same day in every year thereafter.



## VSSC

146


**A single coat rubber modified phenolic adhesive for dissimilar substrates**

359262


This invention relates to an adhesive composition for bonding metal surfaces to elastomeric substrates. More particularly, the composition comprising a modified alkylated phenolic resin in combination with a halogenated elastomer and fillers for bonding elastomer to metals, composites, leather, canvas and the like. The present invention also relates to the method of manufacturing adhesive composition.








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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044127268  
SL No :




पेटेंट सं. / Patent No.	:	359262
आवेदन सं. / Application No.	:	201841023574
फाइल करने की तारीख / Date of Filing	:	25/06/2018
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Temina Mary Robert 2.Sunitha K 3.Satheesh Kumar B 4.Bipin Babu 5.Dona Mathew 6.CP Reghunadhan Nair

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A SINGLE COAT RUBBER MODIFIED PHENOLIC ADHESIVE FOR DISSIMILAR SUBSTRATES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 25th day of June 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SINGLE COAT RUBBER MODIFIED PHENOLIC ADHESIVE FOR DISSIMILAR SUBSTRATES as disclosed in the above mentioned application for the term of 20 years from the 25th day of June 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 24/02/2021  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 25th day of June 2020 को और उसके पश्चात प्रत्येक वर्ष से उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 25th day of June 2020 and on the same day in every year thereafter.





## SAC

147

**Adaptable and Flexible Temperature Compensation Mechanism for Rf/Microwave Resonator Cavity**

360008

The present invention relates to an adaptable temperature compensating apparatus for a RF/microwave cavity structure. The compensating apparatus is attached to end wall of the cavity structure. The compensating apparatus includes a flexible diaphragm joined with a compensating means. The compensating means includes one or more ring/disc member. The one or more ring/disc members are in the form of different shapes such as elliptical, concentric or spiral. The ring/Disc members are made of either similar or dissimilar material as of the flexible diaphragm. The compensating apparatus compensates a volume change induced due to temperature change and subsequent frequency variations in the RF/microwave cavity structure.



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PATENTS | DESIGNS | TRADE MARKS  
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**भारत सरकार**  
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**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044127520  
SL No :



पेटेंट सं. / Patent No.	:	360008
आवेदन सं. / Application No.	:	3386/CHE/2015
फाइल करने की तारीख / Date of Filing	:	02/07/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.A.R. Srinivas 2.Rahul Dev 3.Hemant Arora 4.Piyush Shukla 5.V.D. Parekh 6.Dr. B.S. Munjal 7.P.J. Soni

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित ADAPTABLE AND FLEXIBLE TEMPERATURE COMPENSATION MECHANISM FOR RF/MICROWAVE RESONATOR CAVITY नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 2nd day of July 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ADAPTABLE AND FLEXIBLE TEMPERATURE COMPENSATION MECHANISM FOR RF/MICROWAVE RESONATOR CAVITY as disclosed in the above mentioned application for the term of 20 years from the 2nd day of July 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 02/03/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट को नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 2nd day of July 2017 को और उससे परफेक्ट प्रॉविड वर्क में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 2nd day of July 2017 and on the same day in every year thereafter.



## SAC

148

**Method and Apparatus for Generating Parity Check Matrix Using Quasi-Cyclic LDPC Generator Polynomial for Navigation Signal**

360055

The present invention relates to the field of channel coding. The present invention specifically relates to method and apparatus for generating parity check matrix based on Quasi-Cyclic method for navigation signal.





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**भारत सरकार**  
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**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044127541  
SL No :



पेटेंट सं. / Patent No.	:	360055
आवेदन सं. / Application No.	:	202041022565
फाइल करने की तारीख / Date of Filing	:	29/05/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Deepak Mishra 2.Neeraj Mishra 3.Purushotham Tammali 4.Sanjay D Mehta

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD AND APPARATUS FOR GENERATING PARITY CHECK MATRIX USING QUASI-CYCLIC LDPC GENERATOR POLYNOMIAL FOR NAVIGATION SIGNAL नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 29th day of May 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD AND APPARATUS FOR GENERATING PARITY CHECK MATRIX USING QUASI-CYCLIC LDPC GENERATOR POLYNOMIAL FOR NAVIGATION SIGNAL as disclosed in the above mentioned application for the term of 20 years from the 29th day of May 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 02/03/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 29th day of May 2022 को और उसके पश्चात प्रत्येक वर्ष से उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 29th day of May 2022 and on the same day in every year thereafter.



## VSSC

149

**Process for oxidation resistant silicon carbide coating for carbonaceous hot structures via preceramic route**

361023

The present invention relates to a coating composition for carbon based substrates comprising a silicon carbide forming compound, a sintering aid, a binder, a solvent and glass forming additives. The present invention also relates to a process for forming an oxidation resistance coating from the coating composition. The process comprises applying the coating composition on the carbon-carbon substrates followed by heating at a temperature in the range of 1000 to 1800°C to obtain the oxidation resistance coating composition.





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PATENT CERTIFICATE  
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क्रमांक : 044127891  
SL No :



पेटेंट सं. / Patent No.	:	361023
आवेदन सं. / Application No.	:	201841020187
फाइल करने की तारीख / Date of Filing	:	30/05/2018
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Deepa Devapal 2.MP Gopakumar 3.PV Prabhakaran 4.S Packirisamy 5.Vaniitha K 6.Sreenivas N

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित AN OXIDATION RESISTANCE COATING COMPOSITION AND A METHOD OF PREPARATION THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 30th day of May 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN OXIDATION RESISTANCE COATING COMPOSITION AND A METHOD OF PREPARATION THEREOF as disclosed in the above mentioned application for the term of 20 years from the 30th day of May 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 12/03/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 30th day of May 2020 से और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 30th day of May 2020 and on the same day in every year thereafter.





## VSSC

150 Fiber Milling Equipment

362366

The invention is in the field of fiber milling equipments, and relates to the milling of continuous fibers in to very short length discrete fibers, and more specifically to equipment for the milling of carbon fibers used as reinforcement in the fabrication of carbon/carbon (C/C) composites. The invention solves the interrupted feeding of multiple tows and produces milled fibers of uniform length by achieving close tolerance. The incorporation of the liquid bath, the filament breaker cum sucker unit and the carbide tip at the base of both the stationary blade and moving blade resulted in feeding the multiple tows uninterruptedly and milling the fibers to uniform length.



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क्रमांक : 044128360  
SL No :



पेटेंट सं. / Patent No.	:	362366
आवेदन सं. / Application No.	:	879/CHE/2014
फाइल करने की तारीख / Date of Filing	:	21/02/2014
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.THAKUR SUDESH KUMAR RAUNIJA 2.SANKARANARAYANA BABU 3.VISWANATHAN VISWABASKARAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में बचाप्रकटित FIBER MILLING EQUIPMENT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 21st day of February 2014 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled FIBER MILLING EQUIPMENT as disclosed in the above mentioned application for the term of 20 years from the 21st day of February 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 22/03/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 21st day of February 2016 को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21st day of February 2016 and on the same day in every year thereafter.



## VSSC

151

**Method of Uninterrupted Operation of High-Pressure Water Electrolysis System**

368027

According to the invention, the electrolysis apparatus includes Proton Exchange Membrane [PEM] water electrolyser stack, which generates hydrogen and oxygen gases at high pressure typically 10 bar to 350 bar or more. The apparatus also includes gas-water separator which operates at the same pressure as PEM water electrolyser stack, and separates oxygen from water in the anode fluid circuit and Hydrogen from water in the cathode fluid circuit. Separate pumps are employed to circulate water through water electrolyser stack and gas-water separators. The apparatus includes gravity driven passive water filling system in the anode fluid circuit and gravity driven water removal system in the cathode fluid circuit. The novel arrangement disclosed here ensures continuous operation of the water electrolysis apparatus, is with substantial reduction in complexity of operation & control requirements of the system and reduction in number of elements in fluid circuits. The proposed apparatus will find use in portable oxygen and hydrogen generators. The apparatus will enable autonomous operation of solar-electrolyser-fuel cell hybrid power system, under consideration for remote locations. The electrolyser is having applications in industrial high pressure hydrogen generation systems.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044130479  
SL No :



पेटेंट सं. / Patent No.	:	368027
आवेदन सं. / Application No.	:	201841000273
फाइल करने की तारीख / Date of Filing	:	03/01/2018
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Vinay Mohan Bhardwaj 2.Shaneeth M 3.Surajeet Mohanty 4.Samarat Deb Choudhury 5.Nandikesan P

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में वयाप्रकटित "METHOD OF UNINTERRUPTED OPERATION OF HIGH-PRESSURE WATER ELECTROLYSIS SYSTEM" नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 3rd day of January 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled "METHOD OF UNINTERRUPTED OPERATION OF HIGH-PRESSURE WATER ELECTROLYSIS SYSTEM" as disclosed in the above mentioned application for the term of 20 years from the 3rd day of January 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 31/05/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 3rd day of January 2020 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note: - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 3rd day of January 2020 and on the same day in every year thereafter.



## VSSC

152


**Carbon-silicon carbide composites and a method for their manufacture**

369606


The present application relates to the field of carbon/silicon carbide (C/SiC) composites. In particular, the present application relates to C/SiC composites with tailorable density, high electrical conductivity, high strength and high machinability, and a method for their manufacture. The C/SiC composites of the present invention may be applied for fabrication of unipolar plates (UP) and bipolar plates (BP) which find application in high performance proton exchange membrane fuel cells (PEMFC) used in automobiles, and spacecrafts.








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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044131069  
SL No :



पेटेंट सं. / Patent No.	:	369606
आवेदन सं. / Application No.	:	3574/CHE/2015
फाइल करने की तारीख / Date of Filing	:	13/07/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Thakur Sudesh Kumar Raunija 2.Sankaranarayana Babu 3.Sharad Chandra Sharma


प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित CARBON-SILICON CARBIDE COMPOSITES AND A METHOD FOR THEIR MANUFACTURE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 13th day of July 2015 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled CARBON-SILICON CARBIDE COMPOSITES AND A METHOD FOR THEIR MANUFACTURE as disclosed in the above mentioned application for the term of 20 years from the 13th day of July 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 18/06/2021  
Date of Grant :

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पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 13th day of July 2017 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 13th day of July 2017 and on the same day in every year thereafter.





## VSSC

153

**A novel process technology for achieving zero effluent in manufacturing of Ammonium Perchlorate**

370746

The invention relates to a zero effluent process for recovery of Ammonium Perchlorate. More particularly, the present invention relates to a method for removal or destruction of perchlorates from the effluent and more specifically to the treatment of effluent containing high concentration of sodium chloride and low concentration of Ammonium Perchlorate (AP) so that AP is completely recycled by converting other entity present in the effluent to ammonium chloride and sodium bicarbonate.



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**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044131471  
SL No :



पेटेंट सं. / Patent No.	:	370746
आवेदन सं. / Application No.	:	201841020160
फाइल करने की तारीख / Date of Filing	:	30/05/2018
पेटेदी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Rama Chandra Rao Adduru 2.Sangeeta Sivanath 3.Hemalatha Gopalakrishnan 4.Ajith Prasad Ananthanaraayanapuram Ramakrishna Pillai 5.Raghu Ravindran 6.Jojo Mathew 7.Jayachandran Thankappan

प्रमाणित किया जाता है कि पेटेदी को उपरोक्त आवेदन में यथाप्रकटित A NOVAL PROCESS TECHNOLOGY FOR ACHIEVING ZERO EFFLUENT IN MANUFACTURING OF AMMONIUM PERCHLORATE नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 30th day of May 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A NOVAL PROCESS TECHNOLOGY FOR ACHIEVING ZERO EFFLUENT IN MANUFACTURING OF AMMONIUM PERCHLORATE as disclosed in the above mentioned application for the term of 20 years from the 30th day of May 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 30/06/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 30th day of May 2020 को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 30th day of May 2020 and on the same day in every year thereafter.



## LPSC

154

Expulsion Enhancing device for propellant tank (XED)

371127

The present invention relates to a liquid-propellant management system and more particularly relates to a propellant expulsion device for complete expulsion of propellant from a propellant tank.





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PATENT CERTIFICATE  
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क्रमांक : 044131586  
SL No :



पेटेंट सं. / Patent No.	:	371127
आवेदन सं. / Application No.	:	202041053147
फाइल करने की तारीख / Date of Filing	:	07/12/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
अविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Sourabh Karmarkar 2.V. Nandakumar 3.V. Samuel David

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथावर्कत EXPULSION ENHANCING DEVICE FOR PROPELLANT TANK नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 7th day of December 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled EXPULSION ENHANCING DEVICE FOR PROPELLANT TANK as disclosed in the above mentioned application for the term of 20 years from the 7th day of December 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 05/07/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 7th day of December 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7th day of December 2022 and on the same day in every year thereafter.



## HQ/IISc

155

Generation of Ionospheric Profiles

371139

The subject matter described herein relates to a method of generating ionospheric profiles. Observational data for one or more ground stations selected for profile analysis is received. Based on the observational data vertical total electron content (VTEC) data is computed. Further, an individual ionospheric profile for each of the ground stations selected for the profile analysis is generated. Individual ionospheric profiles are generated by interpolating, using a nonlinear curve fitting technique, the VTEC data. Additionally, based on the individual ionospheric profiles, an integrated ionospheric profile on a real-time basis is generated. The integrated ionospheric profile is indicative of a VTEC of a region of the ionosphere over an integrated service range of the ground stations within a latitude coverage of about 7°N to 34°N°.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044131591  
SL No :



पेटेंट सं. / Patent No.	:	371139
आवेदन सं. / Application No.	:	2229/CHE/2010
फाइल करने की तारीख / Date of Filing	:	04/08/2010
पेटेंटी / Patentee	:	DEPARTMENT OF SPACE, INDIAN SPACE RESEARCH ORGANISATION

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित GENERATION OF IONOSPHERIC PROFILES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 4th day of August 2010 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled GENERATION OF IONOSPHERIC PROFILES as disclosed in the above mentioned application for the term of 20 years from the 4th day of August 2010 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 05/07/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 4th day of August 2012 को और उसके क़ायम प्रवेश वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 4th day of August 2012 and on the same day in every year thereafter.





## VSSC


156

**A Syntactic Foam Composition and a Method of Preparation Thereof**


371608

This invention relates to a syntactic foam composition and a method of preparation thereof. The syntactic foam composition comprises: (i) a thermosetting resin in an amount in the range of 20 vol% to 90 vol% based on the total volume of the syntactic foam composition; (ii) a filler in the form of hollow microspheres, wherein the filler comprises at least one of an inorganic filler and an organic filler in the range of 0 to 50 vol% based on the total volume of the syntactic foam composition; and (iii) reinforced fibers in an amount of 10 vol% to 50 vol% based on the total volume of the syntactic foam composition. The syntactic foam composition has a thermal conductivity in the range of 0.08 W/m K to 0.5 W/m K, compressive strength in the range of 25 MPa to 155 MPa and compression modulus in the range of 0.5 GPa to 9 GPa.






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PATENT CERTIFICATE  
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क्रमांक : 044131778  
SL No :




पेटेंट सं. / Patent No.	:	371608
आवेदन सं. / Application No.	:	201841042562
फाइल करने की तारीख / Date of Filing	:	13/11/2018
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Satheesh chandran Maniyeri 2.Kayyurkarathi Sunitha 3.Bipin Babu 4.Santhosh Kumar Kalamblayil Shankaranarayanan 5.Dona Mathew

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A SYNTACTIC FOAM COMPOSITION AND A METHOD OF PREPARATION THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 13th day of November 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SYNTACTIC FOAM COMPOSITION AND A METHOD OF PREPARATION THEREOF as disclosed in the above mentioned application for the term of 20 years from the 13th day of November 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 09/07/2021  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बचकर रखा जाता है, 13th day of November 2020 को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 13th day of November 2020 and on the same day in every year thereafter.



## VSSC

157

Retention devices for floating D-sub miniature right angle connectors

371719

A connector screw lock device having a connector, at least one clamp and it is comprising of a hole over a flat surface, a member attached perpendicularly at a side of said flat surface, said member is aligned along with an edge of said connector, atleast a pair of ribs mounted over said flat surface, said ribs are disposed parallel to each other over said flat surface. Wherein said hole received a shank of a screw lock and said pair of ribs hold the sides of a hexagonal body of said screw lock to restrict the rotation of said screw lock. The device is floating D-sub miniature right angle connector. The device ribs are disposed along the diameter of the said hole. The device screw lock is a female screw lock, connector is mounted over a 'L' shaped bracket and bracket mounted on PCB.





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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044131824  
SL No :



पेटेंट सं. / Patent No.	:	371719
आवेदन सं. / Application No.	:	201641001930
फाइल करने की तारीख / Date of Filing	:	19/01/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Shri Krishnadas B 2.Shri Madhu VP

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित "RETENTION DEVICES FOR FLOATING D-SUB MINIATURE RIGHT ANGLE CONNECTORS" नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 19th day of January 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled "RETENTION DEVICES FOR FLOATING D-SUB MINIATURE RIGHT ANGLE CONNECTORS" as disclosed in the above mentioned application for the term of 20 years from the 19th day of January 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 12/07/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 19th day of January 2018 को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 19th day of January 2018 and on the same day in every year thereafter.



## URSC

158

**Modular Fixtures for Spacecraft Assembly and Integration with their Degrees of Freedom**

373044

The invention relates to a fixture for mounting, assembly, integration and testing of a spacecraft. More particularly, the invention relates to a fixture for mounting, assembly, integration and testing of spacecraft which is modular and is provided with three degree of freedom to perform operations of mounting, assembly, integration and testing on the spacecraft from convenient position on the floor level.





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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044132308  
SL No :



पेटेंट सं. / Patent No.	:	373044
आवेदन सं. / Application No.	:	202041025615
फाइल करने की तारीख / Date of Filing	:	18/06/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Atul Nigotia 2.P Shraavan Kumar 3.Rajasekaran D 4.Mohammed Ali A 5.Sekar A 6.Shanmuga Sundaram N

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित MODULAR FIXTURE FOR SPACECRAFT MOUNTING, ASSEMBLY & INTEGRATION WITH THREE DEGREES OF FREEDOM नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 18th day of June 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled MODULAR FIXTURE FOR SPACECRAFT MOUNTING, ASSEMBLY & INTEGRATION WITH THREE DEGREES OF FREEDOM as disclosed in the above mentioned application for the term of 20 years from the 18th day of June 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 28/07/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 18th day of June 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 18th day of June 2022 and on the same day in every year thereafter.





## VSSC


159

Energy Absorption Cartridge


373231

Disclosed herein is an energy absorption cartridge for capturing and holding moving masses. The energy absorption cartridge comprises a honeycomb core for absorbing the impact of the moving object; an annular core mounted on the honey comb core for capturing the moving object; and a sheet placed horizontally between the annular core and the honeycomb core wherein the sheet is bonding the annular core and the honeycomb core together and enables the honeycomb core and the annular core to crush independently without piercing each other.






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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044132394  
SL No :




पेटेंट सं. / Patent No.	:	373231
आवेदन सं. / Application No.	:	201641011397
फाइल करने की तारीख / Date of Filing	:	31/03/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.G. Sunilkumar 2.Atul Kumar 3.R. Rameshkumar 4.P.S. Sreejith

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित **ENERGY ABSORPTION CARTRIDGE** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 31st day of March 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **ENERGY ABSORPTION CARTRIDGE** as disclosed in the above mentioned application for the term of 20 years from the 31st day of March 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 29/07/2021  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 31st day of March 2018 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देना होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 31st day of March 2018 and on the same day in every year thereafter.



## VSSC

160

**Fast burning composite solid propellants with low catalytic residue**

375625

The present invention pertains to a solid propellant composition. Specifically, the present invention pertains to a solid propellant composition comprising a catalyst grafted onto back bone of the polymeric binder through sulfur bridges, for application in space missions or missiles, having high burn rate and low catalytic residue.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044133293  
SL No :



पेटेंट सं. / Patent No.	:	375625
आवेदन सं. / Application No.	:	201941034000
फाइल करने की तारीख / Date of Filing	:	23/08/2019
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.S Reshmi 2.C Srinivas 3.P Sriram

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यद्यप्यकटित A SOLID PROPELLANT COMPOSITION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 23rd day of August 2019 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SOLID PROPELLANT COMPOSITION as disclosed in the above mentioned application for the term of 20 years from the 23rd day of August 2019 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 27/08/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 23rd day of August 2021 को और उसके पचास प्रत्येक वर्ष में उसी दिन देव होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 23rd day of August 2021 and on the same day in every year thereafter.



## SAC

161


A novel BCH generation polynomial for navigation signal

376683


The present disclosure relates to cyclic code encoding technologie, in particular to Bose-Chadhuri-Hocquenghem (BCH) encoder for generating a BCH signal such as a BCH code generator polynomial for navigation signal.








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PATENT CERTIFICATE  
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क्रमांक : 044133692  
SL No :



पेटेंट सं. / Patent No.	:	376683
आवेदन सं. / Application No.	:	202141001342
फाइल करने की तारीख / Date of Filing	:	12/01/2021
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Deepak Mishra 2.Neeraj Mishra 3.Sanjay D Mehta


प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित BOSE-CHADHURI-HOCQUENGHEM (BCH) POLYNOMIAL AND METHOD FOR GENERATING A BCH ENCODED SIGNAL FOR HIGH PERFORMANCE NAVIGATION SIGNAL नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 12th day of January 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled BOSE-CHADHURI-HOCQUENGHEM (BCH) POLYNOMIAL AND METHOD FOR GENERATING A BCH ENCODED SIGNAL FOR HIGH PERFORMANCE NAVIGATION SIGNAL as disclosed in the above mentioned application for the term of 20 years from the 12th day of January 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 08/09/2021  
Date of Grant :

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पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 12th day of January 2023 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 12th day of January 2023 and on the same day in every year thereafter.





## VSSC

162

A process for Synthesis of Hydrophobic Silica Aerogel

377053

The present invention relates to a process for synthesising hydrophobic silica aerogels. Specifically, the present invention pertains to a process for synthesising hydrophobic silica aerogel, where the spent solvent can be recycled and reused, thereby making the process 5 economical and environmental friendly.



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**भारत सरकार  
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PATENT CERTIFICATE  
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क्रमांक : 044133819  
SL No :



पेटेंट सं. / Patent No. : 377053  
आवेदन सं. / Application No. : 201941034410  
फाइल करने की तारीख / Date of Filing : 27/08/2019  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1.S Nagapriya 2.MR Ajith 3.H Sreemoolanadhan  
4.Mariamamma Mathew

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR SYNTHESIS OF HYDROPHOBIC SILICA AEROGEL नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 27th day of August 2019 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR SYNTHESIS OF HYDROPHOBIC SILICA AEROGEL as disclosed in the above mentioned application for the term of 20 years from the 27th day of August 2019 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 18/09/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 27th day of August 2021 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगा।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 27th day of August 2021 and on the same day in every year thereafter.



## URSC

163

**“A Mechanism for Dual Range Mass and Centre of Mass Measurement”**

377624

The invention relates to a mechanism for measuring certain mass properties of a specimen in at least two ranges in a single setup. Two sets of load cells each with different gross capacities are capable of being selectively engaged and disengaged to effect measurement of the mass and Centre of Mass of the specimen in the required range. The arrangement disclosed gives the choice of at least two ranges for the machine and it is selectable to measure using any one of the ranges at a given point of time while the other range is isolated from the measurement. The arrangement enables disengagement of both sets of load cells under OFF condition. The mechanism is configured such that it does not interfere with functions and operations of other measurement modules of the machine.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044134044  
SL No :



पेटेंट सं. / Patent No.	:	377624
आवेदन सं. / Application No.	:	2543/CHE/2013
फाइल करने की तारीख / Date of Filing	:	11/06/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANIZATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.A SEKAR 2.D N SIDDHARTHA JAIN 3.P SHRAVAN KUMAR 4.D RAJASEKARAN

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A MECHANISM FOR DUAL RANGE MASS AND CENTRE OF MASS MEASUREMENT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 11th day of June 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A MECHANISM FOR DUAL RANGE MASS AND CENTRE OF MASS MEASUREMENT as disclosed in the above mentioned application for the term of 20 years from the 11th day of June 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 23/09/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 11th day of June 2015 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 11th day of June 2015 and on the same day in every year thereafter.



## VSSC

164

**Mems Based Sensor For Measuring Acoustic Pressure**

378187

The disclosure relates to a MEMS based acoustic sensor for high precision acoustic measurements comprising of a silicon wafer incorporating a silicon diaphragm with a closed cavity under the diaphragm. A Pyrex glass is preferably bonded to the silicon wafer. A vent canal is formed to allow the movement of air in and out of the cavity. Two metal electrodes sandwich a ZnO layer at the top of the assembly. The electrodes form a central capacitor and a rim capacitor. The assembly is followed by a charge to voltage converter and a voltage amplifier. The invention is useful in high precision acoustic measurements of launch vehicles, aircrafts and structural test facilities.





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GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

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**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044134280  
SL No :



पेटेंट सं. / Patent No.	:	378187
आवेदन सं. / Application No.	:	5740/CHE/2013
फाइल करने की तारीख / Date of Filing	:	12/12/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.SABOOJ RAY 2.CHITTAYIL RAMESAN LEKHA 3.SHEENA ABRAHAM 4.SUDARSHAN MADHAV HARDAS

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकरित MEMS BASED SENSOR FOR MEASURING ACOUSTIC PRESSURE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 12th day of December 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled MEMS BASED SENSOR FOR MEASURING ACOUSTIC PRESSURE as disclosed in the above mentioned application for the term of 20 years from the 12th day of December 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 29/09/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 12th day of December 2015 को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fee for renewal of this patent, if it is to be maintained will fall / has fallen due on 12th day of December 2015 and on the same day in every year thereafter.





## VSSC


165

**Method for manufacturing of hermetically sealed higher capacity high performance lithium ion cells**


378259

The present application relates to hermetically sealed lithium ion cells for various applications including space, and a method for their manufacture. In particular, the present invention provides hermetically sealed lithium ion cells of higher capacity (40- 100Ah) with very high capacity retention capability. It also provides higher capacity lithium ion cells with low internal resistance ( $<2 \text{ m}\Omega$ ). The cell manufactured by the method can be employed for mission critical applications viz. powering satellites, launch vehicles, aircrafts, military vehicles, submarines and electric vehicles.






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पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044134317  
SL No :




पेटेंट सं. / Patent No.	:	378259
आवेदन सं. / Application No.	:	201841010148
फाइल करने की तारीख / Date of Filing	:	20/03/2018
पेटेटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Mercy TD 2.S Aravamuthan 3.Kamalakaran KP 4.VF Kaladharan 5.Bibin John

प्रमाणित किया जाता है कि पेटेटी को उपरोक्त आवेदन में यथाप्रकटित HERMETICALLY SEALED LITHIUM ION CELLS AND A METHOD FOR THEIR MANUFACTURE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 20th day of March 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled HERMETICALLY SEALED LITHIUM ION CELLS AND A METHOD FOR THEIR MANUFACTURE as disclosed in the above mentioned application for the term of 20 years from the 20th day of March 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 29/09/2021  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखे जाना है, 20th day of March 2020 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 20th day of March 2020 and on the same day in every year thereafter.



## SAC

166

**Tri-band Compact Circularly Polarized Coaxial Horn feed for deep dish prime focus reflector antenna systems**

378494

The embodiments herein generally relate to the field of an antenna feed systems. More specifically, the embodiments described herein relate to a compact multiband circularly polarized coaxial horn feed for prime focus reflector antenna systems. Particularly, the embodiments described herein relate to methods and apparatus for prime focus reflector antenna feed systems that can operate at multiple frequency bands.





**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार  
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पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044134401  
SL No :



पेटेंट सं. / Patent No.	:	378494
आवेदन सं. / Application No.	:	202041056215
फाइल करने की तारीख / Date of Filing	:	24/12/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Rohit Kumar Nandwani 2.Kripa Shankar Singh 3.Sagi Sruvan Kumar 4.Milind Mahajan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A COMPACT MULTIBAND COAXIAL HORN FEED FOR DEEP DISH PRIME FOCUS REFLECTOR ANTENNA SYSTEMS नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 24th day of December 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A COMPACT MULTIBAND COAXIAL HORN FEED FOR DEEP DISH PRIME FOCUS REFLECTOR ANTENNA SYSTEMS as disclosed in the above mentioned application for the term of 20 years from the 24th day of December 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 01/10/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 24th day of December 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24th day of December 2022 and on the same day in every year thereafter.



## SAC

167

Design of Broadband Waveguide Circulator @Ka-Band

378566

The present disclosure relates to a waveguide circulator and, more particularly, to a design of a broadband waveguide circulator having single ferrite or ferrites, soft dielectric cage, metal pedestal with Y-shaped ridge. This dielectric cage obviates the need of ferrite attachment using adhesive and at the same time broaden the frequency response.





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सत्यमेव जयते

**भारत सरकार**  
**GOVERNMENT OF INDIA**  
**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
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**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044134428  
SL No :



पेटेंट सं. / Patent No.	:	378566
आवेदन सं. / Application No.	:	202041044006
फाइल करने की तारीख / Date of Filing	:	09/10/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Sudesh Kumar Jain 2.Purnam Pradeep Kumar

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित DESIGN OF BROADBAND WAVEGUIDE CIRCULATOR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 9th day of October 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled DESIGN OF BROADBAND WAVEGUIDE CIRCULATOR as disclosed in the above mentioned application for the term of 20 years from the 9th day of October 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 04/10/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 9th day of October 2022 को और उसके पश्चात प्रत्येक वर्ष ने उसी दिन देव होगी।  
Note - The fee for renewal of this patent, if it is to be maintained will fall / has fallen due on 9th day of October 2022 and on the same day in every year thereafter.





## VSSC

168

**Test Machine for Evaluating Equip-Biaxial Tensile Properties of a Test Specimen**

378653

The present invention relates to evaluating an equi-biaxial tensile properties, particularly relates to a test machine for evaluating equi-biaxial tensile properties of a test specimen, and more particularly relates to a test specimen that can be a Composite Solid Propellants (CSPs) or allied materials.



**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044134459  
SL No :



पेटेंट सं. / Patent No.	:	378653
आवेदन सं. / Application No.	:	202141007293
फाइल करने की तारीख / Date of Filing	:	22/02/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Bhatt Tushar Shriram 2.Suhas Mukherjee 3.Alexander George 4.SBM Guruvayurappan 5.Nazar A Baker 6.Elizabeth John

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित TEST MACHINE FOR EVALUATING EQUI-BIAXIAL TENSILE PROPERTIES OF A TEST SPECIMEN नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 22nd day of February 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled TEST MACHINE FOR EVALUATING EQUI-BIAXIAL TENSILE PROPERTIES OF A TEST SPECIMEN as disclosed in the above mentioned application for the term of 20 years from the 22nd day of February 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 05/10/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 22nd day of February 2023 को और उसके पर्याप्त प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22nd day of February 2023 and on the same day in every year thereafter.



## VSSC

169

**Lithium Supercapattery with stacked or wound negative and positive electrodes sets along with separator**

379123

The present disclosure relates to a hybrid energy storage device and, more particularly, to a lithium supercapattery with stacked or wound negative and positive electrodes sets along with separator to address the ever-increasing portable energy storage needs.





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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044134627  
SL No :



पेटेंट सं. / Patent No.	:	379123
आवेदन सं. / Application No.	:	202041043817
फाइल करने की तारीख / Date of Filing	:	08/10/2020
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.SA Ilangoan 2.S Sujatha 3.TS Sajitha 4.KS Ajeesh 5.Nixon Jacob 6.Venkateswara Rao Genji

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित LITHIUM SUPERCAPATTERY WITH STACKED OR WOUND NEGATIVE AND POSITIVE ELECTRODES SETS ALONG WITH SEPARATOR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 8th day of October 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled LITHIUM SUPERCAPATTERY WITH STACKED OR WOUND NEGATIVE AND POSITIVE ELECTRODES SETS ALONG WITH SEPARATOR as disclosed in the above mentioned application for the term of 20 years from the 8th day of October 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 11/10/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 8th day of October 2022 को और उसके समतुल्य अवधि में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of October 2022 and on the same day in every year thereafter.



## VSSC

170


**Method of Producing Strong Ductile Joints for 20K Applications**

379534


A process for joining two or more solid state metal blocks of Titanium alloys comprising diffusion technique in which the process is a single pot process.








**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
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सत्यमेव जयते

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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044134792  
SL No :




पेटेंट सं. / Patent No.	:	379534
आवेदन सं. / Application No.	:	2940/CHE/2013
फाइल करने की तारीख / Date of Filing	:	02/07/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.KURNALA NARESH KUMAR 2.PRAVIN MUNESHWAR 3.SATISH KUMAR SINGH 4.BHANU PANT

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD OF PRODUCING STRONG DUCTILE JOINTS FOR 20K APPLICATIONS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 2nd day of July 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF PRODUCING STRONG DUCTILE JOINTS FOR 20K APPLICATIONS as disclosed in the above mentioned application for the term of 20 years from the 2nd day of July 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 21/10/2021  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 2nd day of July 2015 को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 2nd day of July 2015 and on the same day in every year thereafter.





## VSSC

171

**Radiosonde System with User Configurable Altitude and Time Based Shut Down**

379871

A radiosonde system comprising: an on board unit and a ground station wherein said on board unit includes a mainboard module, a sensor PCB module, a transmitting antenna, a battery and a thermal insulation package.



**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

भारत सरकार  
GOVERNMENT OF INDIA  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044134918  
SL No :



पेटेंट सं. / Patent No.	:	379871
आवेदन सं. / Application No.	:	202041040376
फाइल करने की तारीख / Date of Filing	:	17/09/2020
पेटेटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Satyanarayana S 2.Girja J 3.Gopakumar R 4.Femina Beegum S 5.Eden Evans Samuel K 6.Binilroy TS 7.Divya US 8.Arun Alex et al. et al. et al.

प्रमाणित किया जाता है कि पेटेटी को उपरोक्त आवेदन में यथाव्यक्तित्व A RADIOSONDE SYSTEM WITH USER CONFIGURABLE ALTITUDE AND TIME BASED SHUT DOWN नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 17th day of September 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A RADIOSONDE SYSTEM WITH USER CONFIGURABLE ALTITUDE AND TIME BASED SHUT DOWN as disclosed in the above mentioned application for the term of 20 years from the 17th day of September 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 25/10/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 17th day of September 2022 को और उसके पश्चात प्रत्येक वर्ष ने उसी दिन देना होगा।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 17th day of September 2022 and on the same day in every year thereafter.



## VSSC

172

A process for producing Silica Aerogel based composite

381889

A process for producing hydrophobic silica aerogel composite comprising the steps of

- a) producing silica aerogel powders;
- b) preparing a solution of the aerogel powder with polytetrafluoroethylene (PTFE) dispersion, water and alcohol;
- c) filtering the composite solution to obtain aerogel composite cake and filtrate comprising solvents





**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

**भारत सरकार**  
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**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044135691  
SL No :



पेटेंट सं. / Patent No. : 381889  
आवेदन सं. / Application No. : 201941034445  
फाइल करने की तारीख / Date of Filing : 27/08/2019  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.S Nagapriya 2.MR Ajiith 3.Bhanu Pant

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PROCESS FOR PRODUCING HYDROPI(OBIC SILICA AEROGEL COMPOSITE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 27th day of August 2019 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS FOR PRODUCING HYDROPI(OBIC SILICA AEROGEL COMPOSITE as disclosed in the above mentioned application for the term of 20 years from the 27th day of August 2019 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 16/11/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 27th day of August 2021 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 27th day of August 2021 and on the same day in every year thereafter.



## VSSC

173

**A system and method for launching multiple satellites from launch vehicle**

381696

A system and method for launching multiple satellites from a launch vehicle is provided. The system includes a mechanical structure which has one or more mounting means 1, a control unit for controlling the one or more mounting means for positioning and separating the multiple satellites in the mechanical structure, an image capturing system for monitoring the positioning of each satellite in the mechanical structure. The mounting means are adapted to position the satellites in axial, inclined and radial separations at a distance to ensure that each satellite will not come in contact with each other in short duration as well as long duration of orbit evolution. The mounting means is adapted to position one or more satellites. First set of mounting means are arranged in the axial separation and second set of mounting means are arranged in the inclined separation and third set of mounting means are arranged in the radial separation.





**INTELLECTUAL  
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PATENTS | DESIGNS | TRADE MARKS  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044135618  
SL No :



पेटेंट सं. / Patent No.	:	381696
आवेदन सं. / Application No.	:	201841035794
फाइल करने की तारीख / Date of Filing	:	24/09/2018
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.L Sowmianarayanan 2.R Hutton 3.B Jayakumar 4.AK Anilkumar 5.Deepak Negi 6.K Sivan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A SYSTEM AND METHOD FOR LAUNCHING MULTIPLE SATELLITES FROM A LAUNCH VEHICLE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 24th day of September 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SYSTEM AND METHOD FOR LAUNCHING MULTIPLE SATELLITES FROM A LAUNCH VEHICLE as disclosed in the above mentioned application for the term of 20 years from the 24th day of September 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 12/11/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 24th day of September 2020 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24th day of September 2020 and on the same day in every year thereafter.





## VSSC


174

**Flanged Joint Configuration for Metallic Nozzle Convergent to Carbon-Carbon Divergent Nozzle for Solid Motor**


382674

A flange joint assembly for joining flanges of dissimilar materials, the assembly comprising a metal flange (3) provided with a hole of a diameter  $d_1$  near to its outer peripheral edge.






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सत्यमेव जयते

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PATENT CERTIFICATE**  
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क्रमांक : 044136036  
SL No :




पेटेंट सं. / Patent No.	382674
आवेदन सं. / Application No.	202041000978
फाइल करने की तारीख / Date of Filing	09/01/2020
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	1.J Paul Murugan 2.Thomas Kurian 3.R Hanikrishnan 4.Abhishek Kumar 5.Levin G 6.S Mahendran 7.G Krishnakumar

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A FLANGE JOINT ASSEMBLY नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 9th day of January 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A FLANGE JOINT ASSEMBLY as disclosed in the above mentioned application for the term of 20 years from the 9th day of January 2020 in accordance with the provisions of the Patents Act,1970.



अनुदान की तारीख : 25/11/2021  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 9th day of January 2022 को और उसके पचास वर्ष के उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 9th day of January 2022 and on the same day in every year thereafter.



## VSSC

175 Gas powered Mechanical Ventilator

382571

An improved ventilator powered by a compressed gas is disclosed having a respiratory chamber and a control chamber that is axially aligned within a housing separated by a partition wall; and a respiratory piston and a control piston respectively configured therein for reciprocating motion and connected by a common driving stem through the partition wall. Functionality of intake valves and exhaust valves to alternately supply the compressed gas to two sides of the control piston and simultaneously exhausting it from the other side are provided by a pair of valve assemblies located on the control piston along with respective passages. The valve assemblies get actuated on hitting, at an end of linear reciprocating motion, the partition wall of the housing or a sweep adjuster, thereby eliminating any requirement of any active control of the intake and exhaust valves.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044136003  
SL No :



पेटेंट सं. / Patent No.	:	382571
आवेदन सं. / Application No.	:	202141019088
फाइल करने की तारीख / Date of Filing	:	26/04/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.SHETE MAYURESH KAILAS 2.ANI DANIEL KURIEN 3.PRAMOD R NAIR 4.VIKAS 5.MJ ADARSH 6.N VINOD KUMAR 7.BABY ABRAHAM 8.S SOMANATH

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित GAS POWERED MECHANICAL VENTILATOR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 26th day of April 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled GAS POWERED MECHANICAL VENTILATOR as disclosed in the above mentioned application for the term of 20 years from the 26th day of April 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 25/11/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 26th day of April 2023 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगा।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 26th day of April 2023 and on the same day in every year thereafter.



## ISRO HQ/IISc

176

**Method and system for generating spreading codes based on interleaved z4-linear sequences for navigation systems**

383332

A system and method is provided for generating a pseudorandom sequence family suitable for satellite-based navigation systems. The family is derived by suitably interleaving a family of binary z4-linear sequences and is referred to as a family of Interleaved z4-linear (Iz4) spreading codes. The method includes generating a family  $J$  of Interleaved Z4-linear (IZ4) pseudorandom spreading codes having period of the form  $2d(2m - 1)$  with  $d, m$  being integers,  $d \geq 1, m \geq 2$ , and where  $d$  and  $2(2m - 1)$  are relatively prime, without need for either padding or truncation, where the balance of each spreading code in the family  $J$  lies below a preset balance threshold  $\Gamma b$  and where the even-correlation performance measures  $ACRe, CCRe$  of  $J$ , lie below respective even-correlation thresholds  $\Gamma ACRe, \Gamma CCRe$  (in dB). The proposed system and the method do not need either padding or puncturing of bits to achieve the mandated period of 10230. Efficient shift-register techniques can be employed to generate the spreading codes.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044136292  
SL No :



पेटेंट सं. / Patent No.	:	383332
आवेदन सं. / Application No.	:	202041006792
फाइल करने की तारीख / Date of Filing	:	17/02/2020
पेटेंटी / Patentee	:	1.Indian Institute of Science 2.Indian Space Research Organization
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.PANGANAMALA VIJAY KUMAR 2.DILEEP DHARMAPPA 3.SUGANDH MISHRA

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD AND SYSTEM FOR GENERATING SPREADING CODES BASED ON INTERLEAVED Z4-LINEAR SEQUENCES FOR NAVIGATION SYSTEMS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 17th day of February 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD AND SYSTEM FOR GENERATING SPREADING CODES BASED ON INTERLEAVED Z4-LINEAR SEQUENCES FOR NAVIGATION SYSTEMS as disclosed in the above mentioned application for the term of 20 years from the 17th day of February 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 30/11/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 17th day of February 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fee for renewal of this patent, if it is to be maintained will fall / has fallen due on 17th day of February 2022 and on the same day in every year thereafter.





## VSSC

177

**An apparatus for measuring elastic properties of materials and methods thereof**

384366

The Present invention relates to an apparatus and methods for measurement of elastic properties of materials and more specifically to the non-contact measurement of pension ratio and elastic module of traditional and advanced materials such as foams ablatives ceramics glass ceramics composites and others.



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PATENT CERTIFICATE  
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क्रमांक : 044136678  
SL No :



पेटेंट सं. / Patent No.	:	384366
आवेदन सं. / Application No.	:	202141017926
फाइल करने की तारीख / Date of Filing	:	19/04/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Dr. Digendranath Swain 2.Dr. Binu P Thomas 3.Shri. S Karthigai Selvan 4.Shri. SN Suresh 5.Shri. Jeby Philip

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित AN APPARATUS AND METHODS FOR MEASURING ELASTIC PROPERTIES OF MATERIALS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 19th day of April 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN APPARATUS AND METHODS FOR MEASURING ELASTIC PROPERTIES OF MATERIALS as disclosed in the above mentioned application for the term of 20 years from the 19th day of April 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 15/12/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 19th day of April 2023 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 19th day of April 2023 and on the same day in every year thereafter.



## SAC

178 Dielectric resonator based filter using TE mode

384493

A single mode Dielectric Resonator (DR) filter includes one or more resonator cavity and each of the one or more resonator cavity includes an inner hole. The one or more resonator cavity are arranged either in-line or cross-coupled configuration for transmitting an electromagnetic energy from a first resonator cavity which is connected to an input terminal to a last resonator cavity which is connected to an output terminal. The first resonator cavity and the last resonator cavity are non-sequential adjacent cavities. The single mode DR filter exhibits a quality factor (Q) of no less than 6500 when operating at a  $TE_{01}(n\delta)$  mode.





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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044136719  
SL No :



पेटेंट सं. / Patent No.	:	384493
आवेदन सं. / Application No.	:	201741005913
फाइल करने की तारीख / Date of Filing	:	20/02/2017
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Surinder Singh 2.Tushar V Gajjar 3.Vikas Gupta 4.Kasifkhan A Pathan 5.Yauvan H. Dave

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित DIELECTRIC RESONATOR BASED FILTER USING TE01(ND) MODE नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 20th day of February 2017 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled DIELECTRIC RESONATOR BASED FILTER USING TE01(ND) MODE as disclosed in the above mentioned application for the term of 20 years from the 20th day of February 2017 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 16/12/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 20th day of February 2019 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगा।  
Note - The fee for renewal of this patent, if it is to be maintained will fall / has fallen due on 20th day of February 2019 and on the same day in every year thereafter.



## VSSC

179


Nozzle exit closure system separable by electrically initiated pyro system

385942


A nozzle exit closure system for rockets comprising: a circular frame assembly having plurality of spokes configuration; at least eight spoke; a nozzle divergent with a ring a welded thereon; said nozzle divergent ring is connected to said circular frame assembly through a plurality of spring loaded latches.








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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044137230  
SL No :




पेटेंट सं. / Patent No.	:	385942
आवेदन सं. / Application No.	:	201941008085
फाइल करने की तारीख / Date of Filing	:	01/03/2019
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Shiju George Thomas 2.Zaid Ahmad 3.Abraham Varghese 4.Madapattil Premdas 5.Vukkadala Kishorenath

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में बचावप्रकटित NOZZLE EXIT CLOSURE SYSTEM SEPARABLE BY ELECTRICALLY INITIATED PYRO SYSTEM नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 1st day of March 2019 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled NOZZLE EXIT CLOSURE SYSTEM SEPARABLE BY ELECTRICALLY INITIATED PYRO SYSTEM as disclosed in the above mentioned application for the term of 20 years from the 1st day of March 2019 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 04/01/2022  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, 1st day of March 2021 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 1st day of March 2021 and on the same day in every year thereafter.





## IISU


180

**A monolithic metallic flexure proof mass and inductive pickoff based servo acceleration sensing unit**


386430

The present invention relates to a novel acceleration sensing unit with monolithic metallic flexure proof mass assembly and specifically relating to miniaturization and improvement on the flexure –proof mass assembly and inductive pick off.






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PATENT CERTIFICATE  
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क्रमांक : 044137411  
SL No :




पेटेंट सं. / Patent No.	:	386430
आवेदन सं. / Application No.	:	201741022051
फाइल करने की तारीख / Date of Filing	:	23/06/2017
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Joji Joseph Chaman 2.Pradeep Krishnan Nair 3.Rajesh George Poothullil 4.Mary Jermila M 5.Mohanlal Pappu Ponniah

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A MONOLITHIC METALLIC FLEXURE PROOF MASS AND INDUCTIVE PICKOFF BASED SERVO ACCELERATION SENSING UNIT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 23rd day of June 2017, से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A MONOLITHIC METALLIC FLEXURE PROOF MASS AND INDUCTIVE PICKOFF BASED SERVO ACCELERATION SENSING UNIT as disclosed in the above mentioned application for the term of 20 years from the 23rd day of June 2017 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 12/01/2022  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 23rd day of June 2019 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note: - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 23rd day of June 2019 and on the same day in every year thereafter.



## URSC

181

**Splitting of folded beam using resilient spring member in Telescopic arrangement for low frequency vibration isolator**

386506

A telescopic assembly located at one junction on each of eight multiply folded frames connected between a circular plate attached to a reaction wheel and a base structure attached to a satellite deck of a vibration isolation system. The telescopic assembly comprises of: a) a first folded beam attached to the base structure at an insert location at its first end and formed with a slot on its second end; b) a second folded beam attached to the circular plate at an insert location at its first end and formed with a projection on its second end; In the assembly as claimed in claim 1, the multiply folded space frames comprise eight folded space frames that are identical and unsymmetrical. In the assembly as claimed in claim 1, the telescopic assembly is coated with Molybdenum disulfide for frictionless linear motion of the two folded beams along with the linear spring member. In the assembly as claimed in claim 1, the linear spring member comprises of at least three linear springs to match the required stiffness. In the assembly as claimed in claim 1, the linear spring member is formed of stainless steel. In the assembly as claimed in claim 1, the linear spring member is placed in path of transmission of vibratory motion from the reaction wheel in such a way that the linear spring member is self-deflected to attenuate the vibratory motion from its one end to other. In the system as claimed in claim 1, the plurality of folded space frames act as a low pass filter, permitting low frequency attitude control torque, to transmit to the spacecraft while attenuating high frequency disturbances generated by the reaction wheel to the camera structure. In the system as claimed in claim 1, the reaction wheel is vertically interfaced with the circular plate and the base structure is connected to a satellite honeycomb deck with four inserts.





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पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044137440  
SL No :



पेटेंट सं. / Patent No. : 386506  
आवेदन सं. / Application No. : 201841013008  
फाइल करने की तारीख / Date of Filing : 05/04/2018  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.Shashank Srivastava 2.Jayanta Kumar Dutt 3.Kshitij Gupta 4.Manish Trikha

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित SPLITTING OF FOLDED BEAM USING RESILIENT SPRING MEMBER IN TELESCOPIC ARRANGEMENT FOR LOW FREQUENCY VIBRATION ISOLATOR नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 5th day of April 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SPLITTING OF FOLDED BEAM USING RESILIENT SPRING MEMBER IN TELESCOPIC ARRANGEMENT FOR LOW FREQUENCY VIBRATION ISOLATOR as disclosed in the above mentioned application for the term of 20 years from the 5th day of April 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 13/01/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

नियम - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 5th day of April 2020 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 5th day of April 2020 and on the same day in every year thereafter.



## SAC

182

**An Electrical Interconnection Design as Vertical Connection with Printed Circuit Board**

386685

The present invention in general relates to an electrical interconnection pattern on a printed circuit board more particularly the present invention relates to an electrical interconnection design as vertical connection by half cut plated through holes barrel of printed circuit board.





क्रमांक : 044137505  
SL No :



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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	386685
आवेदन सं. / Application No.	:	202141028137
फाइल करने की तारीख / Date of Filing	:	23/06/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Zanish Kumar Ramesh Chandra Patel 2.Rakesh Kumar Rajendra Kumar Shethia 3.Sandip Paul 4.Mohammed Ishak Noor Mohammed Shaikh 5.Maksud Mohammed Habib Karimi 6.Arup Roy Chowdhury 7.Pradeep Soni 8.Ramesh Bijal Bhai Bhatia

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित AN ELECTRICAL INTERCONNECTION DESIGN AS VERTICAL CONNECTION WITH PRINTED CIRCUIT BOARD नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 23rd day of June 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN ELECTRICAL INTERCONNECTION DESIGN AS VERTICAL CONNECTION WITH PRINTED CIRCUIT BOARD as disclosed in the above mentioned application for the term of 20 years from the 23rd day of June 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/01/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 23rd day of June 2023 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 23rd day of June 2023 and on the same day in every year thereafter.





## SAC


183

**A Novel method for strip-map SAR technology with very high resolution like spotlight SAR**


387827

A method for providing a very high-resolution imagery coupled with wide-swath imaging in strip-map mode imaging using a synthetic aperture radar (SAR), capable of improving upon the resolution limit ( $L/2$ , where  $L$  is azimuth aperture of antenna) imposed by strip-map mode of SAR imaging, thereby enabling high resolution imaging in continuous strip map mode.






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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044137933  
SL No :



पेटेंट सं. / Patent No.	:	387827
आवेदन सं. / Application No.	:	202041056697
फाइल करने की तारीख / Date of Filing	:	28/12/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहां लागू हो) / Inventor(s)	:	TAPAN MISRA


प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A NOVEL METHOD OF STRIP-MAP SAR TECHNOLOGY WITH VERY HIGH RESOLUTION LIKE SPOTLIGHT SAR नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 28th day of December 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A NOVEL METHOD OF STRIP-MAP SAR TECHNOLOGY WITH VERY HIGH RESOLUTION LIKE SPOTLIGHT SAR as disclosed in the above mentioned application for the term of 20 years from the 28th day of December 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 28/01/2022  
Date of Grant :

**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 28th day of December 2022 को और उसके पश्चात प्रत्येक वर्ष में उमी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 28th day of December 2022 and on the same day in every year thereafter.



## LPSC


184 | A Latching Solenoid Valve

387840


The present invention relates to a latching solenoid valve, and specifically to performance enhancement of latching of the solenoid valve. The two-position inline latching solenoid valves being energized to open with current and being kept either in open or closed position without power. Performance enhancements by way of one or more of the following features of higher cyclic life, larger flow rate, higher operating pressures, faster response and mass optimization.








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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044137937  
SL No :



पेटेंट सं. / Patent No.	:	387840
आवेदन सं. / Application No.	:	202041053187
फाइल करने की तारीख / Date of Filing	:	07/12/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Venkata Sunil Sai Nukala 2.Venkittaraman D

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A LATCHING SOLENOID VALVE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 7th day of December 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A LATCHING SOLENOID VALVE as disclosed in the above mentioned application for the term of 20 years from the 7th day of December 2020 in accordance with the provisions of the Patents Act,1970.



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अनुदान की तारीख : 28/01/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बचाए रखा जाना है, 7th day of December 2022 को और उसके पचास प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7th day of December 2022 and on the same day in every year thereafter.



## VSSC

185 Left Ventricle Assist Device (LVAD)

389051

The present invention relates Left Ventricle Assist Device (LVAD). In one embodiment, the LVAD comprises a volute casing and a motor casing. The volute casing and the motor casing are isolated from each other. The said volute casing comprises an integral inlet and outlet and houses an impeller. The motor casing includes a stator and a controller. The impeller is housed in the volute casing in a cantilever fashion wherein a front end of the impeller is free and rear end of the impeller is supported. The impeller also acts as a rotor with a plurality of magnets being embedded in a rear portion of the impeller. The plurality of magnets interacts with the stator to generate a rotating magnetic field to drive the impeller for pumping blood.





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044138408  
SL No :



पेटेंट सं. / Patent No.	:	389051
आवेदन सं. / Application No.	:	201841002531
फाइल करने की तारीख / Date of Filing	:	22/01/2018
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Ramaswamy Iyer Subramoniam 2.Gupta NK 3.Thomas Kurian 4.Shibu Gopinath 5.Narayanan Nambodiripad M 6.Jacob Philip 7.Ramajagol Rajakumar Maruti 8.Satheesh Kumar R et al. et al. et al.

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित LEFT VENTRICLE ASSIST DEVICE (LVAD) नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 22nd day of January 2018 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled LEFT VENTRICLE ASSIST DEVICE (LVAD) as disclosed in the above mentioned application for the term of 20 years from the 22nd day of January 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 11/02/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 22nd day of January 2020 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22nd day of January 2020 and on the same day in every year thereafter.





## VSSC


186

**A method of modelling and compensating temperature drift in amplifier circuits**


389150

The embodiments herein generally relate to the field of amplifier circuits. More specifically, the embodiments described herein relate to a method of modeling and compensating for temperature drift in amplifier circuits. Particularly, the embodiments described herein relate to a formulation for the temperature drift in terms of a resistance that is added in shunt with a gain-setting resistor.






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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**


क्रमांक : 044138451  
SL No :



पेटेंट सं. / Patent No.	:	389150
आवेदन सं. / Application No.	:	202141006759
फाइल करने की तारीख / Date of Filing	:	18/02/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.S Sreelal 2.Akshay Chauhan 3.Haresh Kumar Singh


प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD OF MODELING AND COMPENSATING TEMPERATURE DRIFT IN AMPLIFIER CIRCUITS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 18th day of February 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF MODELING AND COMPENSATING TEMPERATURE DRIFT IN AMPLIFIER CIRCUITS as disclosed in the above mentioned application for the term of 20 years from the 18th day of February 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 14/02/2022  
Date of Grant :

**INTELLECTUAL  
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पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 18th day of February 2023 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 18th day of February 2023 and on the same day in every year thereafter.



## SAC

187


A novel soft SBOC & LDPC based LLR decoding algorithm

389567


The present invention relates to a novel log likelihood ratio (LLR) based interface 5 algorithm for efficient implementation between synthesized binary offset carrier (SBOC) demodulator and low-density parity-check (LDPC) decoder in order to achieve maximum coding gain. More particularly, the present invention relates to a novel look-up table (LUT) based log likelihood ratio (LLR) decoding algorithm for minimizing the hardware requirement with achieving the maximum coding 10 gain.








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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044138613  
SL No :




पेटेंट सं. / Patent No.	:	389567
आवेदन सं. / Application No.	:	202141029025
फाइल करने की तारीख / Date of Filing	:	29/06/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हों) / Inventor(s)	:	1.Dr Deepak Mishra 2.Neeraj Mishra 3.Sanjay D Mehta 4.T.V.S Ram

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित **A NOVEL SOFT SBOC & LDPC BASED LLR DECODING ALGORITHM** नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 29th day of June 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A NOVEL SOFT SBOC & LDPC BASED LLR DECODING ALGORITHM** as disclosed in the above mentioned application for the term of 20 years from the 29th day of June 2021 in accordance with the provisions of the Patents Act, 1970.



जनदान की तारीख : 17/02/2022  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 29th day of June 2023 को और उसके परमाणु प्रत्येक वर्ष में उसी दिन देव होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 29th day of June 2023 and on the same day in every year thereafter.



## VSSC

188

**Method of producing large diameter to thickness ratio dome of Titanium Alloy in solution treated and aged condition**

389599

A method of producing large diameter to thickness ratio dome of Ti6Al4V alloy material in solution treated and aged condition, the method comprising the steps.





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**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 Of The Patents Rules)

क्रमांक : 044138631  
SL No :



पेटेंट सं. / Patent No. : 389599  
आवेदन सं. / Application No. : 201641031982  
फाइल करने की तारीख / Date of Filing : 20/09/2016  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1.Bhanu Pant 2.Satish Kumar Singh

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित METHOD OF PRODUCING LARGE DIAMETER TO THICKNESS RATIO DOME OF TITANIUM ALLOY IN SOLUTION TREATED AND AGED CONDITION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 20th day of September 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF PRODUCING LARGE DIAMETER TO THICKNESS RATIO DOME OF TITANIUM ALLOY IN SOLUTION TREATED AND AGED CONDITION as disclosed in the above mentioned application for the term of 20 years from the 20th day of September 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/02/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 20th day of September 2018 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देब होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 20th day of September 2018 and on the same day in every year thereafter.





## SAC

189

**A method of Non-Contact Hermetic Sealing of LTCC modules with pulsed Laser**

389511

The embodiments herein provide a method of Non-contact Hermetic Sealing of LTCC modules. The method comprising mounting a LTCC Substrate assembly over alloy carrier with epoxy for handling or fastening purposes. Further, the method includes soldering the Multilayer LTCC substrate with a seal ring having individual walls for electromagnetic isolation. Further, the method includes placing a Cover lid over the Seal ring such that a mechanical interface of the seal ring and the cover lid joint fit-up and forms uniform plane surface. Further, the method includes performing a non-contact pulsed based LASER sealing at the mechanical interface of the seal ring and the cover lid to seal the seal ring and the cover lid to create hermetically sealed LTCC module. The sealing is performed inside a controlled glovebox with inert environment to create the hermetically sealed LTCC module.



**INTELLECTUAL  
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भारत सरकार  
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पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044138587  
SL No :



पेटेंट सं. / Patent No.	:	389511
आवेदन सं. / Application No.	:	202141024267
फाइल करने की तारीख / Date of Filing	:	31/05/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Shivendra Tripathi 2.Sakaram Srinivasulu 3.Punam Pradeep Kumar 4.Apurba N. Bhattacharya

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD OF NON-CONTACT HERMETIC SEALING OF LTCC MODULES WITH PULSED LASER नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 31st day of May 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF NON-CONTACT HERMETIC SEALING OF LTCC MODULES WITH PULSED LASER as disclosed in the above mentioned application for the term of 20 years from the 31st day of May 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/02/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 31st day of May 2023 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 31st day of May 2023 and on the same day in every year thereafter.



## IISU

190

**A Method and Set-up for Determination of pressure and composition of a gas discharge**

389825

The present invention relates to a method and set-up for determination of pressure and composition of a gas discharge, particularly for a He-Ne gas discharge sealed in a RLG (Ring Laser Gyroscope) block made of ULE (Ultra Low Thermal Expansion) glass.





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पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

क्रमांक : 044138711  
SL No :



पेटेंट सं. / Patent No.	:	389825
आवेदन सं. / Application No.	:	202041043189
फाइल करने की तारीख / Date of Filing	:	05/10/2020
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Enni Krishna 2.Narayanan kutty Pattathil Balakrishnan Nair 3.Jagroop 4.Raman Rajagopalan 5.Paul Pandian Sripadmanabhan 6.Sam Dayala Dev Devanesan

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD AND SET-UP FOR DETERMINATION OF PRESSURE AND COMPOSITION OF A GAS DISCHARGE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 5th day of October 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD AND SET-UP FOR DETERMINATION OF PRESSURE AND COMPOSITION OF A GAS DISCHARGE as disclosed in the above mentioned application for the term of 20 years from the 5th day of October 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 21/02/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 5th day of October 2022 को और उसके पश्चात प्रत्येक वर्ष से उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 5th day of October 2022 and on the same day in every year thereafter.



## VSSC

191


**An imaging system for 3-dimensional profile, full-field displacement and strain mapping and a method thereof**

390993


The invention is in the field of profile mapping of objects, and relates to the imaging of 3-dimensional (3-D) objects, and more specifically to the measurement of 3-D profile, distance/depth of the object, whole-field displacements and strains on the surface of the 3-dimensional object using image correlation technique suitable for characterizing specimens, and studying the mechanical behaviour of components and structures.








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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)


क्रमांक : 044139114  
SL No :




पेटेंट सं. / Patent No.	:	390993
आवेदन सं. / Application No.	:	202141031012
फाइल करने की तारीख / Date of Filing	:	10/07/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.SWAIN, Digendranath 2.THOMAS, Binu Panackaparambil 3.SHUNMUGAVEL, Karthigai Selvan 4.PHILIP, Jeby

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित AN IMAGING SYSTEM FOR 3-DIMENSIONAL PROFILE, FULL-FIELD DISPLACEMENT AND STRAIN MAPPING AND A METHOD THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 10th day of July 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN IMAGING SYSTEM FOR 3-DIMENSIONAL PROFILE, FULL-FIELD DISPLACEMENT AND STRAIN MAPPING AND A METHOD THEREOF as disclosed in the above mentioned application for the term of 20 years from the 10th day of July 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 02/03/2022  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 10th day of July 2023 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 10th day of July 2023 and on the same day in every year thereafter.





## SCL & IIT Mandi

192

**A Process for i-line resist dissolution modulation using Hydroxy-Styrene Based ter-Polymer**

391608

An i-line resist composition comprising hydroxystyrene based terpolymer as dissolution rate modulator, which is a positive resist composition. wherein the styrene based terpolymer is hydroxystyrene-styrene-t-butylacrylate (Mw- 10000-15000). The i-line resist composition comprises: a) 5 to 35 Wt. % of an alkali soluble phenolic resin; b) 2 to 30 Wt. % of a photoactive compound; c) 2 to 15 Wt. % of a hydroxy styrene based terpolymer; d) 50 to 95 Wt. % of a solvent; and e) 0 to 3 Wt. % of non-ionic silicon based surfactant. The phenolic resin is a novolac resin with molecular weight, (calculated using polystyrene standard) range from Mw 3000 to Mw 30000, preferably from Mw 5000 to Mw 22000.



क्रमांक : 044139304  
SL No :



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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No. : 391608  
आवेदन सं. / Application No. : 202141007495  
फाइल करने की तारीख / Date of Filing : 23/02/2021  
पेटेंटी / Patentee : 1.Indian Space Research Organisation 2.Indian institute of Technology Mandi  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1.Santu Nandi 2.Lalit khillare 3.M. Yogesh 4.Suman Dolai 5.Chullikkattil P. Pradeep 6.Satinder K. Sharma 7.Anvesh Bogavelly 8.Deep Narayan Tiwari et al. et al. et al. et al.

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR I-LINE RESIST DISSOLUTION MODULATION USING HYDROXY-STYRENE BASED TER-POLYMER नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 23rd day of February 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR I-LINE RESIST DISSOLUTION MODULATION USING HYDROXY-STYRENE BASED TER-POLYMER as disclosed in the above mentioned application for the term of 20 years from the 23rd day of February 2021 in accordance with the provisions of the Patents Act,1970.



अनुदान की तारीख : 09/03/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 23rd day of February 2023 को और उसके पचास प्रत्येक वर्ष में उसी दिन देव होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 23rd day of February 2023 and on the same day in every year thereafter.



## URSC

193

**An antenna steering mechanisms with self hold down features for communication spacecraft**

393573

The present invention relates to a four bar linkage antenna steering mechanism by configuring the steering mechanism in near dead center configuration thereby eliminating the need of a separate hold down release mechanism. The steering mechanism has a spacecraft interface for securing the steering mechanism and a driving device to provide a rotary motion; characterized in that the driving device is connected to an input link in which one end of a coupler link is hinged and the other end of said coupler link is connected to a first output link bracket which moves up and down about main bearing axis to steer the reflector. At dead center configuration, the four bar mechanism loses its mobility and changes to structure. During its motion towards the dead center, the configuration offers resistance as the links get aligned as they approach the dead center.





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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044139965  
SL No :



पेटेंट सं. / Patent No.	:	393573
आवेदन सं. / Application No.	:	201641030507
फाइल करने की तारीख / Date of Filing	:	07/09/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Abhinandan Kapoor 2.Narasimiah Viswanatha 3.Batkal Panduranga Nagaraj 4.Kowshika Anantha Keshavamurthy

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित AN ANTENNA STEERING MECHANISMS WITH SELF HOLD DOWN FEATURES FOR COMMUNICATION SPACECRAFT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 7th day of September 2016 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN ANTENNA STEERING MECHANISMS WITH SELF HOLD DOWN FEATURES FOR COMMUNICATION SPACECRAFT as disclosed in the above mentioned application for the term of 20 years from the 7th day of September 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 30/03/2022  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 7th day of September 2018 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7th day of September 2018 and on the same day in every year thereafter.



## NARL

194


Dual Polarization Lidar System

394875


The present description discloses a LIDAR system which comprises a transmitter subsystem that transmits a laser beam, a receiver subsystem coupled to the transmitter subsystem in a biaxial configuration and a signal acquisition unit. The receiver subsystem has a variable Field Of View (FOV) and comprises an optical tube assembly, a field adjuster and a plurality of light converters. The optical tube assembly collects a backscattered laser beam. The field adjuster is used to adjust the FOV of the receiver subsystem and direct the backscattered laser beam towards the light converters. The light converters convert the directed backscattered laser beam into electric signals. The electric signals from each light converter are processed by the signal acquisition unit using a combination of an analog detector and a photon counter.








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सत्यमेव जयते

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पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**

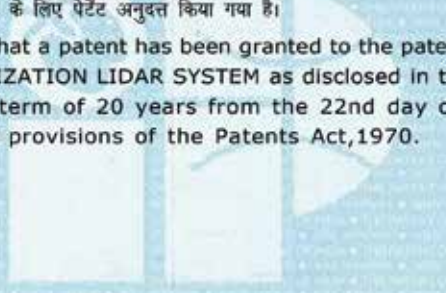
क्रमांक : 044140444  
SL No :




पेटेंट सं. / Patent No.	:	394875
आवेदन सं. / Application No.	:	452/CHE/2010
फाइल करने की तारीख / Date of Filing	:	22/02/2010
पेटेंटी / Patentee	:	DEPARTMENT OF SPACE

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित **DUAL POLARIZATION LIDAR SYSTEM** नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 22nd day of February 2010 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।


It is hereby certified that a patent has been granted to the patentee for an invention entitled **DUAL POLARIZATION LIDAR SYSTEM** as disclosed in the above mentioned application for the term of 20 years from the 22nd day of February 2010 in accordance with the provisions of the Patents Act, 1970.



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अनुदान की तारीख : 18/04/2022  
Date of Grant :



Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 22nd day of February 2012 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देना होगा।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22nd day of February 2012 and on the same day in every year thereafter.





## SAC

195

**High Power-Compatible, Passive Intermodulation-Free Focal Plane Helix Feed Array Antenna**

395342

A Helical Antenna fed by waveguide capable of handling high power in geostationary space environment and passive intermodulation-free design has been realized. The helix conductor is formed integrally with a waveguide ridge transformer machined as a single piece. The waveguide ridge transformer is connected to a base plate providing thermal connectivity whereby heat is conducted to spacecraft ground. An asymmetric array of these helical elements at predefined locations in the focal plane of an offset reflector antenna generates multiple spot beams as per the required coverage scheme. Mutual coupling minimization and pattern symmetry is achieved by enclosing each helix with a metallic cylindrical cup. The helix elements are supported by multi-piece dielectric former. The helix support former is realized by taking the helix thermal dissipation into account. All the fasteners used on the ground plane for waveguide support and dielectric former support are designed to prevent material mismatch. The measured passive intermodulation level is below -200 dBc with an input power of 250 watts per helix element.



क्रमांक : 044140609  
SL No :



भारत सरकार  
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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	395342
आवेदन सं. / Application No.	:	4571/CHE/2012
फाइल करने की तारीख / Date of Filing	:	01/11/2012
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.RAJEEV JYOTI 2.K.K. SOOD 3.SRAVAN.K. SAGI 4.JIGAR PANDYA 5.JIDESH.S.NAIR 6.Y.H. TRUVEDU 7.B.N.PANDYA 8.AMIT AGARWAL et al. et al. et al.

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित HIGH POWER-COMPATIBLE, PASSIVE INTERMODULATION-FREE FOCAL PLANE FELIX FEED ARRAY ANTENNA नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 1st day of November 2012 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled HIGH POWER-COMPATIBLE, PASSIVE INTERMODULATION-FREE FOCAL PLANE FELIX FEED ARRAY ANTENNA as disclosed in the above mentioned application for the term of 20 years from the 1st day of November 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 25/04/2022  
Date of Grant :

  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 1st day of November 2014 को और उसके पश्चात क्रमिक वर्षों में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 1st day of November 2014 and on the same day in every year thereafter.



## SAC

196


**Spurious Resonating Mode Suppression using Inbuilt Spurious Suppressor in Preselect Filters**

397061


A high frequency waveguide cavity filter having a metallic hollow conductive body with an open top portion and side walls are covered with a conductive lid defining a plurality of waveguide resonating cavities, which are inductively coupled by an iris, that protrudes from the conductive side walls of the hollow conductive body; wherein said conductive lid comprising of: - one or more metallic stubs that extends orthogonally into each cavity from the lower surface of said conductive lid which operates as spurious mode suppression barrier in order to shift the undesired resonating frequency; and - a plurality of tuning elements that are arranged externally on the top surface of said conductive lid, for adjustment of the desired resonating frequency for each waveguide cavity.








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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)


क्रमांक : 044141290  
SL No :



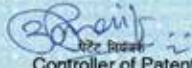
पेटेंट सं. / Patent No.	:	397061
आवेदन सं. / Application No.	:	202141006633
फाइल करने की तारीख / Date of Filing	:	17/02/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Nishant Shukla 2.Tushar Gajjar 3.Yauvan dave 4.Vikas Gupta 5.Kasif Khan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित SPURIOUS RESONATING MODE SUPPRESSION USING INBUILT SPURIOUS SUPPRESSOR IN WAVEGUIDE CAVITY FILTERS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2021 के सत्रहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SPURIOUS RESONATING MODE SUPPRESSION USING INBUILT SPURIOUS SUPPRESSOR IN WAVEGUIDE CAVITY FILTERS as disclosed in the above mentioned application for the term of 20 years from the 17<sup>th</sup> day of February 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 18/05/2022  
Date of Grant :



Controller of Patent

**टिप्पणी -** इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, फरवरी 2023 के सत्रहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note -** The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 17<sup>th</sup> day of February 2023 and on the same day in every year thereafter.



## VSSC

197

**A Method And Apparatus For Measuring The Resistance of Squib/Pyro Elements in High Explosive Applications**

397330

Disclosed herein is a low voltage, low power intrinsically safe digital igniter resistance measurement circuit which works on a single cell (1V to 1.5V) for measurement of squib/pyro initiator resistance using a ratiometric technique. The device is safe thereby enabling its use in highly explosive and safety critical environments. The output is obtained as a digital read-out and hence the measurement is faster and accurate. The circuitry is simple and ensures that the variation in supply voltage will not affect the output. The product finds application in measurement of squib resistance of igniter assembled condition/high explosive areas/safety critical areas, measuring other parameters like temperature of an RTD or pressure/strain using resistive pickup elements assembled in explosive sensitive or safety critical or intrinsic safe or cryogenic applications.





क्रमांक : 044141395  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 397330  
आवेदन सं. / Application No. : 202041048143  
फाइल करने की तारीख / Date of Filing : 04/11/2020  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.Noel Philip Valiyakalayil 2.Saroop Sunderan Alphonsa  
3.Roy Thankachan 4.Latha Thankappan 5.Athuladevi  
Sathidevi 6.Valsa Bharathi

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A METHOD AND APPARATUS FOR MEASURING THE RESISTANCE OF SQUIB/PYRO ELEMENTS IN HIGH EXPLOSIVE APPLICATIONS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2020 के चौथे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD AND APPARATUS FOR MEASURING THE RESISTANCE OF SQUIB/PYRO ELEMENTS IN HIGH EXPLOSIVE APPLICATIONS as disclosed in the above mentioned application for the term of 20 years from the 4<sup>th</sup> day of November 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 21/05/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, नवम्बर 2022 के चौथे दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 4<sup>th</sup> day of November 2022 and on the same day in every year thereafter.





## VSSC

198

Room temperature curable

398180

An epoxy resin composition, comprising: a bisphenol A type difunctional epoxy resin with two terminal epoxy groups, an epoxy core shell rubber additive, one or more amine hardener/ mixture of a plurality of amine hardeners bearing two terminal amino groups in a polyether backbone, and a cure accelerator.



क्रमांक : 044141695  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
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पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	398180
अवेदन सं. / Application No.	:	202141027862
फाइल करने की तारीख / Date of Filing	:	22/06/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
अविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Leena Karthikeyan 2.Shoy Joseph 3.Pravin Ratnam 4.Dona Mathew 5.Mercy Thelakkattu Devassy 6.Bibin John 7.Sumol Veliyil Gopinadh 8.Ramesh Govindan et al.

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित ROOM TEMPERATURE CURABLE, LOW OUT-GASSING EPOXY RESIN COMPOSITION AND A PROCESS FOR PREPARING THE SAME नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2021 के बाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ROOM TEMPERATURE CURABLE, LOW OUT-GASSING EPOXY RESIN COMPOSITION AND A PROCESS FOR PREPARING THE SAME as disclosed in the above mentioned application for the term of 20 years from the 22<sup>nd</sup> day of June 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 31/05/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जून 2023 के बाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22<sup>nd</sup> day of June 2023 and on the same day in every year thereafter.



## VSSC

199 Room temperature curable, low-density

398501

A room temperature curable, low-density, low outgassing, non-sagging, injectable, two part epoxy adhesive composition acting as a potting composition or a void filling composition, the composition comprising: a resin component A comprising: a. 50-75 % by weight of a liquid glycidyl ether epoxy resin, b. 1-20 % by weight of a toughening agent comprising diglycidyl ether resin incorporated with rubber, wherein the toughening agent comprises rubber incorporated epoxy resin, and the toughening agent comprises epoxy molecule incorporated with 10-50 % of the rubber, c. 10-50 % by weight of a filler.





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(Rule 74 of The Patents Rules)

क्रमांक : 044141818  
SL No :



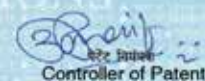
पेटेंट सं. / Patent No.	:	398501
आवेदन सं. / Application No.	:	202141036535
फाइल करने की तारीख / Date of Filing	:	12/08/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.BABY, Monisha 2.JOSEPH, Shoy 3.MAHESH, Sankarapillai 4.GOPI, Baiju 5.RATNAM, Pravin 6.MATHEW, Dona

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित Room Temperature Curable, Low Density, Low Outgassing, Non-Sagging Epoxy Composition And A Process Thereof नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2021 के बारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled Room Temperature Curable, Low Density, Low Outgassing, Non-Sagging Epoxy Composition And A Process Thereof as disclosed in the above mentioned application for the term of 20 years from the 12<sup>th</sup> day of August 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/06/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी -** इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अगस्त 2023 के बारहवें दिन को और उसके पचास प्रत्येक वर्ष से उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 12<sup>th</sup> day of August 2023 and on the same day in every year thereafter.



## VSSC

200

**Ultra-Low Solar Absorptive and High IR Emissive Thermal Control Coating Through a Non-Aqueous Route**

398827

The present invention relates to a low solar absorptive, high IR emissive, and low outgassing thermal control coating composition and a process for preparing the same, wherein a silicone is selected, and blended with special fillers such as gallium oxide, barium sulfate, and magnesium oxide to form a premix. The premix is dispersed in an organic solvent, applied over the substrate, and curing is done at ambient temperature to form the said curable coating composition. The process for the preparation of the thermal control coating involves the steps of selection of a binder; blending with special filters, dispersion of premix in a solvent, and followed by condensation curing at ambient temperature. The invention is useful in spacecraft thermal control systems and general-purpose radiators.





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सत्यमेव जयते

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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044141941  
SL No :



पेटेंट सं. / Patent No.	:	398827
आवेदन सं. / Application No.	:	202141051722
फाइल करने की तारीख / Date of Filing	:	11/11/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Indulekha Komath 2.Shahina Malikaparambil Abdul Razak 3.Rajvihar Sivaraman Nair Rajeev 4.Dona Mathew

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में बयां प्रकटित ULTRA-LOW SOLAR ABSORPTIVE AND HIGH IR EMISSIVE THERMAL CONTROL COATING THROUGH A NON-AQUEOUS ROUTE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2021 के ग्यारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ULTRA-LOW SOLAR ABSORPTIVE AND HIGH IR EMISSIVE THERMAL CONTROL COATING THROUGH A NON-AQUEOUS ROUTE as disclosed in the above mentioned application for the term of 20 years from the 11<sup>th</sup> day of November 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 09/06/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, नवम्बर 2023 के ग्यारहवें दिन को और उसके पश्चात क्रमिक वर्ष में उसी दिन देव होगी।  
**Note** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 11<sup>th</sup> day of November 2023 and on the same day in every year thereafter.





## SAC

201

**Novel Technique for Aerosol Retrieval over Land using Partially Sensitive Spectral Channels**

399227

The present invention relates to the method of retrieval of spectral aerosol optical depth over the land from visible and near-infrared channels of Ocean Color Monitor onboard OCEANSAT-2, without the pre-requisite SWIR bands, as is needed in other algorithms/methodologies across the remote sensing community. The proposed method includes the steps of (a) surface characterization in visible channels; (b) radiative transfer simulation; (c) aerosol inversion and NDVI generation. The method enables simultaneous retrieval of spectral AOD at 490, 550, and 620 nm and atmospherically corrected normalized difference vegetation index (NDVI) without assuming that NIR and red channels are perfectly transparent to aerosols. The display of retrieval of spectral aerosol optical depth is available daily at a spatial resolution of 700mt.



क्रमांक : 044142085  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 399227  
आवेदन सं. / Application No. : 202141046670  
फाइल करने की तारीख / Date of Filing : 13/10/2021  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.Manoj Kumar Mishra 2.Arundhati Misra 3.Praveen Kumar Gupta 4.Raj Kumar

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में व्यापककृत NOVEL TECHNIQUE FOR AEROSOL RETRIEVAL OVER LAND USING PARTIALLY SENSITIVE SPECTRAL CHANNELS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2021 के तेरहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled NOVEL TECHNIQUE FOR AEROSOL RETRIEVAL OVER LAND USING PARTIALLY SENSITIVE SPECTRAL CHANNELS as disclosed in the above mentioned application for the term of 20 years from the 13<sup>th</sup> day of October 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 15/06/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी -** इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अक्टूबर 2023 के तेरहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 13<sup>th</sup> day of October 2023 and on the same day in every year thereafter.



## URSC

202

**A System Enabling Real Time Lossless Compression of Telemetry (TM) Data of a Satellite, Said System Comprising**

399043

A plurality of sensors and a plurality of electronic devices associated with the satellite; a processor operatively coupled to the plurality of sensors and plurality of electronic devices, wherein the processor executes a set of executable instructions that are stored in a memory, upon execution of which, the processor causes the system.





क्रमांक : 044142014  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 399043  
आवेदन सं. / Application No. : 202141031539  
फाइल करने की तारीख / Date of Filing : 14/07/2021  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1.RAHUL MISHRA 2.SUDHAKAR S. 3.SUBRAMANYA UDUPA

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित SYSTEM AND METHOD ENABLING COMPRESSION AND STORAGE OF HOUSE KEEPING TELEMETRY DATA नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जुलाई 2021 के चौदहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SYSTEM AND METHOD ENABLING COMPRESSION AND STORAGE OF HOUSE KEEPING TELEMETRY DATA as disclosed in the above mentioned application for the term of 20 years from the 14<sup>th</sup> day of July 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 13/06/2022  
Date of Grant :

  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जुलाई 2023 के चौदहवें दिन को और उसके परवर्त जल्लेक वर्ष में उसी दिन देय होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 14<sup>th</sup> day of July 2023 and on the same day in every year thereafter.



## VSSC

203

**A Process for the Preparation of Highly Porous and Hard Anhydrous Lithium Hydroxide Pellets for  $\text{CO}_2$  Gas Absorption**

400104

A formulation for obtaining lithium hydroxide pellets for absorption of carbon dioxide gas comprising lithium hydroxide monohydrate present in amounts of 93-100 wt%; lithium carbonate 0-4wt%; suitable binders in amounts 0.5-5wt.% and moisturizing agent.

The formulation for obtaining lithium hydroxide pellets for absorption on of carbon dioxide gas claimed in claim 1 wherein the suitable binder is at least one of cellulose derivatives selected from methyl cellulose, starch and carboxymethyl cellulose.





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सत्यमेव जयते

**भारत सरकार**  
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**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044142408  
SL No :



पेटेंट सं. / Patent No.	:	400104
आवेदन सं. / Application No.	:	2872/CHE/2015
फाइल करने की तारीख / Date of Filing	:	09/06/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Deepthi L Sivadas 2.Salu Jacob 3.Appala Raju Akula 4.Rajeev Raghavan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR THE PREPARATION OF HIGHLY POROUS AND HARD ANHYDROUS LITHIUM HYDROXIDE PELLETS FOR CO<sub>2</sub> GAS ABSORPTION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2015 के नौवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR THE PREPARATION OF HIGHLY POROUS AND HARD ANHYDROUS LITHIUM HYDROXIDE PELLETS FOR CO<sub>2</sub> GAS ABSORPTION as disclosed in the above mentioned application for the term of 20 years from the 9<sup>th</sup> day of June 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 27/06/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जून 2017 के नौवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 9<sup>th</sup> day of June 2017 and on the same day in every year thereafter.





## LPSC

204

**Pressure Regulation System with Variable Set Pressure and Ramping**

401646

This application provides a pressure regulator with dual loading and a pressure regulator system to obtain variable set pressure of a supply gas. The pressure regulator comprises a housing having an inlet, an outlet and a reference inlet. A piston having a surface connected to the outlet is disposed in the housing. A poppet is connected to the piston. The piston is configured to sense the pressure of the supply gas. The poppet moves in left or right direction to regulate its opening based on the comparison of outlet pressure load with a reference load. A first spring connected to the poppet is configured to provide a seat load for leak tightness of the pressure regulator during closed condition of the poppet. A second spring connected to the piston is configured to provide a reference load to achieve a first set pressure. To change the set pressure of the supply gas to a second set pressure value, a gas is admitted through a reference inlet which increases the reference load of the pressure regulator. A bleed orifice is provided to avoid over pressurization.



भारत सरकार  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044142961  
SL No :



पेटेंट सं. / Patent No.	:	401646
आवेदन सं. / Application No.	:	202141044556
फाइल करने की तारीख / Date of Filing	:	01/10/2021
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.KUHITE, Kailas Shalikram 2.SANKAR, Sunil 3.DHARMARAJAN, Venkittaraman 4.AVANAMUTHU, Manimaran

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित PRESSURE REGULATION SYSTEM WITH VARIABLE SET PRESSURE AND RAMPING नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2021 के पहले दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PRESSURE REGULATION SYSTEM WITH VARIABLE SET PRESSURE AND RAMPING as disclosed in the above mentioned application for the term of 20 years from the 1<sup>st</sup> day of October 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 20/07/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, अक्टूबर 2023 के पहले दिन की और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 1<sup>st</sup> day of October 2023 and on the same day in every year thereafter.



## VSSC

205 A coupling system comprising

401805

A housing having a hollow cavity a cord disposed within the hollow cavity and comprising a high energy combustible material; at least two ignition cartridges mounted on the housing and oriented in a direction towards the cord, and adapted to ignite the high energy combustible material; and a pair of transfer lines, each attached to a side of the housing and axially coupled to the cord, wherein the combustion propagates axially from the cord towards the pair of transfer lines.





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सत्यमेव जयते

**भारत सरकार**  
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**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044143025  
SL No :



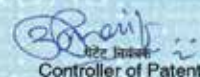
पेटेंट सं. / Patent No.	:	401805
आवेदन सं. / Application No.	:	202241000431
फाइल करने की तारीख / Date of Filing	:	04/01/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.MAJUMDAR, Bishwajyoti Dutta 2.KAILAS, Shete Mayuresh 3.PILLAI, Vineeth Gayathri Muralaeddharan 4.PAUL, Ciju 5.CHANDRAN, Sheeju 6.ABRAHAM, Baby 7.POKKAN, Purushothaman

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A Coupling System And A Method For Providing Redundant Initiation Means Thereof नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जनवरी 2022 के चौथे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A Coupling System And A Method For Providing Redundant Initiation Means Thereof as disclosed in the above mentioned application for the term of 20 years from the 4<sup>th</sup> day of January 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 21/07/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जनवरी 2024 के चौथे दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 4<sup>th</sup> day of January 2024 and on the same day in every year thereafter.



## VSSC

206

Space grade syntactic foam composition and a process for preparation

402283

Invention is in the field of syntactic foam compositions useful in space launch vehicles and general-purpose applications. Invention also provides a process for preparation of the said composition.

Recent studies on silicon-based polymers are of great technological importance, especially for space application. Poly(dimethylsiloxane) (PDMS) is a well-known member of the siloxane family, which is heavily used in the industry. The importance of PDMS comes from its good electrical properties, optical clarity, weather resistance and 10 very low glass transition temperature,  $T_g(-120^\circ\text{C})$ . Its elastic properties cover a large range of temperatures. The statistical properties of PDMS chains are markedly different than other chains used in the commonly used elastomers. Since, the Si–O bond is rotationally flexible, PDMS shows an unusually high degree of chain flexibility. Alternating bond angles in the PDMS chain and the ionic nature of the Si–O bond leads to highly variable conformational behaviour. However, its mechanical properties are very poor. There are very few applications of the PDMS elastomers used in the unfilled state. Most applications require that PDMS should be reinforced with particulate fillers.





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**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044143208  
SL No :



पेटेंट सं. / Patent No.	:	402283
आवेदन सं. / Application No.	:	202141059958
फाइल करने की तारीख / Date of Filing	:	22/12/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	Ann Mathew

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **SPACE GRADE SYNTACTIC FOAM COMPOSITION AND A 10 PROCESS FOR PREPARATION** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2021 के बाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुवृत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **SPACE GRADE SYNTACTIC FOAM COMPOSITION AND A 10 PROCESS FOR PREPARATION** as disclosed in the above mentioned application for the term of 20 years from the 22<sup>nd</sup> day of December 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 28/07/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2023 के बाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22<sup>nd</sup> day of December 2023 and on the same day in every year thereafter.





## VSSC

207


**A Method of Fabrication of Polyimide Pipelines for Cryogenic Applications**

373678


In cryogenic application it is required to supply liquid oxygen of 77K and liquid hydrogen of 20K through pipelines from tanks to various subsystems during operation. These pipes should be light weight, strong and leak tight of various shapes while used for stage functions like filling, draining, venting, conditioning, feeding etc. It should also withstand the temperature ranging from ambient to cryogenic level. Polyimide is having the potential to replace metals in various applications including cryogenics.

The present invention relates to a method of fabrication of pipelines and more specifically to a method of fabrication of polyimide pipelines for cryogenic applications. The method is useful in pneumatic hydraulic feed systems such as fill and drain, vent and relief, feed system etc. of cryogenic stages of launch vehicles.






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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)**


क्रमांक : 044132545  
SL No :




पेटेंट सं. / Patent No.	:	373678
आवेदन सं. / Application No.	:	201941017335
फाइल करने की तारीख / Date of Filing	:	01/05/2019
पेटेंटी / Patentee	:	Indian Space Research Organisation

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A METHOD OF FABRICATION OF POLYIMIDE PIPELINES FOR CRYOGENIC APPLICATIONS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 1st day of May 2019 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A METHOD OF FABRICATION OF POLYIMIDE PIPELINES FOR CRYOGENIC APPLICATIONS as disclosed in the above mentioned application for the term of 20 years from the 1st day of May 2019 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/08/2021  
Date of Grant :



पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 1st day of May 2021 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note. - The fee for renewal of this patent, if it is to be maintained will fall / has fallen due on 1st day of May 2021 and on the same day in every year thereafter.



## VSSC

### 208 Dispensing System for Sea Marker Dye

397554

Disclosed herein is a method to dispense a marker dye into sea for locating floating objects. A marker dye which is easily miscible with water is vacuum packed in a sachet (1) made of poly vinyl alcohol (PVA) film. The sachet (1) is heat sealed. The heat-sealed sachet is encased in another rubber coated fabric cover (3) having one or more holes. The rubber cover provides easy handling of the object. When the sachet comes in contact with sea, water seeps in through the holes and dissolves the sachet within 10 seconds. The dye (2) spreads in the sea water and creates a long patch on the sea surface, which is easily identifiable from a distance.





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**THE PATENT OFFICE**  
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**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044141461  
SL No :



पेटेंट सं. / Patent No.	:	397554
आवेदन सं. / Application No.	:	1041/CHE/2014
फाइल करने की तारीख / Date of Filing	:	28/02/2014
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.UNNIKRISHNAN NAIR S 2.A. SUBRAMONIAM

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित DISPENSING SYSTEM FOR SEA MARKER DYE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2014 के अट्ठाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled DISPENSING SYSTEM FOR SEA MARKER DYE as disclosed in the above mentioned application for the term of 20 years from the 28<sup>th</sup> day of February 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 25/05/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, फरवरी 2016 के अट्ठाईसवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 28<sup>th</sup> day of February 2016 and on the same day in every year thereafter.



## VSSC

209

Process for the production of Catalyst grade nano sized alpha-ferric oxide as propellant burn rate enhancer

374887

A process for the production of catalyst grade, nano-sized  $\alpha$ -ferric oxide as propellant burn rate enhancer comprising the steps of:

- gradually adding aqueous solution of urea to aqueous solution of ferric salt under constant stirring at 75-95°C, over a period of 2 to 6 hours to obtain a yellowish red precipitate and a supernatant liquid;
- subjecting the yellowish red precipitate to separation, washing and drying to yield  $\text{FeOOH}$ ; and
- calcining the yellowish red precipitate by heating at 230-260°C for a period of 15-20 hours resulting in red  $\alpha$ -ferric oxide





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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044133048  
SL No :



पेटेंट सं. / Patent No.	:	374887
आवेदन सं. / Application No.	:	202141005985
फाइल करने की तारीख / Date of Filing	:	12/02/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
अविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Deepthi L Sivadas 2.Salu Jacob 3.G. Rekha Krishnan 4.Appala Raju Akula 5.R Rajeev 6.Benny K George

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित PROCESS FOR THE PRODUCTION OF CATALYST GRADE NANO-SIZED ALPHA-FERRIC OXIDE AS PROPELLANT BURN RATE ENHANCER नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 12th day of February 2021 से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS FOR THE PRODUCTION OF CATALYST GRADE NANO-SIZED ALPHA-FERRIC OXIDE AS PROPELLANT BURN RATE ENHANCER as disclosed in the above mentioned application for the term of 20 years from the 12th day of February 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 19/08/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 12th day of February 2023 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 12th day of February 2023 and on the same day in every year thereafter.





## VSSC

210

**An Optimum Quality Composite Facilitating Thermal Protection and Method of Manufacturing Thereof**

403022

The present disclosure provides for a high temperature stable, low-density, flame retardant silicone composite with very low solar absorptance and low outgassing properties and a method for preparing the same, wherein a silicone binder is selected, and blended with special particulate and fibrous fillers to form a premix. The said premix is moulded in suitable moulds and cured under pressure at 100°C to form the said composite. The invention is highly useful in both spacecraft thermal management and as general-purpose thermal protection system.



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**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044143535  
SL No :



पेटेंट सं. / Patent No.	:	403022
आवेदन सं. / Application No.	:	202141042044
फाइल करने की तारीख / Date of Filing	:	17/09/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.INDULEKHA KOMATH 2.RAJVIHAR SIVARAMAN NAIR RAJEEV 3.DONA MATHEW

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में बयां प्रकटित AN OPTIMUM QUALITY COMPOSITE FACILITATING THERMAL PROTECTION AND METHOD OF MANUFACTURING THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2021 के सत्रहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled AN OPTIMUM QUALITY COMPOSITE FACILITATING THERMAL PROTECTION AND METHOD OF MANUFACTURING THEREOF as disclosed in the above mentioned application for the term of 20 years from the 17<sup>th</sup> day of September 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 04/08/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी -** इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, सितम्बर 2023 के सत्रहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 17<sup>th</sup> day of September 2023 and on the same day in every year thereafter.



## VSSC

211

**A Shearography System and a Method for Generating Shearograms Thereof**

403106

In general, the present invention claims a shearography system for non destructive testing (NDT) and inspection of objects and a method for generating shearograms. The system comprises a portable housing for enclosing a laser unit and a plurality of optical elements including at least one imaging lens, a lens controller, an alignment free Sagnac interferometer with imaging system comprises of a plurality of imaging lenses a polarized laser beam splitter, a plurality of mirrors and a kinematic mirror mount to translate the polarized images with respect to each other along said image plane and a micropolarizer image array sensor for focusing polarized split images along the path directed back towards said polarized laser beam splitter traversing a common single path into said micro-polarizer image array sensor through at least one quarter wave plate to form a single sheared speckle image at a single stress state in a single shot and a controller in communication with a processor configured for generating intensity maps, shearograms and plurality of phase maps from said extracted plurality of phase shifted images in real time.





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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044143570  
SL No :



पेटेंट सं. / Patent No.	:	403106
आवेदन सं. / Application No.	:	202241003875
फाइल करने की तारीख / Date of Filing	:	24/01/2022
पेटेटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION

प्रमाणित किया जाता है कि पेटेटी को, उपरोक्त आवेदन में यथाप्रकटित A SHEAROGRAPHY SYSTEM AND A METHOD FOR GENERATING SHEAROGRAMS THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जनवरी 2022 के चौबीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SHEAROGRAPHY SYSTEM AND A METHOD FOR GENERATING SHEAROGRAMS THEREOF as disclosed in the above mentioned application for the term of 20 years from the 24<sup>th</sup> day of January 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 05/08/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जनवरी 2024 के चौबीसवें दिन को और उसके परात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24<sup>th</sup> day of January 2024 and on the same day in every year thereafter.



## SCL

212


**Wide Bandgap Semiconductor Device with Gate Structure and Manufacturing Method thereof**

403360


The present disclosure relates to a comb finger structure and notch gate design, for improving electrical properties of a semiconductor device and discloses a fabrication route to economically realize the same, and more specifically, relates to manufacturing a wide bandgap semiconductor device. III-N based semiconductors comprise binary, ternary and quaternary combinations of group III elements with nitrogen forming a wide bandgap compound. These compound semiconductors also lack inversion symmetry, which results in a definitive spontaneous polarization. When a III-N (e.g., AlGa<sub>N</sub>) semiconductor is epitaxially grown on top of another III-N semiconductor (e.g., GaN) the lack of inversion symmetry in combination with the difference in lattice constants between the two semiconductors results in the creation of polarization charges at interface between the two.








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PATENTS | DESIGNS | TRADE MARKS  
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सत्यमेव जयते

**भारत सरकार**  
**GOVERNMENT OF INDIA**  
**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)


क्रमांक : 044143659  
SL No :



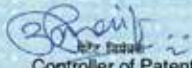
पेटेंट सं. / Patent No.	:	403360
आवेदन सं. / Application No.	:	202241005757
फाइल करने की तारीख / Date of Filing	:	03/02/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.DHAYALAN, Sathish kumar 2.SHARMA, Anil 3.PANDEY, Mukund kant 4.PARAMASIVAM, Elayaraja 5.HOODA, Manish kumar 6.SINGH, Surinder

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित WIDE BANDGAP SEMICONDUCTOR DEVICE WITH GATE STRUCTURE AND MANUFACTURING METHOD THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2022 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled WIDE BANDGAP SEMICONDUCTOR DEVICE WITH GATE STRUCTURE AND MANUFACTURING METHOD THEREOF as disclosed in the above mentioned application for the term of 20 years from the 3<sup>rd</sup> day of February 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 11/08/2022  
Date of Grant :



Controller of Patent

**टिप्पणी -** इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, फरवरी 2024 के तीसरे दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 3<sup>rd</sup> day of February 2024 and on the same day in every year thereafter.





## VSSC

213

A Tool for Disconnecting connector Plugs from Sockets

403685

The Invention relates to mechanical tools and specifically to a tool for disengaging connector plugs from sockets, more specifically to disengage D-type connectors.

A Connector removal tool is always demanding in the electrical sector for disengaging electrical connector plug from the socket without causing damage to the connectors, connector pins, and connector wiring. The principle of operation of this tool is to exert a uniform pulling force on the connector plate during the disengaging process.



क्रमांक : 044143757  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	403685
आवेदन सं. / Application No.	:	4642/CHE/2015
फाइल करने की तारीख / Date of Filing	:	02/09/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Shri Dominic George Joseph 2.Shri Ashok Kumar S 3.Smt. Anna Priya Koshy 4.Shri Sreenath D I 5.Shri Paramasivam R

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A TOOL FOR DISCONNECTING CONNECTOR PLUGS FROM SOCKETS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2015 के दूसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A TOOL FOR DISCONNECTING CONNECTOR PLUGS FROM SOCKETS as disclosed in the above mentioned application for the term of 20 years from the 2<sup>nd</sup> day of September 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/08/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, सितम्बर 2017 के दूसरे दिन को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 2<sup>nd</sup> day of September 2017 and on the same day in every year thereafter.



## VSSC

214

**Explosive Actuated Multi Stand Cable Cutting  
Shut Off Valve**

403970

Disclosed herein is an explosive actuated shut off valve for shearing multi strand cables. It consists of the following components: an explosive cartridge housed inside the valve housing. A connector is used to fire the cartridge. A piston integral with cutter is also housed in the valve housing. O rings are connected to the piston. The cutter is in direct contact with a probe tube. A multi strand cable passes through the probe tube. Ferrules are housed into valve housing such that they will project out in the valve housing slot. Nuts are tightened on ferrules so as to grip the probe tube. Seals are used for soft gripping of the probe tube. An indicative circuit adaptor consists of a guide and bush is housed on the opposite end of cartridge side of valve housing. The invention is very much useful in emergency shut off line of hazardous fluids and in shearing the multi strand cables for release systems for parachutes etc.





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**THE PATENT OFFICE**  
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**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044143868  
SL No :



पेटेंट सं. / Patent No.	:	403970
आवेदन सं. / Application No.	:	4/CHE/2015
फाइल करने की तारीख / Date of Filing	:	01/01/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Shete Mayuresh Kailas 2.Bishwajyoti Dutta Majumdar 3.Bodagala Hari Haranath 4.Cherien Thomas 5.Baby Abraham 6.A. G. Rajendran 7.V. Srinivasan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित EXPLOSIVE ACTUATED MULTI STAND CABLE CUTTING SHUT OFF VALVE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जनवरी 2015 के पहले दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled EXPLOSIVE ACTUATED MULTI STAND CABLE CUTTING SHUT OFF VALVE as disclosed in the above mentioned application for the term of 20 years from the 1<sup>st</sup> day of January 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 19/08/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी -** इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जनवरी 2017 के पहले दिन को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देना होगा।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 1<sup>st</sup> day of January 2017 and on the same day in every year thereafter.



## VSSC

215

**A Process for Producing Carbon-Carbon Composite Through Film Boiling Chemical Vapour Infiltration**

363869

This invention relates to a process for producing uniformly densified carbon-carbon composite through film boiling chemical vapour infiltration (FB-CVI) technique. As per the disclosed process the heat loss during FB-CVI process is reduced and homogenous densification is achieved.





क्रमांक : 044128890  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	363869
आवेदन सं. / Application No.	:	202041000839
फाइल करने की तारीख / Date of Filing	:	08/01/2020
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Jhon Paul 2.Sathian K 3.Krishnakumar G 4.Rajarajan A 5.T Jayachandran

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित A PROCESS FOR PRODUCING CARBON-CARBON COMPOSITE THROUGH FILM BOILING CHEMICAL VAPOUR INFILTRATION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 8th day of January 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR PRODUCING CARBON-CARBON COMPOSITE THROUGH FILM BOILING CHEMICAL VAPOUR INFILTRATION as disclosed in the above mentioned application for the term of 20 years from the 8th day of January 2020 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 31/03/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट की नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 8th day of January 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8th day of January 2022 and on the same day in every year thereafter.





## VSSC

216 Electrostatic Pick Pen

369991

The present invention is a tool to pick and place thin wires, foils or any such thin objects operating on the principle of electro static charge induced in materials. The proposed tool is for picking and placing nichrome bridge wires weighing approximately 200 $\mu$ g, during bridge wire preparation and cryogenic initiator wire welding process. The picking of the object is done with a statically charged teflon tip. This tool doesn't require any power, vacuum or air to operate. The static charge at the tip of the tool is retained by rubbing the tip against a white paper strip occasionally. The object picked up is released by pushing it with a rubber tipped spring loaded spindle sliding over the teflon tip. The rubber covered tip of the sliding spindle is practically neutral towards the nichrome material. It is a very compact tool with a spring loaded material release mechanism operated with a push knob. No fasteners are used in this assembly. All the associated components are assembled together with threaded joints and fully concealed with a good aesthetic appearance.



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PATENT CERTIFICATE  
(Rule 74 Of The Patents Rules)

क्रमांक : 044131195  
SL No :



पेटेंट सं. / Patent No. : 369991  
आवेदन सं. / Application No. : 1921/CHE/2014  
फाइल करने की तारीख / Date of Filing : 11/04/2014  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.Aliyas.A.V. 2.Ravi.K.R

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित ELECTROSTATIC PICK PEN नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख 11th day of April 2014 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ELECTROSTATIC PICK PEN as disclosed in the above mentioned application for the term of 20 years from the 11th day of April 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 23/06/2021  
Date of Grant :

पेटेंट नियंत्रक  
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 11th day of April 2016 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
Note - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 11th day of April 2016 and on the same day in every year thereafter.



## LPSC

217


**A Telescopic Precision and Chatter Free Thread Tapping System**

405781


The invention relates to a telescopic precision and chatter free thread tapping system. This system includes a telescopic tap shank provided with a square profile projection with cutting edges to operate a work piece, a tap wrench to mechanically couple a telescopic tap shank to a drill chuck to firmly hold the telescopic tap shank, a guiding sleeve provided with the drill chuck to receive the telescopic tap shank in the forward end of the guiding sleeve and an aperture for slidably engaging the telescopic tap shank in the rearward end of the guiding sleeve. The present subject matter further mentions that the telescopic tap shank can be inserted in the guiding sleeve to its maximum in a way that the spindle can be locked to arrest the up and down movement of the spindle to result in precise and chatter free thread tapping system. The present invention advantageously facilitates a telescopic precision and chatter free thread tapping system finding its application in fields such as automotive, ancillary, fabrication, aerospace, and the like.








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PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

**भारत सरकार  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)**


क्रमांक : 044144487  
SL No :



पेटेंट सं. / Patent No.	:	405781
आवेदन सं. / Application No.	:	202241010022
फाइल करने की तारीख / Date of Filing	:	24/02/2022
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.B. Sathis Kumar 2.VARKEY, Francis 3.K J, Raju 4.KUNNOTH, Surendran

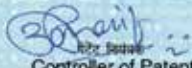
प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A TELESCOPIC PRECISION AND CHATTER FREE THREAD TAPPING SYSTEM नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2022 के चौबीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A TELESCOPIC PRECISION AND CHATTER FREE THREAD TAPPING SYSTEM as disclosed in the above mentioned application for the term of 20<sup>th</sup> day of February 2022 in accordance with the provisions of the Patents Act, 1970.



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PATENTS | DESIGNS | TRADE MARKS  
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अनुदान की तारीख : 05/09/2022  
Date of Grant :



Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, फरवरी 2024 के चौबीसवें दिन को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24<sup>th</sup> day of February 2024 and on the same day in every year thereafter.



## VSSC

218

Novel Inhibition Composition for Solid Rocket Motors

406246

The present invention relates to development of a novel inhibition composition which is non-hazardous and non-carcinogenic and provides increased tensile strength for use in solid rocket motors. The system has wide application in the space and defence sectors in the area of solid propellants.

Inhibition systems are used worldwide in solid rocket motors of launch vehicles and ballistic missiles. Processing and application of an inhibition system to inhibit the said surfaces of solid propellant grain without any health hazard and at the same time providing a robust composition with increased tensile strength is an imperative demand of solid propellant industry.





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**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044144650  
SL No :



पेटेंट सं. / Patent No.	:	406246
आवेदन सं. / Application No.	:	202141008341
फाइल करने की तारीख / Date of Filing	:	27/02/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Ratheesh Sahadevan 2.Shaik Mujeeb 3.Bijeesh Chinnangath Asokan 4.SBM Guruvayurappan 5.Preethakumari Vijayamma 6.Suraj Sudhi 7.Muraleekrishnan Ramachandra Sharma 8.Elizabeth John

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **NOVEL INHIBITION COMPOSITION FOR SOLID ROCKET MOTORS** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2021 के सत्ताईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **NOVEL INHIBITION COMPOSITION FOR SOLID ROCKET MOTORS** as disclosed in the above mentioned application for the term of 20 years from the 27<sup>th</sup> day of February 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 09/09/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, फरवरी 2023 के सत्ताईसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 27<sup>th</sup> day of February 2023 and on the same day in every year thereafter.





## VSSC

219 | A Room-temperature Curable

407445

A room-temperature curable, high and low temperature withstanding, high glass transition temperature, low-outgassing epoxy structural adhesive composition, characterized in that the 5 composition comprising:

- (a) an epoxy resin in a range of 20% to 90% by weight of the composition;
- (b) a polyimide resin in a range of 0.01% to 40% by weight of the epoxy resin; and
- (c) a curative agent comprising a curing agent with a functional group selected from  $-NH_2$ ,  $-NH$ ,  $-OH$ ,  $-COOH$ ,  $SO_3H$ ,  $-CONH_2$ ,  $-CONHR$ , or combinations thereof; wherein R is an alkyl group.



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**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044145019  
SL No :



पेटेंट सं. / Patent No.	:	407445
आवेदन सं. / Application No.	:	202141056676
फाइल करने की तारीख / Date of Filing	:	07/12/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.ROSHITH KURUPPATHPARAMBIL ROSHAN 2.TEMINA MARY ROBERT 3.SATHEESH KUMAR BALAKRISHNA PILLAI 4.BIPIN BABU 5.SANTHOSH KUMAR KALAMBLAYIL SANKARANARAYANAN 6.DONA MATHEW

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित ROOM-TEMPERATURE CURABLE, HIGH AND LOW TEMPERATURE WITHSTANDING, LOW-OUTGASSING EPOXY STRUCTURAL ADHESIVE COMPOSITION AND ITS PREPARATION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2021 के सातवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ROOM-TEMPERATURE CURABLE, HIGH AND LOW TEMPERATURE WITHSTANDING, LOW-OUTGASSING EPOXY STRUCTURAL ADHESIVE COMPOSITION AND ITS PREPARATION as disclosed in the above mentioned application for the term of 20 years from the 7<sup>th</sup> day of December 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 23/09/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2023 के सातवें दिन को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7<sup>th</sup> day of December 2023 and on the same day in every year thereafter.



## URSC

220

**A System and a Method for Measuring Mass Properties of Objects**

407621

A system for measuring mass properties of an object is disclosed. The system comprises a base member and a platform supported on the base member. The base member is adapted to movably support the object. Further, the system comprises an interface adaptor disposed on the platform and adapted to movably mount the object on the platform. The interface adaptor is adapted to be rotated about a vertical axis with respect to the platform. The system comprises a bearing assembly disposed below the platform and adapted to oscillate the platform about a horizontal pivot axis to calculate at least one of a moment of inertia of a total mass, suspended on the bearing assembly, about the horizontal pivot axis and a moment of inertia of the total mass about an axis passing through a centre of gravity of the total mass. The interface adaptor is rotated about the vertical axis to calculate at least one of three-dimensional coordinates associated with the centre of gravity.





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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044145072  
SL No :



पेटेंट सं. / Patent No.	:	407621
आवेदन सं. / Application No.	:	202241015543
फाइल करने की तारीख / Date of Filing	:	21/03/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.P SHRAVAN KUMAR 2.M SRI LAKSHMAN

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A System And A Method For Measuring Mass Properties Of Objects नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2022 के इक्कीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A System And A Method For Measuring Mass Properties Of Objects as disclosed in the above mentioned application for the term of 20 years from the 21<sup>st</sup> day of March 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 26/09/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2024 के इक्कीसवें दिन को और उसके पश्चात प्रत्येक वर्ष से उसी दिन देय होगी।  
**Note** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21<sup>st</sup> day of March 2024 and on the same day in every year thereafter.



## NRSC

221

**Dual Polarised, S and X Band Monopulse Feed for Tracking Leo Satellites**

409231

This invention relates to a dual polarized S and X band monopulse feed system (100) comprises of: - S band radiating element (102), - X band radiating element (104), - four septum polarizers (106), - two monopulse X band comparators (108-1, 108-2), - two monopulse S band comparators (110-1, 110-2), - two monoscan converters, (114-1, 114-2), - four low Noise Amplifiers, first LNA (116-1), second LNA (116-2), third LNA (116-3) and the fourth LNA (116-4). The present invention also provides a novel method for generating dual polarized S and X band monopulse feed for tracking LEO satellites.





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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044145611  
SL No :



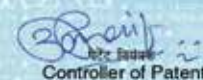
पेटेंट सं. / Patent No.	:	409231
आवेदन सं. / Application No.	:	3767/CHE/2012
फाइल करने की तारीख / Date of Filing	:	11/09/2012
पेटेटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.C.S. PADMAVATHY 2.M. SATYANARAYANA 3.J.G. KULKARNI 4.V. SREERAMULU 5.LAKSHMEESHA 6.V.V. SRINIVASAN

प्रमाणित किया जाता है कि पेटेटी को, उपरोक्त आवेदन में यथाप्रकटित DUAL POLARISED, S&X BAND MONOPULSE FEED FOR TRACKING LEO SATELLITES नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2012 के ग्यारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled DUAL POLARISED, S&X BAND MONOPULSE FEED FOR TRACKING LEO SATELLITES as disclosed in the above mentioned application for the term of 20 years from the 11<sup>th</sup> day of September 2012 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 18/10/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए शुल्क, यदि इसे बनाए रखा जाना है, सितम्बर 2014 के म्यादले दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगा।  
**Note** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 11<sup>th</sup> day of September 2014 and on the same day in every year thereafter.





## VSSC

222

**A Space Compatible Device for Locating Objects Deployed at Sea**

409447

Disclosed herein is a device for locating objects deployed at sea. The device includes an ejectable tethered space compatible device comprising an assembly (13) including a dye canister (19). A dye dispensing package (15-18) is provided inside the dye canister (19) where said dye is capable of being emitted in a controlled manner. As soon as splashdown is sensed, the canister is ejected at a particular angle. The assembly is tethered to a space capsule to ensure that the dye canister remains in the vicinity of the capsule, and, upon dispensing of the dye, a visible coloration of the emitted dye also remains in the vicinity of the space capsule.



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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044145702  
SL No :



पेटेंट सं. / Patent No.	:	409447
आवेदन सं. / Application No.	:	201641044568
फाइल करने की तारीख / Date of Filing	:	28/12/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Surbhi Baghotia 2.K P Venkateswaran 3.Damodaran P 4.Purushothaman P 5.M Premdas

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित SPACE COMPATIBLE DEVICE FOR LOCATING OBJECTS DEPLOYED AT SEA नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2016 के अट्टाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SPACE COMPATIBLE DEVICE FOR LOCATING OBJECTS DEPLOYED AT SEA as disclosed in the above mentioned application for the term of 20 years from the 28<sup>th</sup> day of December 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 20/10/2022  
Date of Grant :

*(Signature)*  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, दिसम्बर 2018 के अट्टाईसवें दिन को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 28<sup>th</sup> day of December 2018 and on the same day in every year thereafter.



## VSSC

223

**Method of Recycling Lead Dioxide Flakes and  
Electrochemical Cells made Thereof**

413324

The present invention discloses a novel method for recycling lead dioxide flakes and utilization of said flakes in the realization of electrochemical cell. Present invention provides a method for the efficient utilization of peeled-off lead dioxide flakes obtained from conventional perchlorate electrolyzers, as novel electrodes. These flakes are packed inside a cylindrical pipe to form an improved perchlorate cell. Above flakes can be either packed in random or can be converted to rod form by appropriate compaction methods based on the end use. The Present invention completely eliminates the requirement of costly substrates like titanium and associated undercoating. This method can improve the reaction rates of slow reactions like perchlorate formation, thereby leading to significant savings in energy.





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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044147129  
SL No :



पेटेंट सं. / Patent No.	:	413324
आवेदन सं. / Application No.	:	202241011709
फाइल करने की तारीख / Date of Filing	:	03/03/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.SANANTH HARIHARA MENON 2.MADHU GOPALAKRISHNA PILLAI 3.ANIL KUMAR PLACHERY SIVAN 4.JOJO MATHEW 5.JAYAPRAKASH JANARDHANAN NAIR 6.JAYAPRAKASH JANARDHANAN NAIR

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकरित METHOD OF RECYCLING LEAD DIOXIDE FLAKES AND ELECTROCHEMICAL CELLS MADE THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2022 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF RECYCLING LEAD DIOXIDE FLAKES AND ELECTROCHEMICAL CELLS MADE THEREOF as disclosed in the above mentioned application for the term of 20 years from the 3<sup>rd</sup> day of March 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 01/12/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2024 के तीसरे दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 3<sup>rd</sup> day of March 2024 and on the same day in every year thereafter.



## VSSC

224

**A system for detecting and isolating faults in a Flush Air Data System (FADS)**

416296

Comprising: a plurality of pressure ports flushed to a nose cap of a space vehicle in crucifix form; at least three pressure transducers connected to each pressure port by a pneumatic tube for measuring surface pressure from said plurality of pressure ports; a plurality of FADS Sensor Interface Modules (FSIM) each connected to said pressure transducers; a DSP processor based FADS electronics connected to the said FSIM, and a Mission Management Computer (MMC) connected to the output of the FADS electronics through direct as well as cross strapped connection.





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पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044148117  
SL No :



पेटेंट सं. / Patent No.	:	416296
आवेदन सं. / Application No.	:	201841019119
फाइल करने की तारीख / Date of Filing	:	22/05/2018
पेटेटी / Patentee	:	Indian Space Research Organization
आविष्कारक (जहाँ लागू हों) / Inventor(s)	:	1.Dr. Jayakumar M 2.Smt. Finitha KC 3.Shri Remesh N 4.Smt. Vidya SB 5.Shri Shashi Krishna 6.Shri Jayanta Dhaoya 7.Shri Abdul Samad AK 8.Shri Ravikumar C et al.

प्रमाणित किया जाता है कि पेटेटी को, उपरोक्त आवेदन में यथाप्रकटित SYSTEM AND METHOD FOR DETECTING FAULTY PRESSURE MEASUREMENTS IN FLUSH AIR DATA SYSTEM USING PRESSURE PATTERNS AMONG ADJACENT PORTS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मई 2018 के बाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SYSTEM AND METHOD FOR DETECTING FAULTY PRESSURE MEASUREMENTS IN FLUSH AIR DATA SYSTEM USING PRESSURE PATTERNS AMONG ADJACENT PORTS as disclosed in the above mentioned application for the term of 20 years from the 22<sup>nd</sup> day of May 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 30/12/2022  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मई 2020 के बाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22<sup>nd</sup> day of May 2020 and on the same day in every year thereafter.





## VSSC

225

**Process for Crystallisation and Separation of Sodium Perchlorate from Electrolysed Sodium Chlorate Solution**

416984

The invention is in the field of production of sodium perchlorate and relates to a process for production of sodium perchlorate crystals from electrolysed sodium chlorate solution in batch mode of processing.

Sodium perchlorate is one of the major raw materials required for the manufacture of ammonium perchlorate, a solid oxidizer used in satellite launch vehicles. Sodium perchlorate is produced by electrolysis of sodium chlorate solution using lead dioxide anodes and SS 316 L cathodes, in batch mode. During the conversion of sodium chlorate to sodium perchlorate, a higher desired perchlorate current efficiency of about 65-75% is obtained till the concentration of sodium chlorate reaches 100-120 gm/liter. Beyond this, current efficiency drops down to 15-20% as the concentration comes down below 100 gm/liter. This demands a need to identify a process which can improve the process efficiency and thereby the yield of sodium perchlorate produced.



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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044148392  
SL No :



पेटेंट सं. / Patent No.	:	416984
आवेदन सं. / Application No.	:	202241012669
फाइल करने की तारीख / Date of Filing	:	08/03/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जब लागू हो) / Inventor(s)	:	1.SANANTH HARIHARA MENON 2.JITHA POKKATTU THOMAS 3.SANGEETA SIVANATH 4.SAMJITH MUTHANDASSERIL GOPINATH 5.JUNA PADINJARE KUZHIMAYIL 6.JAMES JOSEPH VALIYAPARAMBIL 7.JOJO MATHEW 8.JAYAPRAKASH JANARDHANAN NAIR

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित PROCESS FOR CRYSTALLISATION AND SEPARATION OF SODIUM PERCHLORATE FROM ELECTROLYSED SODIUM CHLORATE SOLUTION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2022 के आठवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS FOR CRYSTALLISATION AND SEPARATION OF SODIUM PERCHLORATE FROM ELECTROLYSED SODIUM CHLORATE SOLUTION as disclosed in the above mentioned application for the term of 20 years from the 8<sup>th</sup> day of March 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 06/01/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट की नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, मार्च 2024 के आठवें दिन को और उसके पश्चात प्रत्येक वर्ष से इसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8<sup>th</sup> day of March 2024 and on the same day in every year thereafter.



## URSC

226

**Novel Technique for Detecting Inner Layer Misalignment and Achieving Best Fit Registration in Multilayer PCB**

419063

The present invention relates to multilayer printed circuit boards (PCBs) and method of creating multilayer circuit boards. In particular, the present invention relates to methods for forming multilayer circuit boards and detecting inner layer misalignment and compensating for achieving best-fit registration in the multilayer PCBs.

The present-day advanced electronics demand for high reliability features in the complex multilayer PCBs, satisfying the stringent technical specifications with tighter registration tolerances in order to comply for the highest quality requirements of Class-3A IPC standards. Due to increased densities in miniaturized electronics packaging, the usage of fine pitch state of the art devices has been necessitated with high density electronic packaging. This requirement has resulted in downsizing of multilayer PCBs with increased functionalities within the minimum available real estate. Thereby, the usage of fine-pitch advanced components has become most essential and hence the higher density multilayer PCBs have been evolved at URSC with 0.4 mm and 0.2 mm diameter fine-via (plated 15 through holes) interconnections. This downsizing of the interconnecting vias resulted in decreased pad diameters for effective utilization of PCB real estate in order to package with advanced fine pitch electronic devices.





क्रमांक : 044149034  
SL No :



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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 419063  
आवेदन सं. / Application No. : 202241038586  
फाइल करने की तारीख / Date of Filing : 05/07/2022  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : C. Hanumanth Rao

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित NOVEL TECHNIQUE FOR DETECTING INNER LAYER MISALIGNMENT AND ACHIEVING BEST FIT REGISTRATION IN MULTILAYER PCB नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जुलाई 2022 के पांचवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled NOVEL TECHNIQUE FOR DETECTING INNER LAYER MISALIGNMENT AND ACHIEVING BEST FIT REGISTRATION IN MULTILAYER PCB as disclosed in the above mentioned application for the term of 20 years from the 5<sup>th</sup> day of July 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 24/01/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जुलाई 2024 के पांचवें दिन को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 5<sup>th</sup> day of July 2024 and on the same day in every year thereafter.



## VSSC

227

**Method of Producing High Permittivity, Low Loss and Thermally Stable Dielectric Ceramics**

421647

The invention is in the field of electronic ceramics used in microwave devices. The invention further relates to the method of producing dielectric ceramics which possess a combination of desired values of permittivity, dielectric loss and temperature coefficient of resonator frequency. The dielectric ceramics of the invention can be used as substrates for antennas used in GPS, IRNSS, GSAT-6 etc.,

Dielectric ceramic materials are widely used in the microwave region with practical application in dielectric waveguides, microwave communication devices like filters, oscillators, duplexers, radars etc. These microwave dielectric ceramics are mainly used for resonators, and the properties required for resonators are as follows. Namely, (1) since the wavelength is shortened, the dielectric constant ( $\epsilon_r$ ) should be large so as to satisfy the requirement of reduction of the size, (2) the dielectric loss at a high frequency should be small.  $Q_f$  which is a function of inverse of dielectric loss is accepted as a parameter to compare various dielectrics. While high  $\epsilon_r$  helps in reducing the size of components, high  $Q_f$  helps in reducing the energy dissipated within the dielectric ceramic. (3) the change of the resonance frequency according to the temperature, that is, the temperature dependency of the dielectric constant, should be small and stable. In other words, the temperature coefficient of resonator frequency ( $\tau_f$ ) needs to be zero for an ideal dielectric ceramic used for the said applications.





क्रमांक : 044149903  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	421647
आवेदन सं. / Application No.	:	1856/CHE/2014
फाइल करने की तारीख / Date of Filing	:	08/04/2014
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Harihara Iyer Sreemoolanadhan 2.Basheer Masin 3.Chervuvathoor Simon Wesley 4.Sharad Chandra Sharma 5.Koshy Munjanattu George

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित METHOD OF PRODUCING HIGH PERMITTIVITY, LOW LOSS AND THERMALLY STABLE DIELECTRIC CERAMICS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अप्रैल 2014 के आठवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD OF PRODUCING HIGH PERMITTIVITY, LOW LOSS AND THERMALLY STABLE DIELECTRIC CERAMICS as disclosed in the above mentioned application for the term of 20 years from the 8<sup>th</sup> day of April 2014 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 14/02/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी -** इस पेटेंट की नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अप्रैल 2016 के आठवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 8<sup>th</sup> day of April 2016 and on the same day in every year thereafter.





## VSSC

228

**Triazole Crosslinked High Burn Rate Defect Free Solid Propellants Based on Polymeric Azide Binder**

422282

The present application relates to the field of propellant technology and discloses composite solid propellant compositions which are based on an azide polymer crosslinked through triazoles as binder, and a process for their preparation. The propellant compositions provided herein are defect free, void free and have a high burn rate.

Solid propellants are used extensively in the aerospace industry and are a preferred method of powering most missiles and rockets for military, commercial, and space applications. Solid rocket motor propellants have become widely accepted because they are relatively simple to manufacture and use, and because they have excellent performance characteristics.



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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044150128  
SL No :



पेटेंट सं. / Patent No.	:	422282
आवेदन सं. / Application No.	:	698/CHE/2015
फाइल करने की तारीख / Date of Filing	:	13/02/2015
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Sasidharakurup Rishmi 2.Sheela Gayathri 3.Chethrappilly Padmanabhan Reghunadhan Nair

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित TRIAZOLE CROSSLINKED HIGH BURN RATE DEFECT FREE SOLID PROPELLANTS BASED ON POLYMERIC AZIDE BINDER नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2015 के तेरहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled TRIAZOLE CROSSLINKED HIGH BURN RATE DEFECT FREE SOLID PROPELLANTS BASED ON POLYMERIC AZIDE BINDER as disclosed in the above mentioned application for the term of 20 years from the 13<sup>th</sup> day of February 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/02/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, फरवरी 2017 के तेरहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 13<sup>th</sup> day of February 2017 and on the same day in every year thereafter.



## ADRIN

229

**A System and Method of Acquiring Data from Multiple Cartosat Satellites Simultaneously, Generation and Visualisation of Level 1A Products in Real Time**

422594

An acquisition system interface for receiving of LVDS data streams to a host system (212) in real-time simultaneously from demodulators (206, 208) of one or more IRS CARTOSAT satellites, each LVDS data streams containing I and Q channels having maximum data rates of 200Mbps, the system comprising: i. one or more COTS (Commercially Off-The Shelf) high speed data acquisition/playback cards (502) into a host system memory (506), wherein the host system memory is adapted into variable sizes for each LVDS data stream to facilitate real-time processing of incoming data streams; and ii. plurality of generic host APIs (510) for dynamic configuration of the one or more acquisition cards to acquire data from the one or more IRS CARTOSAT satellites to enable real-time processing. Densification is achieved.





क्रमांक : 044150244  
SL No :



भारत सरकार  
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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	422594
आवेदन सं. / Application No.	:	526/CHE/2013
फाइल करने की तारीख / Date of Filing	:	07/02/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANIZATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.K. PRAMOD KUMAR 2.P. MAHENDRA 3.R. USHA DEVI 4.V. RAMAKRISHNA REDDY 5.T. TIRUPATI 6.A. AKILAN 7.ANURADHA RATHOUR 8.N. RAVI et al. et al. et al. et al. et al. et al. et al. et al.

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A SYSTEM AND METHOD OF ACQUIRING DATA FROM MULTIPLE CARTOSAT SATELLITES SIMULTANEOUSLY, GENERATION AND VISUALISATION OF LEVEL 1A PRODUCTS IN REAL TIME नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2013 के सातवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SYSTEM AND METHOD OF ACQUIRING DATA FROM MULTIPLE CARTOSAT SATELLITES SIMULTANEOUSLY, GENERATION AND VISUALISATION OF LEVEL 1A PRODUCTS IN REAL TIME as disclosed in the above mentioned application for the term of 20 years from the 7<sup>th</sup> day of February 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 21/02/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, फरवरी 2015 के सातवें दिन की ओर उसके पर्यन्त प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7<sup>th</sup> day of February 2015 and on the same day in every year thereafter.



## SAC

230

**Novel Spraying Technique for the Improvement in Electrical Conductivity of CFRP**

423370

The present invention generally relates to composite materials, and particularly 5 relates to a process for fabricating Carbon Fibre-Reinforced Plastics infused with Carbon Nanotubes.

Carbon Fibre reinforced plastics (CFRP) are strong, durable, and light-weight 10 fiber-reinforced plastics that contain carbon fibers. CFRPs are custom made to fabricate and commonly used wherever a high strength-to-weight ratio and stiffness (rigidity) are required, such as aerospace, superstructures of ships, automotive, civil engineering, sports equipment, and an increasing number of consumer and technical applications. CFRPs have an array of prospects and 15 capabilities due to its favorable property of specific stiffness. However, one of the major disadvantages of the CFRP is a having significantly lower electrical conductivity compared to metals. The lower electrical conductivity directly affects the current carrying capability, heat dissipation, electromagnetic shielding and surface treatment process. Additionally, achieving surface electrical 20 conductivity (in-plane) and bulk electrical conductivity (through-thickness) is difficult for a CFRP, in comparison to stainless steel or aluminum, which are commonly used for fabricating components for aerospace applications.





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**पेटेंट कार्यालय**  
**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044150478  
SL No :



पेटेंट सं. / Patent No.	:	423370
आवेदन सं. / Application No.	:	202241032095
फाइल करने की तारीख / Date of Filing	:	04/06/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Dhaval A. Vartak 2.Yogesh S. Ghotekar 3.Nandini A. Deshpande 4.Sharad Shukla 5.Nitinkumar Sharma 6.Vimal M. Shah 7.Raghava Rao 8.Dr. B. S. Munjal

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित NOVEL SPRAYING TECHNIQUE FOR THE IMPROVEMENT IN ELECTRICAL CONDUCTIVITY OF CFRP नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2022 के चौथे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled NOVEL SPRAYING TECHNIQUE FOR THE IMPROVEMENT IN ELECTRICAL CONDUCTIVITY OF CFRP as disclosed in the above mentioned application for the term of 20 years from the 4<sup>th</sup> day of June 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 27/02/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जून 2024 के चौथे दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देना होगा।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 4<sup>th</sup> day of June 2024 and on the same day in every year thereafter.





## URSC

231

**Mechanically Generated Blind-Via PCB Process Technology for High Density Interconnect (HDI) Electronics**

422520

A method for accomplishing high density interconnections in electronics packaging with standard through-hole Printed Circuit Board (PCB) process technology, without using laser blind-vias (as in case of conventional HDI PCB), the method comprising: establishing high-density interconnections in the outer layers of the multilayer PCB 100 with the adjacent and penultimate layers using conventional drill-plate and etch through hole technology with the layer pairs; extending the interconnections with the common plated through holes 106 of multilayer PCB 100, without adopting complex laser drilled blind vias; shifting of fineline pattern from the external layers to the penultimate internal layers and interconnecting the adjacent electrical layers through interlayer (pair) blind-vias 102; filling of outer layer plated vias using a special high-Tg epoxy prepreg with microdispersed ceramic filler system.



क्रमांक : 044150212  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 422520  
आवेदन सं. / Application No. : 202241020968  
फाइल करने की तारीख / Date of Filing : 07/04/2022  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : RAO, C. Hanumanth

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित MECHANICALLY GENERATED BLIND-VIA PCB PROCESS TECHNOLOGY FOR HIGH DENSITY INTERCONNECT (HDI) ELECTRONICS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अप्रैल 2022 के सातवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुवत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled MECHANICALLY GENERATED BLIND-VIA PCB PROCESS TECHNOLOGY FOR HIGH DENSITY INTERCONNECT (HDI) ELECTRONICS as disclosed in the above mentioned application for the term of 20 years from the 7<sup>th</sup> day of April 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 21/02/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, अप्रैल 2024 के सातवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देब होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 7<sup>th</sup> day of April 2024 and on the same day in every year thereafter.



## URSC

232

**A Process for Achieving High Emittance and High Absorptance Coating on Additive Manufactured Alloy**

425670

The present disclosure relates, in general, to the electrochemical oxidation (EO) process on additive manufactured (AM) alloy, and more specifically, relates to a process for achieving high emittance and high absorptance coating on the additive manufactured alloy.

Spacecraft experience intense thermal stress in space. When the spacecraft is in eclipse condition, it will go to deep cold space and when it is exposed to the sun, it encounters very high temperatures. This creates a thermal gradient of a few hundred degrees centigrade. However, various subsystems can be functional in narrow temperature ranges. Thus, it is necessary to maintain an on-orbit operational temperature for the different components of the spacecraft. Passive thermal control using surface coatings will ensure the right operational thermal environment by utilizing the optical properties of the surface. Reliable thermal equilibrium can be achieved by modifying high solar absorptance  $\alpha_S$  and high infrared emittance  $\epsilon_{IR}$  of the surface. Electrochemical coatings play a major role in tailoring the thermal control of the spacecraft by modifying the thermooptical properties of the surface. The identification of optical properties of thermal control coatings and ensuring their stability in the space environment during the entire mission period is critical for the design of packages for optimum performance. Most of the electronic packages of the spacecraft are fabricated with aluminum alloys, these packages are coated with high emittance oxide coatings for effective radiative coupling across the components.





क्रमांक : 044151334  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	425670
आवेदन सं. / Application No.	:	202241051873
फाइल करने की तारीख / Date of Filing	:	12/09/2022
पेटेटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.RAHUL GHOSH 2.KAVITHA M K 3.HARI KRISHNA THOTA 4.ARJUN DEY 5.A RAJENDRA 6.UMA RANI R

प्रमाणित किया जाता है कि पेटेटी को, उपरोक्त आवेदन में व्यापकतः A PROCESS FOR ACHIEVING HIGH EMITTANCE AND HIGH ABSORPTANCE COATING ON ADDITIVE MANUFACTURED ALLOY नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2022 के बारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A PROCESS FOR ACHIEVING HIGH EMITTANCE AND HIGH ABSORPTANCE COATING ON ADDITIVE MANUFACTURED ALLOY as disclosed in the above mentioned application for the term of 20 years from the 12<sup>th</sup> day of September 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/03/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी -** इस पेटेंट की नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, सितम्बर 2024 के बारहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उन्नीस दिन होनी चाहिए।  
**Note -** The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 12<sup>th</sup> day of September 2024 and on the same day in every year thereafter.



## SAC

233

**Multiplexed Digital Modulator for High Throughput Satellites and its Methods Thereof**

425798

An acquisition system interface for receiving of LVDS data streams to a host system (212) in real-time simultaneously from demodulators (206, 208) of one or more IRS CARTOSAT satellites, each LVDS data streams containing I and Q channels having maximum data rates of 200 Mbps, the system comprising: i. one or more COTS (Commercially Off-The Shelf) high speed data acquisition/playback cards (502) into a host system memory (506), wherein the host system memory is adapted into variable sizes for each LVDS data stream to facilitate real-time processing of incoming data streams; and ii. plurality of generic host APIs (510) for dynamic configuration of the one or more acquisition cards to acquire data from the one or more IRS CARTOSAT satellites to enable real-time processing. Densification is achieved.





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THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044151375  
SL No :



पेटेंट सं. / Patent No.	:	425798
आवेदन सं. / Application No.	:	202141042742
फाइल करने की तारीख / Date of Filing	:	21/09/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.Akshay khare 2.Rajat Arora 3.Sanjay D. Mehta 4.TVS Ram

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित MULTIPLEXED DIGITAL MODULATOR FOR HIGH THROUGHPUT SATELLITES AND ITS METHODS THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2021 के इक्कीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled MULTIPLEXED DIGITAL MODULATOR FOR HIGH THROUGHPUT SATELLITES AND ITS METHODS THEREOF as disclosed in the above mentioned application for the term of 20 years from the 21<sup>st</sup> day of September 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 20/03/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, सितम्बर 2023 के इक्कीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21<sup>st</sup> day of September 2023 and on the same day in every year thereafter.





## URSC

234

**A method for manufacturing a regular hexagonal honeycomb core using composite materials**

425897

Comprising the steps of: arranging a plurality of metallic tools (10) in an array of rows within a frame fixture (50); placing and interspersing a layer of un-cured composite prepreg material (20) in between each row of metallic tools (10); compressing the composite prepreg material (20) against the metallic tools (10) in the frame fixture (50); successively repeating the steps of arranging, interspersing and compressing to obtain a desired assemblage of metallic tools (10) interspersed with the composite prepreg material.



भारत सरकार  
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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044151402  
SL No :



पेटेंट सं. / Patent No.	:	425897
आवेदन सं. / Application No.	:	201641021367
फाइल करने की तारीख / Date of Filing	:	22/06/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Venkatesh Prasad H A 2.Renji 3.Poomani D 4.Subba Rao P 5.Kotresh M 6.Satheesh R 7.Kumara V 8.Jayakumar B C

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित METHOD FOR MANUFACTURING HEXAGONAL HONEYCOMB CORE USING COMPOSITE MATERIALS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2016 के बाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHOD FOR MANUFACTURING HEXAGONAL HONEYCOMB CORE USING COMPOSITE MATERIALS as disclosed in the above mentioned application for the term of 20 years from the 22<sup>nd</sup> day of June 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 20/03/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी -** इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, जून 2018 के बाईसवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 22<sup>nd</sup> day of June 2018 and on the same day in every year thereafter.



## URSC

235

**A Reflector Assembly and a Method of Constructing Thereof**

427295

The present disclosure generally relates to Deep Space Network (DSN) class of reflector systems, and more particularly, to a die for forming a reflector panel for a DSN class of reflector system. Deep Space Network (DSN) is an international network of communication facility for communicating with spacecrafts in the deep space. For communicating with such spacecrafts, there is a requirement of DSN class of antennas which are installed at various places on the Earth. The DSN class antennas have large sized parabolic reflectors and are made up of multiple reflector panels. Large sized parabolic reflectors are also used for various other applications such as in light collectors, solar energy collectors, directional microphones, detector systems, etc., and are also made up of multiple reflector panels.





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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044151839  
SL No :



पेटेंट सं. / Patent No.	:	427295
आवेदन सं. / Application No.	:	202241044948
फाइल करने की तारीख / Date of Filing	:	05/08/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.BALAREDDY, Pramod B 2.DHUPPE, Mahesh 3.BISWAS, Barun 4.KUMAR, Varun 5.SUNIL, Cenna 6.DATTA, G Narahari 7.KANDAGAL, S B 8.SRINIVASAN, V V et al.

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A REFLECTOR ASSEMBLY AND A METHOD OF CONSTRUCTING THEREOF नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2022 के पांचवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A REFLECTOR ASSEMBLY AND A METHOD OF CONSTRUCTING THEREOF as disclosed in the above mentioned application for the term of 20 years from the 5<sup>th</sup> day of August 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 28/03/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अगस्त 2024 के पांचवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 5<sup>th</sup> day of August 2024 and on the same day in every year thereafter.



## URSC

236

**Dual-lever rigidisation mechanism with a self-hold down  
Feature for autonomous docking of spacecraft**

428216

The present disclosure relates, in general, to a spacecraft docking, and more specifically, relates to a dual-lever rigidisation mechanism with a self hold down feature for autonomous docking of spacecraft. International Berthing and Docking Mechanism (IBDM) developed by other space agencies constitutes a hard docking system, which makes the structural pressurized connection between the two spacecrafts and is responsible for the service connections and the nominal and emergency separation functions. Post retraction, a series of latches are engaged which establish a structural connection between the IBDM and the vehicle. Each IBDM includes 12 latches that are attached in a tangential direction to the outside of the tunnel wall shown in FIG. 1. Each latch has its 15 proper motor, gearbox, and adjustable compliance element.





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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044152167  
SL No :



पेटेंट सं. / Patent No.	:	428216
आवेदन सं. / Application No.	:	202241051538
फाइल करने की तारीख / Date of Filing	:	09/09/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
अविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.ABHINANDAN KAPOOR 2.MADISSETTY VENKATA RAMANA 3.ABHISHEK KUMAR 4.VIJAY SHANKAR RAI 5.HUVINAHALLY NANJUNDA SHARMA SURESHA KUMAR 6.ASWATHANARAYANARAO SHANKARA 7.KARMAR PRAKASHA 8.GIRISH ANANTAPUR 9. SATTIBABU MADDELA

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित DUAL-LEVER RIGIDISATION MECHANISM WITH A SELF-HOLD DOWN FEATURE FOR AUTONOMOUS DOCKING OF SPACECRAFT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2022 के नौवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled DUAL-LEVER RIGIDISATION MECHANISM WITH A SELF-HOLD DOWN FEATURE FOR AUTONOMOUS DOCKING OF SPACECRAFT as disclosed in the above mentioned application for the term of 20 years from the 9<sup>th</sup> day of September 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 03/04/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, सितम्बर 2024 के नौवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 9<sup>th</sup> day of September 2024 and on the same day in every year thereafter.





## SAC

237

**Broadband Sine-Square Profiled Slot Coupled  
Ortho Mode Transducer**

428821

The present invention, in general, relates to an Ortho Mode Transducer for extracting a signal of two orientation of lower frequency band from a guide conveying information in two orthogonal orientations – each containing lower frequency band and upper frequency band. More particularly, the present invention relates to a sine-square profiled slot coupled Ortho Mode Transducer in waveguide configuration which uses a sine-square profile in coupling region and in coupling slot to achieve broadband performance ~ 35 % bandwidth using sinesquare slot coupling.



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**THE PATENT OFFICE**  
**पेटेंट प्रमाणपत्र**  
**PATENT CERTIFICATE**  
(Rule 74 of The Patents Rules)

क्रमांक : 044152393  
SL No :



पेटेंट सं. / Patent No.	:	428821
आवेदन सं. / Application No.	:	202141021023
फाइल करने की तारीख / Date of Filing	:	10/05/2021
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.Jigar Pandya 2.Sagi Sravan Kumar 3.Milind Mahajan 4.Khagindra Kumar Sood 5.Rajeev Jyoti 6.Rajesh Patel

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **BROADBAND SINE-SQUARE PROFILED SLOT COUPLED ORTHO MODE TRANSDUCER** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मई 2021 के दसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुवत किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **BROADBAND SINE-SQUARE PROFILED SLOT COUPLED ORTHO MODE TRANSDUCER** as disclosed in the above mentioned application for the term of 20 years from the 10<sup>th</sup> day of May 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 12/04/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मई 2023 के दसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 10<sup>th</sup> day of May 2023 and on the same day in every year thereafter.



## URSC

238

**Peripheral Low Impact Retraction and Separation Mechanism with Self-Hold Down Feature for Autonomous Docking of Spacecraft**

429030

The present disclosure relates to a system for facilitating extension and retraction operations, the system includes a telescopic assembly located at the periphery of a housing. The telescopic assembly includes at least three cylindrical hollow tubes spaced equiangularly about the housing. Each hollow tube coupled to a ball assembly and is selectively movable between a retracted position and extended position. The ball assembly includes one or more profiled grooves that accommodate spherical balls and a leaf spring coupled to the spherical balls to provide a force such that a ball retainer with the spherical balls is movable between the extreme positions and actuated by a motorized actuator to facilitate retraction and extended position.





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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044152472  
SL No :



पेटेंट सं. / Patent No.	:	429030
आवेदन सं. / Application No.	:	202241055227
फाइल करने की तारीख / Date of Filing	:	27/09/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.ABHINANDAN KAPOOR 2.MADISSETY VENKATA RAMANA 3.ABHISHEK KUMAR 4.HUVINAHALLY NANJUNDA SHARMA SURESHA KUMAR 5.ASWATHANARAYANARAO SHANKARA 6.KARMAR PRAKASHA 7.GIRISH ANANTAPUR

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित PERIPHERAL LOW IMPACT RETRACTION AND SEPARATION MECHANISM WITH SELF-HOLD DOWN FEATURE FOR AUTONOMOUS DOCKING OF SPACECRAFT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2022 के सत्ताईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदित किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PERIPHERAL LOW IMPACT RETRACTION AND SEPARATION MECHANISM WITH SELF-HOLD DOWN FEATURE FOR AUTONOMOUS DOCKING OF SPACECRAFT as disclosed in the above mentioned application for the term of 20 years from the 27<sup>th</sup> day of September 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/04/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए बीस, यदि इसे बनाए रखा जाना है, सितम्बर 2024 के सत्ताईसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगा।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 27<sup>th</sup> day of September 2024 and on the same day in every year thereafter.



## URSC

239 Deployable Boom Assembly

429143

The present disclosure discloses a deployable boom assembly for spacecraft applications. More particularly, the present disclosure discloses a deployable boom assembly with a deployment unit for coordinated deployment of a plurality of boom segments.

Generally, a spacecraft employs various elements/payloads for example, reflectors, antenna arrays, sensors etc. to perform different specific functions from space. These elements have to be deployed away from the body of the spacecraft such that the components are protected from any kind of probable interference from the body of the spacecraft. Thus, deployable structures, especially a deployable boom assembly, helps in holding these elements, away from the body of the spacecraft in the space. This avoids any electrical disturbance caused by remanence of the body of the spacecraft. Further, the deployable boom segment assembly includes plurality of boom segments, where a coordinated and predictable movement of the plurality of boom segments are essential for complete deployment of the boom. This facilitates correct positioning of the elements on the plurality of boom segments. Moreover, coordinated opening of the boom from the plurality of boom segments ensures a lower deployment latch up moment and also ensures simpler ground test equipment. However, the spacecraft launcher imposes constraints on the boom from the plurality of boom segments withstanding launch loads and being accommodatable in a limited launcher envelope. Hence, there is a constant need to provide for a light weighted deployable boom assembly having a compact folded structure, with provision to transfer and withstand the launch loads and fit into the launcher envelope.





क्रमांक : 044152503  
SL No :



भारत सरकार  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	429143
आवेदन सं. / Application No.	:	202241055623
फाइल करने की तारीख / Date of Filing	:	28/09/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.SATHYA MURTHY, Narendra 2.RAI, Vijay Shankar 3.ASWATHANARAYANA, Shankara 4.HUVINAHALLY NANJUNDA SHARMA, Suresha Kumar

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित DEPLOYABLE BOOM ASSEMBLY नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2022 के अट्ठाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled DEPLOYABLE BOOM ASSEMBLY as disclosed in the above mentioned application for the term of 20 years from the 28<sup>th</sup> day of September 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/04/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट को नवीकरण के लिए बीस, यदि इसे बनाए रखा जाना है, सितम्बर 2024 के अट्ठाईसवें दिन को और उसके परवर्त प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 28<sup>th</sup> day of September 2024 and on the same day in every year thereafter.





## VSSC

240 A Satellite Dispensing System for Cubesat

429355

The present invention relates to satellites and more particularly to a satellite dispensing system for cubesat.

In the field of space exploration, nano satellites were developed to be launched into space by launch vehicles whereas each satellite is contained/ stored in a “dispenser” device sometimes referred to as small scale satellite “deployer”, configured to deploy the small satellite in a controlled manner to achieve desired orbit.



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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044152582  
SL No :



पेटेंट सं. / Patent No. : 429355  
आवेदन सं. / Application No. : 202141042720  
फाइल करने की तारीख / Date of Filing : 21/09/2021  
पेटेंटी / Patentee : Indian Space Research Organization

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A SATELLITE DISPENSING SYSTEM FOR CUBESAT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2021 के इक्कीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A SATELLITE DISPENSING SYSTEM FOR CUBESAT as disclosed in the above mentioned application for the term of 20 years from the 21<sup>st</sup> day of September 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 19/04/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट की नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, सितम्बर 2023 के इक्कीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21<sup>st</sup> day of September 2023 and on the same day in every year thereafter.



## VSSC

241

**System and Method for Reconfiguration of a Relay Driving Scheme in Quad Redundant Configuration**

431260

The present disclosure relates to the field of quad redundant systems, and relates to a method for configuring quad chain relays, and more specifically, relates to system and method for reconfiguration of a relay driving scheme in case of failure of multiple commanding modules in a quad redundant configuration.

Many industrial, military and space quad redundant systems have the requirement of fail operational fail safe (FO-FS) without relying only on self-check. Fail operational means that the system shall be operational after the first failure in the system. Fail operational-fail safe means the system shall be safe after the second failure. Stated differently, the system shall be able to tolerate two failures in the entire system. This requires a third module in place to be functional after detecting the failure of two modules. So, three modules are required in the system to satisfy the first requirement viz FO-FS. The three modules can be configured in either triple redundant configuration or a triple modular redundant (TMR) configuration.





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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044153354  
SL No :



पेटेंट सं. / Patent No.	:	431260
आवेदन सं. / Application No.	:	202241010568
फाइल करने की तारीख / Date of Filing	:	28/02/2022
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.LEKSHMI KUMARAN RADHA 2.ARUNDEV VAMADEVAN 3.JAGMEET SINGH 4.SAJI KALAYIL JOSE 5.ANNA PRIYA KOSHY

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित SYSTEM AND METHOD FOR RECONFIGURATION OF A RELAY DRIVING SCHEME IN QUAD REDUNDANT CONFIGURATION नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2022 के अष्टाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SYSTEM AND METHOD FOR RECONFIGURATION OF A RELAY DRIVING SCHEME IN QUAD REDUNDANT CONFIGURATION as disclosed in the above mentioned application for the term of 20 years from the 28<sup>th</sup> day of February 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 09/05/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, फरवरी 2024 के अष्टाईसवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 28<sup>th</sup> day of February 2024 and on the same day in every year thereafter.



## LPSC

242

**Spacecraft Fueling and Pressurization System Based on Remote Operation Concept**

432002

The present invention relates to a spacecraft fueling and pressurization system based on remote operation concepts. More particularly, the present invention is a spacecraft fueling and pressurization system at launch base by specialized loading equipment and specific to safe handling of the hazardous activity with minimum manpower operation time.

The spacecraft chemical propulsion system uses hazardous propellants like  $N_2H_4$ , MMH, and MON-3 for decomposition/ combustion to produce thrust for on-orbit operations. These propellants are hazardous and toxic. The handling of the propellants requires specialized training and also the operators need special safety dresses while handling. In case of any pollution during fueling needs operating team 15 evacuation from the filling hall for safety.





क्रमांक : 044153620  
SL No :



भारत सरकार  
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THE PATENT OFFICE  
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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

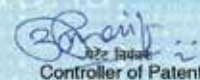
पेटेंट सं. / Patent No. : 432002  
आवेदन सं. / Application No. : 202241034416  
फाइल करने की तारीख / Date of Filing : 16/06/2022  
पेटेंटी / Patentee : Indian Space Research Organisation  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1.C.Paul Mony 2.D Saravana Kumar 3.K M Shanbhogue

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित SPACECRAFT FUELING AND PRESSURIZATION SYSTEM BASED ON REMOTE OPERATION CONCEPT नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2022 के सोलहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SPACECRAFT FUELING AND PRESSURIZATION SYSTEM BASED ON REMOTE OPERATION CONCEPT as disclosed in the above mentioned application for the term of 20 years from the 16<sup>th</sup> day of June 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 17/05/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी -** इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, जून 2024 के सोलहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 16<sup>th</sup> day of June 2024 and on the same day in every year thereafter.





## LPSC

243

**Methods and Systems for Precision Machining of a Helical Compression Spring to Achieve Geometrical Parameters**

432496

The present disclosure relates to precision machining of helical compression springs to achieve stringent tolerance requirements, and in particular relates to methods and systems adapted for precision machining a helical compression spring, that facilitates conformance of the geometrical parameters of parallelism and perpendicularity, by the machined helical compression spring. The machining of each end (A, B) of the helical compression spring is done alternatively by an EDM die sinking tool and thereafter by EDM wire cut method. The machined helical compression spring further undergoes precision grinding by a grinding wheel. The helical compression spring so obtained conforms to the geometrical parameters of parallelism and perpendicularity, such that it can be used in valve poppet for fluid control.



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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044153800  
SL No :



पेटेंट सं. / Patent No. : 432496  
आवेदन सं. / Application No. : 202241054027  
फाइल करने की तारीख / Date of Filing : 21/09/2022  
पेटेंटी / Patentee : INDIAN SPACE RESEARCH ORGANISATION  
आविष्कारक (जहाँ लागू हो) / Inventor(s) : 1.KUMAR, B. Sathis 2.RAJU, K J 3.VARKEY, Francis 4.K, Soman

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित METHODS AND SYSTEMS FOR PRECISION MACHINING OF A HELICAL COMPRESSION SPRING TO ACHIEVE GEOMETRICAL PARAMETERS नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2022 के इक्कीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled METHODS AND SYSTEMS FOR PRECISION MACHINING OF A HELICAL COMPRESSION SPRING TO ACHIEVE GEOMETRICAL PARAMETERS as disclosed in the above mentioned application for the term of 20 years from the 21<sup>st</sup> day of September 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 22/05/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, सितम्बर 2024 के इक्कीसवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21<sup>st</sup> day of September 2024 and on the same day in every year thereafter.



## VSSC

244 A System for payload separation

432799

The payload separation system according to the present invention comprising a ball lock mechanism with a pyrothruster. The entire system is arranged in such a way that, the shock and tip-off impart to the payload due to the separation is significantly less. The actuation of pyrothruster displays the retainer ring in the ball lock system which release the balls accommodated inside the fore end and aft end rings. The payload is mounted on the fore end ring and the launch vehicle is mounted on the aft end ring. The spring thrusters provide jettisoning velocity to the fore end and aft end rings, thereby causing separation of the payload from the rest of the system.





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सत्यमेव जयते

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पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044153901  
SL No :



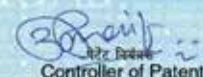
पेटेंट सं. / Patent No.	:	432799
आवेदन सं. / Application No.	:	3579/CHE/2011
फाइल करने की तारीख / Date of Filing	:	18/10/2011
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहां लागू हो) / Inventor(s)	:	1.NAGA SREENIVASA RAO YENGALA SETTY 2.ABRAHAM VARGHESE 3.POKKAN PURUSHOTHAMAN 4.RAHHAVAN PILLAI RADHAKRISHNA PILLAI 5.JOHN PUTHUCHIRA ZACHARIAH

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित PAYLOAD SEPARATION SYSTEM नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2011 के अठारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PAYLOAD SEPARATION SYSTEM as disclosed in the above mentioned application for the term of 20 years from the 18<sup>th</sup> day of October 2011 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 24/05/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, अक्टूबर 2013 के अठारहवें दिन को और उसके तत्पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 18<sup>th</sup> day of October 2013 and on the same day in every year thereafter.



## VSSC

245

**Apparatus for Accurate and Safe Measurement of Resistance**

433015

The present invention discloses an apparatus for measuring electrical resistance using a modified Wheatstone bridge circuit. The apparatus includes a DC power source followed by an ammeter and an ON/OFF switch, said switch is connected to a current limiting resistor and is connected to two sets of bank of resistors. One set of the said resistors are followed by unknown squib resistors and other by a potentiometer and galvanometer, and the said potentiometer is followed by another set of bank of resistors. The circuit also incorporates a push button switch connected to the squib resistor shunt resistor connected across the galvanometer and a selector switch, and the said components are enclosed in an electrostatically safe enclosure. The invention provides an apparatus for addressing the problem of measuring electrical resistance accurately in unsafe conditions.





क्रमांक : 044153995  
SL No :



भारत सरकार  
GOVERNMENT OF INDIA  
पेटेंट कार्यालय  
THE PATENT OFFICE  
पेटेंट प्रमाणपत्र  
PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 433015  
आवेदन सं. / Application No. : 1245/CHE/2013  
फाइल करने की तारीख / Date of Filing : 21/03/2013  
पेटेंटी / Patentee : INDIAN SPACE RESEARCH ORGANISATION  
आविष्कारक (जहां लागू हो) / Inventor(s) : 1.J. GLADWIN 2.SURESH BABU.S 3.D. KARTHIKESAN

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित APPARATUS FOR ACCURATE AND SAFE MEASUREMENT OF RESISTANCE नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2013 के इक्कीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled APPARATUS FOR ACCURATE AND SAFE MEASUREMENT OF RESISTANCE as disclosed in the above mentioned application for the term of 20 years from the 21<sup>st</sup> day of March 2013 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 26/05/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, मार्च 2015 के इक्कीसवें दिन को और उसके पचास प्रत्येक वर्ष से उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 21<sup>st</sup> day of March 2015 and on the same day in every year thereafter.





## LPSC

246 | A Hall Effect Thruster with Co-Axial Coil

433426

The present subject matter discloses a hall effect thruster. The system hall effect thruster includes an upper inner electromagnetic coil, a lower inner electromagnetic coil located below the upper inner electromagnetic coil coaxially about a central axis, a central core surrounded by the upper inner electromagnetic coil an electrical circuit, and an annular channel opens at one end. The central core includes an inner pole piece at one end. The annular channel is defined by an inner wall and an outer wall of the acceleration channel coaxial about the central axis. The lower inner electromagnetic coil of the present hall effect thruster advantageously eliminates the requirement of 4 to 6 outer coils in conventional hall effect thruster.



भारत सरकार  
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PATENT CERTIFICATE  
(Rule 74 of The Patents Rules)

क्रमांक : 044154126  
SL No :




पेटेंट सं. / Patent No.	:	433426
आवेदन सं. / Application No.	:	202241059850
फाइल करने की तारीख / Date of Filing	:	19/10/2022
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	:	1.GEORGE, Raji 2.SHEKHAR, K Panuganti 3.SUNDARAVADIVELU, G 4.KUMAR, B Sathis 5.RADHAKRISHNAN, M

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित A HALL EFFECT THRUSTER WITH CO-AXIAL COIL नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2022 के उन्नीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled A HALL EFFECT THRUSTER WITH CO-AXIAL COIL as disclosed in the above mentioned application for the term of 20 years from the 19<sup>th</sup> day of October 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 31/05/2023  
Date of Grant :

  
Controller of Patent

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, अक्टूबर 2024 के उन्नीसवें दिन को और उसके पचास प्रत्येक वर्ष में उन्नी दिन देव होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 19<sup>th</sup> day of October 2024 and on the same day in every year thereafter.



## VSSC

247

**A Thermal Control Coating Composition for Passive Temperature Control and Method for Preparing the Same**

434151

The invention is in the field of passive thermal control systems, and relates to a thermal control coating for passive temperature control of spacecrafts. More specifically it relates to a very low solar absorptive, high infrared (IR) emissive, antistatic, low outgassing and room temperature setting composition, which is extremely useful in spacecraft thermal control. The invention also finds application in general purpose radiators.

**Background of Invention:** Passive temperature control systems in spacecrafts are accomplished through the use of optically tailored surfaces which can absorb low amount of solar radiation and emit radiation to space. Hence, the passive thermal control coatings are desired to have high IR emissivity and low solar absorptance. For spacecrafts, thermal control is achieved mainly through the usage of surface coatings, either black or white. White coatings/paints are used to provide low solar absorptance and high emissivity. Apart from temperature control, it is desirable that the coating/paint should possess electrostatic charge mitigation properties (electrostatic dissipation (ESD)) to dissipate the charge accumulated on the external surface of the spacecraft thereby protecting the sensitive electronic components onboard. Hence, to provide static charge dissipation, the paints /coatings are desired to possess antistatic characteristics with surface resistivity less than  $10^{10}$  ohms/square. In addition to thermal control and ESD, the coating/paint for use on spacecraft should exhibit outgassing properties limited to space application constraint. The coating has to adhere to typical substrates used in spacecraft construction such as aluminum, polymeric composites, and Kapton®. Further, ease of processing and low temperature curing are yet other desirable requirements for the coating. Finally, the material must possess easy applicability by standard coating techniques like spraying, brushing or powder coating.








सत्यमेव जयते

पेटेंट कार्यालय, भारत सरकार  
पेटेंट प्रमाण पत्र |  
(पेटेंट-निष्पत्ति का नियम 74)

The Patent Office, Government Of India  
Patent Certificate  
(Rule 74 of The Patents Rules)

कम सं/SL No : 044154380



पेटेंट सं. / Patent No.	434151
आवेदन सं. / Application No.	202241003389
फाइल करने की तारीख / Date of Filing	20/01/2022
पेटेंटी / Patentee	Indian Space Research Organization
आविष्कारकों का नाम / Name of Inventor(s)	1. Indulekha Komath 2. Shahina Malikaparambil Abdul Razak 3. Deepthi Thomas 4. Rajvihar Sivaraman Nair Rajeev 5. Dona Mathew

एतद्वारा प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित **A THERMAL CONTROL COATING COMPOSITION FOR PASSIVE TEMPERATURE CONTROL AND METHOD FOR PREPARING THE SAME** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जनवरी 2022 के बीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A THERMAL CONTROL COATING COMPOSITION FOR PASSIVE TEMPERATURE CONTROL AND METHOD FOR PREPARING THE SAME** as disclosed in the above mentioned application for the term of 20 years from the 20<sup>th</sup> day of January 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 08/06/2023  
Date of Grant :



Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जनवरी 2024 के बीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 20<sup>th</sup> day of January 2024 and on the same day in every year thereafter.



## LPSC

248

Snap-Off Single Port Umbilical for Inert Gas Servicing

435475

The present invention relates to a snap-off umbilical which is designed with a single port and for remote fluid servicing of launch vehicle. The flight connector and the ground connector of the snap-off umbilical are rigidly attached to the launch vehicle and the flight O-ring based sealing provides the leak-tightness at this joint. The launch pad hose is assembled to ground connector. The separable joint between flight connectors and the ground connector is sealed by the flight O-ring. Required ejection load for the ground connector is provided by the connector ejection spring and the ground connector and the flight connector are clamped together against the spring load using two radial clamps. The two radial clamps along with the clamp the ejection spring, the shear pin, the notch pin and the retractor, form the locking and separation mechanism.







**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (DESIGNS) TRADE MARKS  
GEOGRAPHICAL INDICATIONS



भारत सरकार  
GOVERNMENT OF INDIA

क्रम सं./SL No :044154840



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	435475
आवेदन सं. / Application No.	202241054567
फाइल करने की तारीख / Date of Filing	23/09/2022
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.Hemendra Kumar Dhurandher 2.Jishnu T R 3.Vaibhav Amalak Ahire 4.Muthukumar S 5.Dilip V 6.B Sathis Kumar 7.M Radhakrishnan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **SNAP-OFF UMBILICAL FOR INERT GAS SERVICING** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2022 के तेहसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **SNAP-OFF UMBILICAL FOR INERT GAS SERVICING** as disclosed in the above mentioned application for the term of 20 years from the 23<sup>rd</sup> day of September 2022 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 26/06/2023  
Date of Grant :



Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, सितम्बर 2024 के तेहसरे दिन को और उसके परसत अनेक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 23<sup>rd</sup> day of September 2024 and on the same day in every year thereafter.





## VSSC

249

**Method For Coating a Hardware with Polychlorotrifluoroethylene**

435667

The invention is in the field of coating of hardware, and relates to a method for coating polychlorotrifluoroethylene on different hardware followed by its heat treatment.

Fluoropolymers have a variety of applications because of its resistance to most of the chemicals and its high permeability resistance along with good mechanical properties. Polychlorotrifluoroethylene is one of the fluoropolymers used for low temperature applications due to its excellent creep and abrasion resistance and increased mechanical strength at low temperature. Properties of polychlorotrifluoroethylene coated hardware mainly depend on the method of processing and % crystallinity of polychlorotrifluoroethylene.






**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044154909



पेटेंट सं. / Patent No.	435667
आवेदन सं. / Application No.	202241036430
फाइल करने की तारीख / Date of Filing	24/06/2022
पेटेंटी / Patentee	Indian Space Research Organization
अविष्कारकों का नाम / Name of Inventor(s)	1.Srirangam Siripothu 2.Saraswathi Kesava Pillai Manu 3.Sinthal Appusamy Ilangovan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में ब्यापकतः **METHOD FOR COATING A HARDWARE WITH POLYCHLOROTRIFLUOROETHYLENE** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2022 के चौबीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **METHOD FOR COATING A HARDWARE WITH POLYCHLOROTRIFLUOROETHYLENE** as disclosed in the above mentioned application for the term of 20 years from the 24<sup>th</sup> day of June 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 26/06/2023  
Date of Grant :

  
Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जून 2024 के चौबीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उन्ही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 24<sup>th</sup> day of June 2024 and on the same day in every year thereafter.



## VSSC

250

**Dielectric Ceramic Composition, Its Derivatives and Methods for Preparing Them**

437391

The present invention relates to dielectric ceramic composition. More particularly the invention relates to bulk ceramics, flexible bodies and sintered sheets of dielectric ceramics made out of the dielectric ceramic composition. The invention relates to a method of making the dielectric ceramic composition. The invention also relates to methods for preparing flexible thin sheets and fired or densified or sintered bulks (bodies) and sheets obtained from the dielectric ceramic composition. The developed ceramic compositions used for various applications in electrical, electronic, dielectric and thermal devices. The developed and improved dielectric ceramic compositions can also be used in microwave substrates, dielectric resonators, multi-chip module, co-fired ceramic packages, flexible ceramic green tape, etc.

A number of ceramics find application as passive components such as antennas, substrates, resonators, waveguides etc. in electronic industry, especially in micro-electronics. Though such components may not be as popular compared to the piezo or ferroelectric counterparts, there is definite and exclusive demand for them in high-frequency circuits and microwave integrated circuits. Such components find application in wide frequency ranges. Among these applications, except for substrates, others make use of ceramics with good thermal stability of relative permittivity or dielectric constant ( $\epsilon$ ). Substrate is a flat thin sheet of ceramic that can be used to carry or transport signals of a specific frequency range. The frequency range is decided by the relative permittivity or dielectric constant ( $r$ ) and its thickness; according to operating frequency range conductor line width will be decided. In this case, the temperature-coefficients of linear expansion of both conductor line and substrate along with the  $\epsilon$  decide the shift in pass-band. Practically, in many applications  $\epsilon$  will play crucial role in the case of substrates.







**INTELLECTUAL  
PROPERTY INDIA**  
INDIAN PATENT ACT, 1970  
INDIAN PATENT RULES, 2003



भारत सरकार  
भारत सरकार

क्रम सं/SL No :044155528



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	437391
आवेदन सं. / Application No.	202141006971
फाइल करने की तारीख / Date of Filing	19/02/2021
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.K Ashok 2.B Masin 3.H Sreemoolanadhan 4.Bhanu Pant 5.S Senthil Kumar 6.ST Aruna

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **DIELECTRIC CERAMIC COMPOSITION, ITS DERIVATIVES AND METHODS FOR PREPARING THEM** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2021 के उन्नीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **DIELECTRIC CERAMIC COMPOSITION, ITS DERIVATIVES AND METHODS FOR PREPARING THEM** as disclosed in the above mentioned application for the term of 20 years from the 19<sup>th</sup> day of February 2021 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 05/07/2023

Date of Grant :





Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, कारवरी 2023 के उन्नीसवें दिन को और उसके पचास प्रत्येक वर्ष में उन्नीस दिव देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 19<sup>th</sup> day of February 2023 and on the same day in every year thereafter.



## VSSC

251 | A Dual Tandem Servo Valve System

437455

The present invention discloses a dual tandem servo valve system for metering the flow equally and simultaneously from two independent hydraulic source, wherein the system comprising a push rod having a plurality of projections and guides, a motor having a recess wherein said projections is disposed between said recess, said push rod and said motor is secured uniformly through at least three fasteners, said push rod is suitably aligned with an encapsulating sleeve to provide buckling resistance, a grooved spool having at least three lands is provided in said system to attain stability under operation with pressurized fluid, said spool is disposed operably such that a plurality of metering orifices are the only restriction to flow; a Linear variable differential transformer is connected to said spool for furnishing information, said sleeve circumferentially enclosing said spool with a peripheral array of equal spaced rectangular ports and equal number of circular ports over said lands of said spools.





 <b>INTELLECTUAL PROPERTY INDIA</b> <small>भारत सरकार</small> <small>भारत सरकार</small> <small>भारत सरकार</small>	 <b>भारत</b> <small>भारत सरकार</small> <small>भारत सरकार</small> <small>भारत सरकार</small>	<b>फॉर्म नं./SL No.: 044135547</b> 	
<b>पेटेंट कार्यालय, भारत सरकार</b> <b>पेटेंट प्रमाण पत्र</b>		<b>The Patent Office, Government Of India</b> <b>Patent Certificate</b>	
<b>(पेटेंट नियमावली का नियम 74)</b>		<b>(Rule 74 of The Patents Rules)</b>	
पेटेंट सं. / Patent No.	:	437455	
आवेदन सं. / Application No.	:	4201/CHE/2015	
फाइल करने की तारीख / Date of Filing	:	12/08/2015	
पेटेंटी / Patentee	:	Indian Space Research Organisation	
आविष्कारकों का नाम / Name of Inventor(s)	:	1.Pradeep Kumar 2.Dr. B.B. Das 3.S. Venkataraman 4.K.V. Simon 5.K.S. Nagesh 6.K.S. Anand Kumar	
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित <b>A DUAL TANDEM SERVO VALVE SYSTEM</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2015 के बारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>A DUAL TANDEM SERVO VALVE SYSTEM</b> as disclosed in the above mentioned application for the term of 20 years from the 12<sup>th</sup> day of August 2015 in accordance with the provisions of the Patents Act, 1970.</p>			
			
अनुदान की तारीख Date of Grant :	05/07/2023		 <b>Controller of Patents</b>
<p><b>टिप्पणी -</b> इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बरकरार रखा जाय, अगस्त 2017 के बारहवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।</p> <p><b>Note. -</b> The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 12<sup>th</sup> day of August 2017 and on the same day in every year thereafter.</p>			







## VSSC

252

**A Configuration Using Retainer Ring Concept for Connecting Motor Case to Nozzle in a Solid Rocket Motor**

438243

This invention is in the field of Crew Escape Motors (CEM) used for detaching and propelling crew module away from a launch vehicle, and relates to motor to nozzle interface of the crew escape system, and more specifically to an interface configuration using retainer ring concept for connecting motor case to nozzle in a solid rocket motor.

CEM should be capable of detaching and propelling the crew module away from a launch vehicle within the shortest possible time in case of any malfunctioning of the launch vehicle or an abort if required in the initial regime of flight. Crew Jettisoning Motor (CJM) is part of a crew escape system and is intended to separate the crew module from crew escape system. Hence, CJM system requires multiple scarfed nozzles to produce the required thrust within the shortest time to jettison the crew module. This can be achieved through the use of solid propellants that have faster burn rate as well as higher energy content. In a normal course, such system will produce higher internal pressure and that poses greater challenges to the hardware designer. The higher opening on the motor case for nozzle attachment will further worsen the situation.






**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No.: 044155836



पेटेंट सं. / Patent No.	438243
आवेदन सं. / Application No.	201841045213
फाइल करने की तारीख / Date of Filing	30/11/2018
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1. Paul Murugan J 2. Thomas Kurian 3. Bagavathiappan R 4. V Eswaran 5. Jayaprakash J

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A CONFIGURATION USING RETAINER RING CONCEPT FOR CONNECTING MOTOR CASE TO NOZZLE IN A SOLID ROCKET MOTOR** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आग तारीख नवम्बर 2018 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A CONFIGURATION USING RETAINER RING CONCEPT FOR CONNECTING MOTOR CASE TO NOZZLE IN A SOLID ROCKET MOTOR** as disclosed in the above mentioned application for the term of 20 years from the 30<sup>th</sup> day of November 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 11/07/2023  
Date of Grant :

Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, नवम्बर 2020 के तीसरे दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 30<sup>th</sup> day of November 2020 and on the same day in every year thereafter.



## LPSC

253

**Method and apparatus for voltage scaling in ZVZCS DC-DC converter**

440340

The present invention relates to DC-DC power converters, more particularly, to a high power soft switching class of converters.

In an electric propulsion system, specific impulse is proportional to the acceleration of the ions. Higher specific impulse results in lower fuel consumption which increases the payload capacity of the satellite. A discharge power supply provides high voltage to the electric thruster which generates high electric field. It is a high power DCDC converter which transfers the power from the battery to the thruster at increased voltage level while providing the galvanic isolation. However, the maximum achievable voltage of the converter is limited by the breakdown voltage of the rectifier diodes.








**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044156567



पेटेंट सं. / Patent No.	440340
आवेदन सं. / Application No.	202241060703
फाइल करने की तारीख / Date of Filing	25/10/2022
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.Vishal Kumar Meena 2.Kiran R. 3.Manju S. Nair

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **METHOD AND APPARATUS FOR VOLTAGE SCALING IN ZVZCS DC-DC CONVERTER** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2022 के पच्चीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **METHOD AND APPARATUS FOR VOLTAGE SCALING IN ZVZCS DC-DC CONVERTER** as disclosed in the above mentioned application for the term of 20 years from the 25<sup>th</sup> day of October 2022 in accordance with the provisions of the Patents Act,1970.



अनुदान की तारीख : 25/07/2023  
Date of Grant :

Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अक्टूबर 2024 के पच्चीसवें दिन को और उसके पचास प्रत्येक वर्ष में उन्नीस दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 25<sup>th</sup> day of October 2024 and on the same day in every year thereafter.



## VSSC

254 Dual Mode Power Feed Through

441031

The embodiments herein generally relate to a power feed through for heater systems. More specifically, the embodiments described herein relate to a unique power feed through in heater systems for both high pressure and vacuum environments. Particularly, relates to a dual mode power feed through providing leak tight seal mechanism which holds high vacuum during heating and high internal pressure during pressurization period.

Generally, high power feed through system capable of holding vacuum and high pressure is an essential requirement for storage heater system. At present, high power feed through is available to meet the requirements of either vacuum or pressure.





 <p><b>INTELLECTUAL PROPERTY INDIA</b> भारत सरकार व्यावसायिक आविष्कार</p>	 <p>सत्यमेव जयते</p>	<p>फॉर्म नं./SL No. 044156885</p> 
<p><b>पेटेंट कार्यालय, भारत सरकार</b>      <b>The Patent Office, Government Of India</b></p> <p><b>पेटेंट प्रमाण पत्र</b>      <b>Patent Certificate</b></p> <p>(पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)</p>		
पेटेंट सं. / Patent No.	:	441031
आवेदन सं. / Application No.	:	201941006610
फाइल करने की तारीख / Date of Filing	:	20/02/2019
पेटेंटी / Patentee	:	Indian Space Research Organization
आविष्कारकर्ता का नाम / Name of Inventor(s)	:	1.Subhajayan KP 2.Fazil Mohammad 3.Samik Jash 4.Jasper Lal C
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाव्यक्तित <b>DUAL MODE POWER FEED THROUGH</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2019 के बीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>DUAL MODE POWER FEED THROUGH</b> as disclosed in the above mentioned application for the term of 20 years from the 20<sup>th</sup> day of February 2019 in accordance with the provisions of the Patents Act, 1970.</p>		
		
अनुदान की तारीख Date of Grant :	28/07/2023	
 <b>Controller of Patents</b>		
<p><b>टिप्पणी -</b> इस पेटेंट के वरीकरण के लिए वीजा, यदि इसे बनाए रखा जाय है, फरवरी 2021 के बीसवें दिन को और उसके पचास प्रत्येक वर्ष में उन्नीस दिवस रहेगी।</p> <p><b>Note. -</b> The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 20<sup>th</sup> day of February 2021 and on the same day in every year thereafter.</p>		







## VSSC

255

Fixture for testing leaded less RF and micro wave devices

441962

A test fixture for testing surface mount RF and microwave devices comprising: a base plate for securely engaging device under test a holding plate pivotally attached to the base plate said holding plate having a tapped hole at top for passage of tightening arm wherein the tightening arm fixes the device under test by forcing it downwards for proper ground and RF contacts; a jaw securely connected to the holding plate by via means of a jaw holder; a pair of U bracket capable of being fixed at the end of the base plate, a locking plate which connects and holds the pair of U bracket tightens the device under test; and a pair of connectors are mounted on bottom surface of the test fixture in such a way that pins of the device under test get inserted into the pair of connectors.






**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No : 044157166



पेटेंट सं. / Patent No.	441962
आवेदन सं. / Application No.	7024/CHE/2015
फाइल करने की तारीख / Date of Filing	29/12/2015
पेटेंटी / Patentee	Indian Space Research Organisation

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **"FIXTURES FOR TESTING LEADED AND LEAD LESS RF AND MICROWAVE DEVICES"** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख दिसम्बर 2015 के उन्नीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **"FIXTURES FOR TESTING LEADED AND LEAD LESS RF AND MICROWAVE DEVICES"** as disclosed in the above mentioned application for the term of 20 years from the 29<sup>th</sup> day of December 2015 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 31/07/2023  
Date of Grant :

  
Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, दिसम्बर 2017 के उन्नीसवें दिन को और उसके परवर्ती प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 29<sup>th</sup> day of December 2017 and on the same day in every year thereafter.



## VSSC

256

Oxazolidone modifies epoxy film adhesive composition

445154

A heat curable oxazolidone modified thin film adhesive composition with filleting characteristics comprises of:

- a) an oxazolidone-modified epoxy resin in a ratio of 40% to 75% by weight,
- b) a glycidyl ether resin in a ratio of 10% to 25% by weight. Wherein, glycidyl ether resin is solid resin and liquid resin,
- c) a thermoplastic resin in a ratio of 0.5% to 10% by weight,
- d) a filler in a ratio of 5% to 15% by weight, and
- e) a curing agent in a ratio of 1% to 30% by weight.

The adhesive composition as claimed in claim 1, wherein the oxazolidone modified epoxy resin is formed by reacting an epoxy resin with a polyisocyanate component in a ratio of 10:1 to 30:1.





 <p><b>INTELLECTUAL PROPERTY INDIA</b> भारत सरकार व्यावसायिक आविष्कार</p>	 वन्दे मातरम्	क्रम सं./SL No. 044158239 
<b>पेटेंट कार्यालय, भारत सरकार</b> <b>The Patent Office, Government Of India</b> <b>पेटेंट प्रमाण पत्र</b> <b>Patent Certificate</b> (पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)		
पेटेंट सं. / Patent No.	:	445154
आवेदन सं. / Application No.	:	3620/CHE/2013
फाइल करने की तारीख / Date of Filing	:	14/08/2013
पेटेंटी / Patentee	:	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारकों का नाम / Name of Inventor(s)	:	1.RANAJIT PAL 2.SAVITHA KRISHNAN 3.SURAJ SUDHI 4.CHETHRAPILLY PADMANABHAN REGHUNADHAN NAIR
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित <b>OXAZOLIDONE MODIFIED EPOXY FILM ADHESIVE COMPOSITION</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2013 के चौदहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>OXAZOLIDONE MODIFIED EPOXY FILM ADHESIVE COMPOSITION</b> as disclosed in the above mentioned application for the term of 20 years from the 14<sup>th</sup> day of August 2013 in accordance with the provisions of the Patents Act, 1970.</p>		
		
अनुदान की तारीख Date of Grant :	16/08/2023	
		 पेटेंट नियंत्रक Controller of Patents
<p><b>टिप्पणी -</b> इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बरकरार रखा जाय है, अगस्त 2015 के चौदहवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।</p> <p><b>Note.</b> - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 14<sup>th</sup> day of August 2015 and on the same day in every year thereafter.</p>		





## URSC

257

**System and Methods for Controlling Inspired Oxygen and Positive End Expiratory Pressure in Ventilators**

449104

Disclosed herein is a system and methods for controlling fraction of inspired oxygen ( $FiO_2$ ) and positive end expiratory pressure (PEEP) in critical care medical ventilators. The system comprises a first conduit comprising an air pump, an oxygen source, a variable orifice valve, a check valve, a flow sensor, a pressure sensor and an oxygen sensor; a second conduit comprising an high flow rate On Off valve and an low flow rate variable orifice valve a patient interface which connects the first conduit and second conduit to the airway of the patient; and a controller configured to receive information from the sensors in the system.







**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (DESIGNS) TRADE MARKS  
GEOGRAPHICAL INDICATIONS



भारत सरकार  
भारत सरकार

क्रम सं./SL No :044159496



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	449104
आवेदन सं. / Application No.	202141032346
फाइल करने की तारीख / Date of Filing	19/07/2021
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.ATUL SURESH VIVEK 2.PRAJWAL THOTTIYIL SUBRAMANIAN 3.RAJESH RAJASEKHARAN 4.SUSMITHA SURESH 5.SACHIN THOMAS 6.DENIL VALIYAMATTAM ROBINSON 7.ANISH GOPINATH 8.KUMAR SOMAN

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **SYSTEM AND METHODS FOR CONTROLLING INSPIRED OXYGEN AND POSITIVE END EXPIRATORY PRESSURE IN VENTILATORS** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जुलाई 2021 के उन्नीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **SYSTEM AND METHODS FOR CONTROLLING INSPIRED OXYGEN AND POSITIVE END EXPIRATORY PRESSURE IN VENTILATORS** as disclosed in the above mentioned application for the term of 20 years from the 19<sup>th</sup> day of July 2021 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख  
Date of Grant :



01/09/2023

  
Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जुलाई 2023 के उन्नीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 19<sup>th</sup> day of July 2023 and on the same day in every year thereafter.

\*यदि पेटेंटी व आविष्कारकों की संख्या अधिक है, पेटेंटी व आविष्कारकों के नाम कुल संख्या 2 पर जारी है।  
 \*Since the Number of Patentees / Inventors is more, the name of Patentees / Inventors are continued on Page No. 2





## SAC

258

**Autonomous frequency jump detection and correction for on-board navigation payload**

449198

A method for autonomous frequency jump detection and correction for on-board navigation payload comprises of: - at least three rubidium atomic frequency standard (RAFS 1, RAFS 2 and RAFS 3) for performance monitoring of frequency jumps in navigation payload master clock wherein one rubidium atomic frequency standard is a master clock and the other two rubidium atomic frequency standards are reference clocks; - two dual mixer time difference based phase meters to confirm the frequency jump in the master clock and - two jump detectors using phase meter data; Characterized in that the method for autonomous frequency jump detection in master clock comprising the steps of: - continuous monitoring of navigation payload's master clock for a frequency jump comprising the steps of: a. using the dual mixer time difference based phase meter data and estimating the frequency difference; b. comparing the frequency of master clock with the two reference clock onboard the navigation payload for frequency jump detection; c. comparing the frequency jumps in the two jump detectors with a user configurable jump threshold; and d. observing the jump detector flag of the two jump detectors to confirm the frequency jump in the master clock only, wherein assertion of both the jump detector flag implies jump in the master clock rather than reference clock of navigation payload.





**INTELLECTUAL  
PROPERTY INDIA**  
INDIAN PATENT OFFICE  
SOCIOLOGICAL RESEARCH



भारत सरकार  
भारत सरकार

क्रम सं/SL No :044159525



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	449198
आवेदन सं. / Application No.	202141028138
फाइल करने की तारीख / Date of Filing	23/06/2021
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.AKSHAY KHARE 2.T.V.S. RAM 3.SANJAY D. MEHTA 4.RAJAT ARORA

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **AUTONOMOUS FREQUENCY JUMP DETECTION AND CORRECTION FOR ON-BOARD NAVIGATION PAYLOAD** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2021 के तैदिसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदित किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **AUTONOMOUS FREQUENCY JUMP DETECTION AND CORRECTION FOR ON-BOARD NAVIGATION PAYLOAD** as disclosed in the above mentioned application for the term of 20 years from the 23<sup>rd</sup> day of June 2021 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख  
Date of Grant :



  
Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जून 2023 के तैदिसवें दिन को और उसके परवर्त प्रत्येक वर्ष में उही दिन देय होगा।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 23<sup>rd</sup> day of June 2023 and on the same day in every year thereafter.



## VSSC

259

A device and method for measuring gas permeability

450756

A device for the measurement of gas permeability of bipolar and unipolar plates comprising: a gas feeder connected to a gas cylinder having the gas which is used to check the permeability; a lid for covering the gas feeder; a test specimen being placed on a top surface of the gas feeder and tightened between the gas feeder and the lid a manometer placed between the gas cylinder and the gas feeder a valve placed between the manometer and the gas cylinder to control the flow and pressure of the gas in the gas feeder characterized in that the gas used to check the permeability is filled in a cylindrical passage in the gas feeder with the cross section of the cylindrical passage determining the area of the test specimen the top surface of the gas feeder comprises slots for placing O-rings, and the lid has an outer ring, said ring having a cylindrical passage for holding water.





 <b>INTELLECTUAL PROPERTY INDIA</b> <small>भारत (INDIA) विज्ञान (SCIENCE) प्रौद्योगिकी (TECHNOLOGY) व्यापारिक अंकित (TRADE MARKS)</small>	 <b>संस्कृत (Sanskrit)</b>	<b>फॉर्म नं./SL No. 044160051</b> 
<b>पेटेंट कार्यालय, भारत सरकार</b> <b>The Patent Office, Government Of India</b> <b>पेटेंट प्रमाण पत्र</b> <b>Patent Certificate</b> <small>(पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)</small>		
पेटेंट सं. / Patent No.	:	450758
आवेदन सं. / Application No.	:	201641037031
फाइल करने की तारीख / Date of Filing	:	28/10/2016
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	:	1.Thakur Sudesh Kumar Raunija 2.Mariamamma Mathew 3.Sharad Chandra Sharma

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A DEVICE AND METHOD FOR MEASURING GAS PERMEABILITY** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2016 के अट्ठाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A DEVICE AND METHOD FOR MEASURING GAS PERMEABILITY** as disclosed in the above mentioned application for the term of 20 years from the 28<sup>th</sup> day of October 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख  
Date of Grant : 11/09/2023

  
**Controller of Patents**

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि इस वार्षिक रकम जाय है, अक्टूबर 2018 के अट्ठाईसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उन्नीस दिन देय होगी।

**Note. -** The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 28<sup>th</sup> day of October 2018 and on the same day in every year thereafter.





## SAC

260 Unified Hybrid Horn Antenna (UHHA)

451697

The present invention discloses a Unified Hybrid Horn Antenna (UHHA) for high electrical performance over wide bandwidth. The UHHA includes a throat section having a linear/non-linear profiled smooth-walled section or a stepped section, an axial corrugated section in mid-section and a specially profiled radial corrugated section at aperture side. The corrugation section includes a spline-profile or multiple piecewise linear sections or multiple non-linear profiled single-depth radial corrugated section. The radial corrugated section of the UHHA also include a dual-/multi-depth radial corrugation section for high performance in dual or multi narrow bands operation with arbitrary frequency spacing. The UHHA do not have dielectric portion and hence eliminates electrostatic discharge (ESD) issue for space application. Specialized profiling and corrugations provides good cross-polar level and RF performance in comparison of smooth-walled horn. Also, UHHA provides lower Ohmic losses.





 <p><b>INTELLECTUAL PROPERTY INDIA</b> भारत सरकार सामाजिक न्याय</p>	 <p>संस्कृत जयते</p>	<p>क्रम सं/SL No. 044160339</p> 
<p align="center"><b>पेटेंट कार्यालय, भारत सरकार      The Patent Office, Government Of India</b></p>		
<p align="center"><b>पेटेंट प्रमाण पत्र      Patent Certificate</b></p>		
<p align="center">(पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)</p>		
पेटेंट सं. / Patent No.	: 451697	
आवेदन सं. / Application No.	: 3776/CHE/2013	
फाइल करने की तारीख / Date of Filing	: 26/08/2013	
पेटेंटी / Patentee	: INDIAN SPACE RESEARCH ORGANISATION	
आविष्कारकों का नाम / Name of Inventor(s)	: 1.RAMESH CHANDRA GUPTA 2.KHAGINDRA KUMAR SOOD 3.RAJEEV JYOTI	
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित <b>UNIFIED HYBRID HORN ANTENNA (UHHA)</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2013 के छब्बीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>UNIFIED HYBRID HORN ANTENNA (UHHA)</b> as disclosed in the above mentioned application for the term of 20 years from the 26<sup>th</sup> day of August 2013 in accordance with the provisions of the Patents Act, 1970.</p>		
<div align="center">  </div> <div> <p>अनुदान की तारीख Date of Grant : 14/09/2023</p> </div> <div align="right">   <p>पेटेंट नियंत्रक Controller of Patents</p> </div>		
<p><b>टिप्पणी -</b> इस पेटेंट के वरीकरण के लिए जी.पी.आई. फीस दो बार रखा जाये है, अगस्त 2015 के छब्बीसवें दिन को और उसके पचास प्रत्येक वर्ष में उन्नीस दिन तक होगी।</p> <p><b>Note.</b> - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 26<sup>th</sup> day of August 2015 and on the same day in every year thereafter.</p>		







## VSSC

261 Flexible Detonating Cord

456860

The present invention provides a flexible composite detonating cord, that is employed in expanding tube based explosive separation systems, for upper stages of aerospace launch vehicles. The detonating cord comprising a radially extending explosive core and a sleeve deposited on the length of the core, wherein the sleeve is directly embedded in an elastomeric matrix.






**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044161916



पेटेंट सं. / Patent No.	456860
आवेदन सं. / Application No.	201641037224
फाइल करने की तारीख / Date of Filing	31/10/2016
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.Cherian Thomas 2.Mathew Daniel

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **FLEXIBLE DETONATING CORD** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2016 के इकतीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **FLEXIBLE DETONATING CORD** as disclosed in the above mentioned application for the term of 20 years from the 31<sup>st</sup> day of October 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 05/10/2023  
Date of Grant :

  
Controller of Patents

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अक्टूबर 2018 के इकतीसवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 31<sup>st</sup> day of October 2018 and on the same day in every year thereafter.



## URSC

262

**An Electromechanical S-Band Microwave Rotary Joint Assembly for High Power Applications**

459040

The present disclosure discloses a rotary joint. More particularly, the present disclosure discloses a high-power contactless S-band electromechanical S-band microwave rotary joint assembly for high power satellite application.

In a satellite communication system, to continuously track the satellite, a highly sophisticated beam steering system is required. In this regard, various technologies have been developed, for example, electronically steered phased array, mechanically steered pencil beam antenna, etc. The satellite having the pencil beam antenna requires dedicated pointing and tracking capabilities to dynamically steer beam in required direction. Further, during the steering of the antenna to point and track, there must be a continuous transmission link with transponder of the satellite. However, there are many challenges/obstacles, like limited space on the satellite, harsh outer space environment with extreme temperature gradients etc. Many technologies, for example, rotary joints, have been developed to establish/facilitate continuous transmission link with the transponder of the satellite from the antenna and vice versa.







**INTELLECTUAL  
PROPERTY INDIA**  
MINISTRY OF LAW, GOVERNMENT OF INDIA



भारत सरकार  
भारत सरकार

क्रम सं./SL No :044162588



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	459040
आवेदन सं. / Application No.	202241058264
फाइल करने की तारीख / Date of Filing	12/10/2022
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.NAINAWATEE, Nikhil 2.B. Pavan Kumar 3.KAMBOJ, Amit 4.KUMAR, Abhishek 5.KARMAR, Prakasha 6.DEVIREDDY, Sivareddy 7.V. Senthil Kumar 8.HUVINAHALLY, Suresha Kumar Nanjundasharma

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **AN ELECTROMECHANICAL S-BAND MICROWAVE ROTARY JOINT ASSEMBLY FOR HIGH POWER APPLICATIONS** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2022 के बारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **AN ELECTROMECHANICAL S-BAND MICROWAVE ROTARY JOINT ASSEMBLY FOR HIGH POWER APPLICATIONS** as disclosed in the above mentioned application for the term of 20 years from the 12<sup>th</sup> day of October 2022 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख  
Date of Grant : 13/10/2023



Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अक्टूबर 2024 के बारहवें दिन को और उसके परवर्तन वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 12<sup>th</sup> day of October 2024 and on the same day in every year thereafter.



## VSSC

263

**Expanding Tube Assembly for Explosive Separation Systems**

462208

This invention relates to an explosive separation systems used for upper stages of aerospace launch vehicles, and more particularly relates to an explosive separation system which ensures total containment of detonation products.

Expanding tube assembly is required for the development of a low shock, no debris, and non-contaminating type explosive separation system for application in upper stages of launch vehicles. It is useful in applications such as heat shield separation, satellite separation and other upper stage separation systems which require total containment of detonation products and reduced level of shock.







**INTELLECTUAL  
PROPERTY INDIA**  
INDIAN PATENT OFFICE  
SOCIOECONOMIC RESEARCH



सत्यमेव जयते

क्रम सं./SL No :044163504



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	462208
आवेदन सं. / Application No.	201841045216
फाइल करने की तारीख / Date of Filing	30/11/2018
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.Cherian Thomas 2.Mathew Daniel 3.Bishwajyoti Dutta Majumdar 4.Baby Abraham

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **EXPANDING TUBE ASSEMBLY FOR EXPLOSIVE SEPARATION SYSTEMS** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2018 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **EXPANDING TUBE ASSEMBLY FOR EXPLOSIVE SEPARATION SYSTEMS** as disclosed in the above mentioned application for the term of 20 years from the 30<sup>th</sup> day of November 2018 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 26/10/2023

Date of Grant :





Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, नवम्बर 2020 के तीसरे दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 30<sup>th</sup> day of November 2020 and on the same day in every year thereafter.





## VSSC

264

**An Unmanned System for Autonomous Recovery of an Incoming Object and a Method Thereof**

465800

The present invention generally relates to a system for capturing and recovering or rescuing space objects and more particularly to a system and method for autonomous recovery of space based and terrestrial objects. Generally, in an aerospace industry, there are many missions with possibilities of recovery to facilitate vehicle reuse and research. Stage recovery is essential for the economical operation of projectile (rockets). Discarding of the stage after single use, increases the cost of vehicle and also increases the turnaround time. The cost of mission plays a major role in the success of any space endeavour. In addition to the cost and turnaround time for normal missions, there exists an increased demand to return objects from orbits. Technologies are being developed for sample return and orbital recovery missions. In an example, Indian re-entry capsule, SRE was recovered using parachutes. Similar attempts are being pursued in other countries as well.






**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044164532



पेटेंट सं. / Patent No.	465800
आवेदन सं. / Application No.	202241047757
फाइल करने की तारीख / Date of Filing	22/08/2022
पेटेंटी / Patentee	Indian Space Research Organization
आविष्कारकों का नाम / Name of Inventor(s)	1.Jiljo Kaithaperampil Moncy 2.Dinesh Kumar Manickam 3.Navin Manikandan Sakunthala 4.Unnikrishnan Padmakshi Rajeev 5.Eravimanglath Sankaran Padma kumar

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में व्यापकृतित **AN UNMANNED SYSTEM FOR AUTONOMOUS RECOVERY OF AN INCOMING OBJECT AND A METHOD THEREOF** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2022 के बाईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **AN UNMANNED SYSTEM FOR AUTONOMOUS RECOVERY OF AN INCOMING OBJECT AND A METHOD THEREOF** as disclosed in the above mentioned application for the term of 20 years from the 22<sup>nd</sup> day of August 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख  
Date of Grant :

04/11/2023

  
Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अगस्त 2024 के बाईसवें दिन को और उसके परवर्तन प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 22<sup>nd</sup> day of August 2024 and on the same day in every year thereafter.





## SAC

265

**Method and Device for Fragmenting Virus/Microbes using RF Radiation at Resonance Frequency**

465801

The present invention relates to the field of effects of radio frequency (RF) radiation on biological structures and to accomplish virus fragmentation/debilitation using RF radiation at its precise natural/resonance frequency when external to human/animal body. The present invention without prejudice to any other virus and not limited in concept merely to it; specifically focuses on the fragmentation of the SARS-CoV-2 virus using microwave irradiation. Background description includes information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art. 15 [0003] Similar to every physical object in this universe, viruses must also vibrate at their natural frequency. The use of chemical disinfectants for viral inactivation has its limitations like skin irritation on prolonged contact, bronchial irritation from inhalation, corrosion of metals, bleaching effects on fabrics and the like. Also, only surface disinfection is possible, and no germ-killing in the air is possible using chemical disinfection. Another popular approach for viral inactivation is using ultraviolet C (UV-C) radiation. The potential virucidal effects of UV-C radiation on viruses and bacteria are well established, however, this technique has adverse side effects as well. Direct UV-C exposure to human skin or eyes may cause injuries. UV-C lamps generate ozone, which upon inhalation can be irritating to the respiratory passages e.g., nose, throat, and lungs. UV-C can also degrade certain materials such as plastic, polymer and dyed textile over prolonged exposure.








**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044164533



पेटेंट सं. / Patent No.	465801
आवेदन सं. / Application No.	202141051530
फाइल करने की तारीख / Date of Filing	10/11/2021
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.THAKER, Pinakin P 2.JAIN, Siddhant 3.DAD, Ushma

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकट **METHOD AND DEVICE FOR FRAGMENTING VIRUS/MICROBES USING RF RADIATION AT RESONANCE FREQUENCY** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2021 के दसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुवत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **METHOD AND DEVICE FOR FRAGMENTING VIRUS/MICROBES USING RF RADIATION AT RESONANCE FREQUENCY** as disclosed in the above mentioned application for the term of 20 years from the 10<sup>th</sup> day of November 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 04/11/2023  
Date of Grant :

Controller of Patents

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, नवम्बर 2023 के दसवें दिन को और उसके परशांत प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 10<sup>th</sup> day of November 2023 and on the same day in every year thereafter.



## VSSC

266

**Support Free Monolithic Spherical Gas Bottle for Storing Gases**

465913

Disclosed herein is a gas bottle realized by LPBF in single piece for storing high pressure gas for critical application where strength to weight ratio is a main criterion in the design. The gas bottle includes a monolithic spherical body having an adapter end. A region of the spherical body in the vicinity of the adapter end is of conical shape. The present disclosure also provides a cost effective (less buy to fly ratio) method with a tremendous reduction in manufacturing lead time as compared to existing route of fabrication for the above said type of product. It is suitable for batch type hardware production in critical application like satellites, launch vehicles, aerospace, and medical.








**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No.: 044164562



पेटेंट सं. / Patent No.	465913
आवेदन सं. / Application No.	202341029624
फाइल करने की तारीख / Date of Filing	24/04/2023
पेटेंटी / Patentee	INDIAN SPACE RESEARCH ORGANISATION
अविष्कारकों का नाम / Name of Inventor(s)	1.JAIN, Anil Kumar 2.NAIR, Biju Sukumaran 3.JAYAPAL, Karthik

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A SUPPORT FREE MONOLITHIC SPHERICAL GAS BOTTLE FOR STORING GASES** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अर्थात् 2023 के चौबीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A SUPPORT FREE MONOLITHIC SPHERICAL GAS BOTTLE FOR STORING GASES** as disclosed in the above mentioned application for the term of 20 years from the 24<sup>th</sup> day of April 2023 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 06/11/2023  
Date of Grant :

  
Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अर्थात् 2025 के चौबीसवें दिन को और उसके परवर्त प्रत्येक वर्ष में उन्ही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 24<sup>th</sup> day of April 2025 and on the same day in every year thereafter.





## VSSC

267

**A Digital Interface Circuit for Resistive Bridge Type Sensors Abstract**

467853

The invention relates to an interface circuit for bridge type sensor measurement used in Data acquisition system. It includes a front-end signal conditioning circuit that interfaces with bridge type resistive sensors and a digital control module for offset-tuning capability. This circuit enables cancellation of residual offset that is commonly encountered in sensors such as strain gauges through a digital serial link connected to a checkout computer (360). This eliminates the need of a manual, mechanical tuning procedure that is cumbersome and error-prone especially in a complex electronic subassembly such as that in a launch vehicle. A back-end signal conditioning and digitization circuit consisting of an instrumentation amplifier (420) and sigma- delta ADC and a computer-controlled tuning system are also disclosed with configuration of channel gain, which in association with the offset tunability as above, renders the measurement range catered to by the system completely software programmable.



 <p><b>INTELLECTUAL PROPERTY INDIA</b> भारत (INDIA) विज्ञान प्रौद्योगिकी सामाजिक अध्येषण</p>	 <p>संस्कृत: ज्ञानं ब्रह्म</p>	<p>क्रम सं/SL No. 044165132</p> 
<p><b>पेटेंट कार्यालय, भारत सरकार</b>      <b>The Patent Office, Government Of India</b></p> <p><b>पेटेंट प्रमाण पत्र</b>      <b>Patent Certificate</b></p> <p>(पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)</p>		
<p>पेटेंट सं. / Patent No. : 467853</p> <p>आवेदन सं. / Application No. : 201941035975</p> <p>फाइल करने की तारीख / Date of Filing : 06/09/2019</p> <p>पेटेंटी / Patentee : Indian Space Research Organisation</p> <p>आविष्कारकर्ता का नाम / Name of Inventor(s) : 1.Sreelal S 2.Smitha Jose 3.Akshay Chauhan 4.Bibin Varghese</p>		
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में वयाप्रकटित <b>A DIGITAL INTERFACE CIRCUIT FOR RESISTIVE BRIDGE TYPE SENSORS</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2019 के छठे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>A DIGITAL INTERFACE CIRCUIT FOR RESISTIVE BRIDGE TYPE SENSORS</b> as disclosed in the above mentioned application for the term of 20 years from the 6<sup>th</sup> day of September 2019 in accordance with the provisions of the Patents Act, 1970.</p>		
		
<p>अनुदान की तारीख Date of Grant : 09/11/2023</p>		<p> 02c दिवस Controller of Patents</p>
<p><b>टिप्पणी -</b> इस पेटेंट के वरीकरण के लिए वीजा, यदि इसे बनाए रखा जाय है, सितम्बर 2021 के छठे दिन से और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।</p> <p><b>Note.</b> - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 6<sup>th</sup> day of September 2021 and on the same day in every year thereafter.</p>		





## VSSC

268

Un-Symmetric Tang and Clevis Joint Configuration

469546

An un-symmetric tang and clevis joint configuration for connecting a crew escape solid rocket motor case (118) to a multiple nozzle convergent hardware, wherein said tang and clevis joint configuration comprising: - a holding element for firmly fastening said clevis with said tang - at least three O-ring seals, a primary O-ring seal and two secondary O-ring seals configured to act as a pressure seal for preventing any leakage of hot combustion gases through said tang and clevis joint, - a capture feature provided on said tang for aligning said tang with said clevis, - a strap ring with two halves configured to clasp said holding element, - at least three slit holes configured to ease the integration of said crew 20 escape solid rocket motor case with said multiple nozzle convergent hardware, wherein said tang and clevis possess identical inner diameters, wherein said capture feature has a uniform inner diameter in conformity with said clevis here in said multiple nozzle convergent hardware are positioned at a prerequisite cant angle for producing higher thrust within a stipulated duration, wherein said crew escape solid rocket motor case comprises of an end closure at one end and said clevis on the other end, and wherein said multiple nozzle convergent hardware comprises of said tang at one end and a nozzle end dome at the other end.





 <p><b>INTELLECTUAL PROPERTY INDIA</b> भारत (INDIA) SOCIO-ECONOMIC ASSOCIATION</p>	 नमो भगवते वासुदेवाय	श्रम सं/SL No. 044165603	
<b>पेटेंट कार्यालय, भारत सरकार</b> <b>पेटेंट प्रमाण पत्र</b>		<b>The Patent Office, Government Of India</b> <b>Patent Certificate</b>	
(पेटेंट नियमावली का नियम 74)		(Rule 74 of The Patents Rules)	
पेटेंट सं. / Patent No.	:	469546	
आवेदन सं. / Application No.	:	201641036281	
फाइल करने की तारीख / Date of Filing	:	24/10/2016	
पेटेंटी / Patentee	:	Indian Space Research Organisation	
आविष्कारकर्ता का नाम / Name of Inventor(s)	:	1. Paul Murugan J 2. Thomas Kurian 3. Bagavathiappan R 4. Levin G 5. Jayaprakash J	
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित <b>UN-SYMMETRIC TANG AND CLEVIS JOINT CONFIGURATION</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2016 के चौबीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>UN-SYMMETRIC TANG AND CLEVIS JOINT CONFIGURATION</b> as disclosed in the above mentioned application for the term of 20 years from the 24<sup>th</sup> day of October 2016 in accordance with the provisions of the Patents Act, 1970.</p>			
			
अनुदान की तारीख Date of Grant :	16/11/2023		 २८८ दिवस Controller of Patents
<p><b>टिप्पणी -</b> इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय, अक्टूबर 2018 के चौबीसवें दिन को और उसके पचास प्रत्येक वर्ष में उन्नीस दिवस होय।</p> <p><b>Note. -</b> The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 24<sup>th</sup> day of October 2018 and on the same day in every year thereafter.</p>			





## VSSC

269 Multi-Point Simultaneous Initiator

470967

The invention is in the field of initiation of high explosive systems, and relates to the simultaneous initiation of high explosive systems at discrete points, and more specifically to a Multi-Point Simultaneous initiator (MPSI) for the simultaneous initiation of high explosive systems. The invention is very much useful in the surface initiation of warheads, shaped charges, high explosive based composite systems, ammunition etc for defence applications where a simultaneous initiation with simultaneity less than one micro second is desirable. The invention is also useful for initiation of multiple events employing pyro circuit of launch vehicles.







**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (DESIGNS) TRADE MARKS  
GEographical INDICATIONS



सत्यमेव जयते

क्रम सं./SL No :044166040



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	470967
आवेदन सं. / Application No.	6146/CHE/2015
फाइल करने की तारीख / Date of Filing	16/11/2015
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.Dr. Nallaperumal M 2.Shri Piyushkanti Kar 3.Shri Bishwajyoti Dutta Majumdar 4.Shri Venugopalan K 5.Shri Umasankar S 6.Shri Baby Abraham 7.Dr. AG Rajendran

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **MULTI-POINT SIMULTANEOUS INITIATOR** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2015 के सोलहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **MULTI-POINT SIMULTANEOUS INITIATOR** as disclosed in the above mentioned application for the term of 20 years from the 16<sup>th</sup> day of November 2015 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 21/11/2023

Date of Grant :





Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, नवम्बर 2017 के सोलहवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 16<sup>th</sup> day of November 2017 and on the same day in every year thereafter.





## VSSC

270

**High Pressure Equipment for Measuring Burn Rate of Solid Propellants using Ultrasonic Pulse Echo Technique**

472767

This invention relates to a high pressure equipment for measuring burn rate of solid propellants. The equipment includes a combustion chamber assembly for providing a chamber for the combustion of propellant section during test; a gas vessel subassembly for using to temporally store the combustion gases at the required pressure, a flow plug subassembly for providing interconnection between various components in the high pressure equipment, a combustion chamber support structure subassembly for supporting the combustion chamber assembly, a gas vessel support structure subassembly for supporting the gas vessel on the vessel stand, a sensor holder subassembly is configured to attach a sensor on a ultrasound window, wherein the sensor uses ultrasonic pulse echo technique to measure burn rate of the solid propellants.






**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044166656



पेटेंट सं. / Patent No.	472767
आवेदन सं. / Application No.	201841016070
फाइल करने की तारीख / Date of Filing	27/04/2018
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1. Shri Rajesh Mathew 2. Shri Kiran Pinumalla 3. Shri Yezhil Arasu A 4. Shri Thomas Kurian 5. Dr. Jeenu R

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **HIGH PRESSURE EQUIPMENT FOR MEASURING BURN RATE OF SOLID PROPELLANTS USING ULTRASONIC PULSE ECHO TECHNIQUE** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अप्रैल 2018 के सत्ताईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **HIGH PRESSURE EQUIPMENT FOR MEASURING BURN RATE OF SOLID PROPELLANTS USING ULTRASONIC PULSE ECHO TECHNIQUE** as disclosed in the above mentioned application for the term of 20 years from the 27<sup>th</sup> day of April 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 24/11/2023  
Date of Grant :

  
Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अप्रैल 2020 के सत्ताईसवें दिन को और उसके पचास प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 27<sup>th</sup> day of April 2020 and on the same day in every year thereafter.



## URSC

271

**Method for Flat Absorber Black Titania (TiO<sub>2</sub>) Coating on A Substrate By Plasma Electrolytic Oxidation**

472838

The present disclosure relates, in general, to plasma-electrolytic oxidation, and more specifically, relates to a method for flat absorber black titania (TiO<sub>2</sub>) coating on a substrate by plasma electrolytic oxidation.

Thermal control coatings are one of the most common passive thermal control elements used in spacecraft to maintain an optimum temperature range for all the sub-systems during its entire mission life. This is achieved by selecting surfaces with a suitable combination of thermo-optical properties, namely, solar absorptance ( $\alpha_S$ ) and infrared emittance ( $\epsilon_{IR}$ ). For example, a flat absorber coating characterized by high  $\alpha_S$  and high  $\epsilon_{IR}$  absorbs almost all the energy incident upon it throughout the spectral range thereby ensuring perfect radiation coupling between the operational and standby components. Some examples of these coatings are black anodizing, black nickel coatings and black paints.







**INTELLECTUAL  
PROPERTY INDIA**  
PATENT (DESIGN) TRADE MARK  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

क्रम सं./SL No :044166676



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	472838
आवेदन सं. / Application No.	202241050987
फाइल करने की तारीख / Date of Filing	07/09/2022
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.ANJU MURALEEDHARAN PILLAI 2.RAJENDRA ALEVOOR 3.MURUGAN THIRAVIAM

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **METHOD FOR FLAT ABSORBER BLACK TITANIA (TiO<sub>2</sub>) COATING ON A SUBSTRATE BY PLASMA ELECTROLYTIC OXIDATION** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2022 के सातवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **METHOD FOR FLAT ABSORBER BLACK TITANIA (TiO<sub>2</sub>) COATING ON A SUBSTRATE BY PLASMA ELECTROLYTIC OXIDATION** as disclosed in the above mentioned application for the term of 20 years from the 7<sup>th</sup> day of September 2022 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 24/11/2023  
Date of Grant :



Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, सितम्बर 2024 के सातवें दिन को और उसके परवात प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 7<sup>th</sup> day of September 2024 and on the same day in every year thereafter.



## SCL

272

**A Method to Optimize the Performance of A Wide Band Gap Semiconductor Device and its Fabrication Technique**

474283

The present disclosure relate to a method to optimize electrical characteristics and breakdown voltage of III-N based wide bandgap High Electron Mobility Transistor (HEMT) devices. Specifically, it relates to epitaxial growth of a thin layer of III-N cap on another IIIN barrier layer used in a HEMT device, such that the grown III-N cap layer is not in immediate contact with the gate terminal in the drain access region. The present disclosure also provides a process route to realize such device in an enhancement mode.








**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044167099



पेटेंट सं. / Patent No.	474283
आवेदन सं. / Application No.	202141028130
फाइल करने की तारीख / Date of Filing	23/06/2021
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.DHAYALAN, Sathish kumar 2.SHARMA, Anil 3.HOODA, Manish kumar 4.SINGH, Surinder

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में ब्यापककटित **A METHOD TO OPTIMIZE THE PERFORMANCE OF A WIDE BAND GAP SEMICONDUCTOR DEVICE AND ITS FABRICATION TECHNIQUE** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2021 के तेरहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A METHOD TO OPTIMIZE THE PERFORMANCE OF A WIDE BAND GAP SEMICONDUCTOR DEVICE AND ITS FABRICATION TECHNIQUE** as disclosed in the above mentioned application for the term of 20 years from the 23<sup>rd</sup> day of June 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 29/11/2023  
Date of Grant :

Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जून 2023 के तेरहवें दिन को और उसके परवर्त प्रत्येक वर्ष में उन्ही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 23<sup>rd</sup> day of June 2023 and on the same day in every year thereafter.





## IISU

273

**A Method of Dynamic Balancing of a Payload Mechanism with Unsymmetrical Rotor under Orbital Conditions on Ground**

475791

The present disclosure relates to a method of dynamic balancing of a fully integrated inseparable payload mechanism for orbital conditions on ground. The method includes initial static balancing a payload mechanism in ambient conditions for eliminating the effect of gravity during rotation of the payload in vertical orientation and dynamic balancing the payload mechanism in a vacuum environment for eliminating the pseudo unbalance due to air drag. The present disclosure also relates to a dynamic balancing setup comprising a payload mechanism with a rotor, stator and bearings with an inseparable antenna mounted over a transducer inside a vacuum chamber. In the present disclosure balancing is carried out by simulating on-orbit conditions, via vacuum & minimizing the effect of gravity induced moment, on ground to reduce mass unbalance alone of the rotor by selectively eliminating pseudo unbalances due to air drag and gravity.





**INTELLECTUAL  
PROPERTY INDIA**  
MINISTRY OF TRADE & INDUSTRY  
GOVERNMENT OF INDIA



सत्यमेव जयते

ब्रम् सं/SL No :044167621



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	475791
आवेदन सं. / Application No.	202341017509
फाइल करने की तारीख / Date of Filing	15/03/2023
पेटेंटी / Patentee	INDIAN SPACE RESEARCH ORGANISATION
अविष्कारकों का नाम / Name of Inventor(s)	1. RAJENDRAN, Dileep 2. MONY, Abhilash 3. SIVANANDAN, Dhanesh 4. NARAYANA, Gireesh Sharma

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रवर्तित **A METHOD OF DYNAMIC BALANCING OF A PAYLOAD MECHANISM WITH UNSYMMETRICAL ROTOR UNDER ORBITAL CONDITIONS ON GROUND** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2023 के पंद्रहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A METHOD OF DYNAMIC BALANCING OF A PAYLOAD MECHANISM WITH UNSYMMETRICAL ROTOR UNDER ORBITAL CONDITIONS ON GROUND** as disclosed in the above mentioned application for the term of 20 years from the 15<sup>th</sup> day of March 2023 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 30/11/2023  
Date of Grant :

Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, मार्च 2025 के पंद्रहवें दिन को और उसके दरवाज प्रत्येक वर्ष में उन्नी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 15<sup>th</sup> day of March 2025 and on the same day in every year thereafter.



## VSSC

274

**A Device for In-Situ Load Testing of Crimped Bearings and Potted Inserts**

477717

The present disclosure relates to test equipment for axial test loading and more particularly relates to a device for in-situ axial load testing of crimped bearings and potted inserts. The device comprises a base plate abutting a housing in which at least one test article is installed; a sleeve which axially slides over the base plate; arrester screws which are fixed to the base plate and limits the axial movement of a sleeve; a tension bolt and a stud, for loading the test article by torqueing; a compression spring, housed between the base plate and the sleeve. The axial movement of the sleeve is constrained by a screw and slot arrangement. The device is characterized by a base plate having a calibrated load-deflection scale to measure the axial movement of the compression spring by guiding the indicator ring over the calibrated scale.








**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044168268



पेटेंट सं. / Patent No.	477717
आवेदन सं. / Application No.	202341025323
फाइल करने की तारीख / Date of Filing	03/04/2023
पेटेंटी / Patentee	INDIAN SPACE RESEARCH ORGANISATION
अविष्कारकों का नाम / Name of Inventor(s)	1.NAIR, Aravind Reghunathan 2.THANGAVELU, Immanuel Inbaraj

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A DEVICE FOR IN-SITU LOAD TESTING OF CRIMPED BEARINGS AND POTTED INSERTS** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अप्रैल 2023 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A DEVICE FOR IN-SITU LOAD TESTING OF CRIMPED BEARINGS AND POTTED INSERTS** as disclosed in the above mentioned application for the term of 20 years from the 3<sup>rd</sup> day of April 2023 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 08/12/2023  
Date of Grant :

Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अप्रैल 2025 के तीसरे दिन को और उसके पश्चात प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 3<sup>rd</sup> day of April 2025 and on the same day in every year thereafter.



## IISU

275 Refractive optics based Ring Laser Gyroscope

477751

The present disclosure relates to a gyroscope and more particularly, to a refractive optics based ring laser gyroscope. BACKGROUND Generally, a mechanical based inertial rotation sensor senses angular rotation by monitoring motion of a rotor with a principle of conservation of angular momentum. However, the mechanical inertial rotation sensor has its limitation, for example, acceleration (g) sensitivity, issues related to moving mechanical parts, and high drift rates. To overcome these problems, optical gyroscopes are developed.





  	
<b>पेटेंट कार्यालय, भारत सरकार</b> <b>The Patent Office, Government Of India</b> <b>पेटेंट प्रमाण पत्र</b> <b>Patent Certificate</b> (पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)	
पेटेंट सं. / Patent No.	: 477751
आवेदन सं. / Application No.	: 202341016083
फाइल करने की तारीख / Date of Filing	: 10/03/2023
पेटेंटी / Patentee	: Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	: 1.DEV, Devanesan Sam Dayala 2.KIZHAKKEPPAT, Usha 3.KUNNATHU, Narayanan Kutty Raman Pilla 4.RAJAGOPALAN, Raman 5.JOHN, Bindu 6.ENNI, Krishna 7.GEORGE, Arun 8.ROY, Ajay Palakkappilly
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में प्रकाशित <i>Refractive optics based Ring Laser Gyroscope</i> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2023 के दसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <i>Refractive optics based Ring Laser Gyroscope</i> as disclosed in the above mentioned application for the term of 20 years from the 10<sup>th</sup> day of March 2023 in accordance with the provisions of the Patents Act, 1970.</p>	
अनुदान की तारीख Date of Grant :	06/12/2023
  <b>Controller of Patents</b>	
<p><b>टिप्पणी -</b> इस पेटेंट के वीरकारण के लिए फीस, यदि इसे बरकरार रखा जाय है, मार्च 2025 के दसवें दिन को और उसके पश्चात उसके वर्ष में उन्नीसवें दिन देय होगी।</p> <p><b>Note.</b> - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 10<sup>th</sup> day of March 2025 and on the same day in every year thereafter.</p>	







## VSSC

276

**A Process for Polymer-Derived CF/SiBOC Ceramic Matrix Composites**

480151

The present invention discloses a process for the fabrication of Ceramic Matrix Composites (CMCs) having high mechanical strength and thermo-oxidative stability using carbon fiber, without an inter-phase coating as the reinforcement and borosiloxane precursor-derived silicon boron oxycarbide (SiBOC) as the ceramic matrix which is stable against phase change and crystallization at high temperature, as high as 1500°C.





**INTELLECTUAL  
PROPERTY INDIA**  
INDIAN PATENT OFFICE  
SOCIOLOGICAL RESEARCH



भारत सरकार  
भारत सरकार

क्रम सं/SL No :044169043



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	480151
आवेदन सं. / Application No.	201841020417
फाइल करने की तारीख / Date of Filing	31/05/2018
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.Sreejith K. J. 2.Anil Painuly 3.B. V. Rajasekhar 4.Shyin P.P. 5.Vipin Vijay V. 6.Renjith Devasia 7.P. V. Prabhakaran 8.S Packirisamy

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A PROCESS FOR POLYMER-DERIVED CF / SIBOC CERAMIC MATRIX COMPOSITES** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मई 2018 के इकतीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A PROCESS FOR POLYMER-DERIVED CF / SIBOC CERAMIC MATRIX COMPOSITES** as disclosed in the above mentioned application for the term of 20 years from the 31<sup>st</sup> day of May 2018 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 11/12/2023  
Date of Grant :



Controller of Patents

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, मई 2020 के इकतीसवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगा।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 31<sup>st</sup> day of May 2020 and on the same day in every year thereafter.



## LEOS

277

**Immersed Thermistor Bolometer for Spacecraft Earth Sensors Application**

481843

The present invention relates to an immersed bolometer infrared detector in which a thin film thermistor sensor element is attached to an impedance layer by electron beam evaporation method. The architecture of the immersed bolometer detector according to the present invention is a single thermistor sensor element of high temperature coefficient of resistance placed at the focus of a hemispherical lens made of germanium for optical immersion. A second thermistor element with similar electrical characteristics is placed away from the optical axis for compensating the ambient temperature. Polyimide is selected as impedance layer considering functional properties such as electrical insulation, thermal conductance of the material appropriate to achieve desired response time of the detector to suit the application. Custom built rugged electro-optical packaging is incorporated in Bolometer fabrication to achieve a space environment resilient device.







**INTELLECTUAL  
PROPERTY INDIA**  
MINISTRY OF SCIENCE & TECHNOLOGY



भारत सरकार  
भारत सरकार

क्रम सं/SL No :044169566



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	481843
आवेदन सं. / Application No.	201641038400
फाइल करने की तारीख / Date of Filing	10/11/2016
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1. Shivaprasad Karanth 2. Sumesh M. A. 3. Beno Thomas M. 4. Viswanathan 5. Anand Chandran G. 6. Naranyanamurthy H. R. 7. L. V. Prasad 8. Amuda P. R.

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **IMMERSED THERMISTOR BOLOMETER FOR SPACECRAFT EARTH SENSORS APPLICATION** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2016 के दसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **IMMERSED THERMISTOR BOLOMETER FOR SPACECRAFT EARTH SENSORS APPLICATION** as disclosed in the above mentioned application for the term of 20 years from the 10<sup>th</sup> day of November 2016 in accordance with the provisions of the Patents Act, 1970.



  
**Controller of Patents**

अनुदान की तारीख : 13/12/2023  
Date of Grant :

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, नवम्बर 2018 के दसवें दिन को और उसके परशांत प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 10<sup>th</sup> day of November 2018 and on the same day in every year thereafter.

\*यदि पेटेंटी व अविष्कारकों की संख्या अधिक है, पेटेंटी व अविष्कारकों के नाम कुल संख्या 2 पर जारी है।  
 \*Since the Number of Patentees / Inventors is more, the name of Patentees / Inventors are continued on Page No. 2



## URSC

278

A Filter Wheel Drive Mechanism for Spacecraft Payloads

480818

The present invention provides a filter wheel drive mechanism using SMA wire as the prime mover in configuration with an offset connection assembly wherein an offset pin is eccentrically mounted on a shaft to produce motion at the axis of rotation of filter wheel. The SMA wire is specifically configured at predefined positions along with the integration of an offset connection assembly, converts the linear motion of SMA wire into rotational motion of filter wheel upon actuation of SMA wire. Consequently, it provides a periodic rotational stepped motion of the filter wheel in either direction and ensures a quality mechanism design that is reliable in operation and offers mass saving. This rotational motion is further increased by the configuration of preloaded leaf spring which functions as a launch restraint cum position retainer by providing a requisite torque during rotation of the offset pin and also acts as restraint to provide sufficient detent to hold the filter wheel in its intended orientation.








**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044169228



पेटेंट सं. / Patent No.	480818
आवेदन सं. / Application No.	201741006832
फाइल करने की तारीख / Date of Filing	27/02/2017
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.Abhinandan Kapoor 2.Huvinahally Nanjunda Sharma Suresha Kumar 3.Gaurav Sharma 4.Khangat Nairvedu Sajeeesh 5.Narasimiah Viswanatha 6.Subash Yadav

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A FILTER WHEEL DRIVE MECHANISM FOR SPACECRAFT PAYLOADS** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2017 के सप्ताहसबे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A FILTER WHEEL DRIVE MECHANISM FOR SPACECRAFT PAYLOADS** as disclosed in the above mentioned application for the term of 20 years from the 27<sup>th</sup> day of February 2017 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 12/12/2023  
Date of Grant :

  
Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, कार्या 2019 के सप्ताहसबे दिन को और उसके पचास वर्षक वर्ष में पूरी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 27<sup>th</sup> day of February 2019 and on the same day in every year thereafter.





## URSC

279

**Process of RF Reflective Mesh Gore Fabrication for Large RIB type Deployable Antenna**

483456

The present disclosure relates to a method of fabrication of mesh gores for a large deployable antenna. The method includes generating a template having two dimensional co-ordinates of mesh gores from a three-dimensional paraboloid for mesh gore shaping; fabricating a mesh loading fixture capable of bidirectional loading to ensure uniform distribution of mesh tension among all the gores and fabrication of composite mesh gores by a hand layup process and a vacuum bagging process for obtaining mesh gores with peripheral stiffness. The method of fabrication provides mesh gores with a combination of CFRP prepregs and Kapton layers sandwiching the reflecting mesh for assembly with a deployable antenna. The present disclosure provides for simple fabrication method for mesh gores and its assembly with deployable members (RIBS) for fabricating large deployable antennas for space applications and terrestrial antennas.





**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (DESIGNS) TRADE MARKS  
CINEMA RIGHTS



सत्यमेव जयते

क्रम सं./SL No.:044170081



**पेटेंट कार्यालय, भारत सरकार**

**पेटेंट प्रमाण पत्र**

(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**

**Patent Certificate**

(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	483456
आवेदन सं. / Application No.	202241069136
फाइल करने की तारीख / Date of Filing	30/11/2022
पेटेंटी / Patentee	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारकों का नाम / Name of Inventor(s)	1. UNDALE, Milind 2. SINGHAL, Prakher 3. GHATAK, Rahul 4. RATLAMI, Mariya 5. VENKATESH PRASAD H A

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **PROCESS OF RF REFLECTIVE MESH GORE FABRICATION FOR LARGE RIB TYPE DEPLOYABLE ANTENNA** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख नवम्बर 2022 के तीसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **PROCESS OF RF REFLECTIVE MESH GORE FABRICATION FOR LARGE RIB TYPE DEPLOYABLE ANTENNA** as disclosed in the above mentioned application for the term of 20 years from the 30<sup>th</sup> day of November 2022 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 15/12/2023

Date of Grant : 15/12/2023





Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, नवम्बर 2024 के तीसरे दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देव होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 30<sup>th</sup> day of November 2024 and on the same day in every year thereafter.



## VSSC

280

**Dissociable Coupling Assembly for Explosive Transfer Lines**

496837

A dissociable coupling assembly for explosive transfer lines has a set of housings mounted on a bracket fixed to an upper and lower stages of a launch vehicle and a set of adaptors mounted on the set of housings and assembled with the explosive transfer lines that is to be coupled. A spring cup is locked with one of the adaptors for locating a compression spring to be locked between the spring cup and the housings to ensure positive contact in a mating interface of the adaptor. Each adaptor is formed with a taper joint at the mating interface such that the adaptors are mated at its taper joint and kept in position by the helical compression spring assembled on one of the housings. The dissociable coupling assembly provides a positive contact under all vibration and shock levels of the launch vehicle and smooth disconnection during the launch vehicle stage separation.





 <p><b>INTELLECTUAL PROPERTY INDIA</b> भारत (INDIA) SOCIO-ECONOMIC ASSOCIATION</p>	 <p>सत्यमेव जयते</p>	<p>क्रम सं/SL No :044174252</p> 
<p><b>पेटेंट कार्यालय, भारत सरकार</b>      <b>The Patent Office, Government Of India</b></p> <p><b>पेटेंट प्रमाण पत्र</b>      <b>Patent Certificate</b></p> <p>(पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)</p>		
पेटेंट सं. / Patent No.	:	496837
आवेदन सं. / Application No.	:	201741019413
फाइल करने की तारीख / Date of Filing	:	02/06/2017
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	:	1.Cherian Thomas 2.Baby Abraham
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित <b>DISSOCIABLE COUPLING ASSEMBLY FOR EXPLOSIVE TRANSFER LINES</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जून 2017 के दूसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>DISSOCIABLE COUPLING ASSEMBLY FOR EXPLOSIVE TRANSFER LINES</b> as disclosed in the above mentioned application for the term of 20 years from the 2<sup>nd</sup> day of June 2017 in accordance with the provisions of the Patents Act, 1970.</p>		
		
अनुदान की तारीख Date of Grant :	10/01/2024	
		 <b>Controller of Patents</b>
<p><b>टिप्पणी -</b> इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बरकरार रखा जाय है, जून 2019 के दूसरे दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।</p> <p><b>Note.</b> - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 2<sup>nd</sup> day of June 2019 and on the same day in every year thereafter.</p>		





## IISU

281

**A Method and an Apparatus for Detachment of Soldered Surface Mount Devices (SMDs)**

497513

### TECHNICAL FIELD

The present invention relates to printed circuit board repair and modification, and to removing surface mount devices from printed circuit boards. More particularly, the present invention relates to method for detachment of soldered surface mount devices (SMDs) from the printed circuit boards.








**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044174457



पेटेंट सं. / Patent No.	497513
आवेदन सं. / Application No.	201841010290
फाइल करने की तारीख / Date of Filing	21/03/2018
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.Sajan Velukkutty 2.Gireesh Kumar 3.Jayaprasad Gopala Pillai 4.Pradeep Krishnan Nair 5.Baskaran Manickam

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित **A METHOD AND AN APPARATUS FOR DETACHMENT OF SOLDERED SURFACE MOUNT DEVICES (SMDS)** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2018 के इक्कीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदित किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A METHOD AND AN APPARATUS FOR DETACHMENT OF SOLDERED SURFACE MOUNT DEVICES (SMDS)** as disclosed in the above mentioned application for the term of 20 years from the 21<sup>st</sup> day of March 2018 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 10/01/2024  
Date of Grant :

Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, मार्च 2020 के इक्कीसवें दिन को और उसके पचास प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 21<sup>st</sup> day of March 2020 and on the same day in every year thereafter.





## VSSC

282

**Pre-Ceramic Adhesive Composition Providing Stronger Bonds at Higher Temperatures and Process for Preparing The Same**

498737

The invention is in the field of adhesive compositions used for high temperature bonding applications, and relates to a pre-ceramic adhesive composition for improved bonding, coating and gap or crack sealing applications at high temperatures, and more specifically to a carbon nano fibre reinforced preceramic adhesive composition for said applications and a process for preparing the same. The invention is very much useful in high temperature bonding of carbon and SiC based materials in launch vehicles and other applications.






क्रम सं./SL No :044174822



**पेटेंट कार्यालय, भारत सरकार**

**पेटेंट प्रमाण पत्र**

(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**

**Patent Certificate**

(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	498737
आवेदन सं. / Application No.	:	202341008794
फाइल करने की तारीख / Date of Filing	:	10/02/2023
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	:	1.Remani Sreeja 2.Deepa Devapal 3.Renjith Devasia

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में वधाप्रकटित **PRE-CERAMIC ADHESIVE COMPOSITION PROVIDING STRONGER BONDS AT HIGHER TEMPERATURES AND PROCESS FOR PREPARING THE SAME** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2023 के दसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **PRE-CERAMIC ADHESIVE COMPOSITION PROVIDING STRONGER BONDS AT HIGHER TEMPERATURES AND PROCESS FOR PREPARING THE SAME** as disclosed in the above mentioned application for the term of 20 years from the 10<sup>th</sup> day of February 2023 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 12/01/2024

Date of Grant :



Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, फरवरी 2025 के दसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उन्नीस दिन देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 10<sup>th</sup> day of February 2025 and on the same day in every year thereafter.



## VSSC

283

**Method of Repairing Defective Regions in a Cured Solid Propellant by Slurry Casting Process**

499002

The present invention relates to a method of repairing defective regions in a cured solid propellant comprising roughening of the surface of the defective region; coating the defective region with a reactive adhesive coating composition; casting of the coated region with a fresh propellant slurry under vacuum and curing of the solid propellant. The adhesive coating composition is obtained by blending isocyanate with 90 to 100 phr of hydroxyl terminated polybutadiene, 1 to 2 phr of polyhydroxy compound, 8 to 12 phr of carbon black and 0.5 to 2 phr of a catalyst. The advantage is that a strong interface with adhesive coating is established when compared to weak interface with direct propellant filling in atmospheric pressure. This avoids any defect in filled portion and porous interface.







**INTELLECTUAL  
PROPERTY INDIA**  
REGISTRATION & PROTECTION  
OF PATENTS, TRADE MARKS,  
DESIGNS, COPYRIGHTS, GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

क्रम सं./SL No.:044174913



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 499002
आवेदन सं. / Application No.	: 202141001323
फाइल करने की तारीख / Date of Filing	: 12/01/2021
पेटेंटी / Patentee	: Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	: 1.Sathis Kumar PS 2.Lakshmi Kanth RV 3.Vinay Paliwal 4.Ramlet U 5.Sojan P 6.Syam VS 7.CR Thomas

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **METHOD OF REPAIRING DEFECTIVE REGIONS IN A CURED SOLID PROPELLANT BY SLURRY CASTING PROCESS** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जनवरी 2021 के बारहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **METHOD OF REPAIRING DEFECTIVE REGIONS IN A CURED SOLID PROPELLANT BY SLURRY CASTING PROCESS** as disclosed in the above mentioned application for the term of 20 years from the 12<sup>th</sup> day of January 2021 in accordance with the provisions of the Patents Act, 1970.



  
**Controller of Patents**

अनुदान की तारीख : 13/01/2024  
Date of Grant : 13/01/2024

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जनवरी 2023 के बारहवें दिन को और उसके परवर्त प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 12<sup>th</sup> day of January 2023 and on the same day in every year thereafter.



## VSSC

284

**A Process for Preparing a Composite Cathode for Lithium Ion Cell**

499404

The present application provides a process for preparing a composite cathode for a lithium ion cell comprising the steps of: (i) forming a cathode slurry in a planetary mixing machine by mixing an active material, conducting diluent and binder; (ii) coating the slurry over an aluminium foil substrate in a coating machine at a speed 10 of 0.2-0.8 m/min; and (iii) calendaring of the cathode in a calendaring machine at a temperature of 50-150°C.





 <b>INTELLECTUAL PROPERTY INDIA</b> <small>भारत (INDIA) TRADE MARK SOCIOECONOMIC ASSOCIATION</small>	 कल्पम जयंत	क्रम सं./SL No.: 044175047 	
<b>पेटेंट कार्यालय, भारत सरकार</b> <b>पेटेंट प्रमाण पत्र</b>		<b>The Patent Office, Government Of India</b> <b>Patent Certificate</b>	
पेटेंट नियमावली का नियम 74)		(Rule 74 of The Patents Rules)	
पेटेंट सं. / Patent No.	:	499404	
आवेदन सं. / Application No.	:	201941009925	
फाइल करने की तारीख / Date of Filing	:	14/03/2019	
पेटेंटी / Patentee	:	Indian Space Research Organisation	
आविष्कारकर्ता का नाम / Name of Inventor(s)	:	1.S Aravamuthan 2.Mercy TD 3.Bibin John	
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में व्यापकृतित <b>A PROCESS FOR PREPARING A COMPOSITE CATHODE FOR LITHIUM ION CELL</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2019 के चौदहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>A PROCESS FOR PREPARING A COMPOSITE CATHODE FOR LITHIUM ION CELL</b> as disclosed in the above mentioned application for the term of 20 years from the 14<sup>th</sup> day of March 2019 in accordance with the provisions of the Patents Act, 1970.</p>			
			
अनुदान की तारीख Date of Grant :	15/01/2024		 २८८ नियंत्रक <b>Controller of Patents</b>
<p><b>टिप्पणी -</b> इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, मार्च 2021 के चौदहवें दिन को और उसके परवर्त प्रत्येक वर्ष के उसी दिन देय होगी।</p> <p><b>Note.</b> - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 14<sup>th</sup> day of March 2021 and on the same day in every year thereafter.</p>			







## URSC

285

**System and Method to Learn and Reconstruct Large Reference Images/Dem Onboard using Machine Learning**

499576

The present disclosure relates, in general, to a machine learning (ML) system, and more specifically, relates to a system and method to learn and reconstruct large reference images/Digital Elevation data (DEM) onboard using machine learning.





**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS | DESIGNS | TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

क्रम सं./SL No: 044175098



**पेटेंट कार्यालय, भारत सरकार**

**पेटेंट प्रमाण पत्र**

(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**

**Patent Certificate**

(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 499576
आवेदन सं. / Application No.	: 202241051539
फाइल करने की तारीख / Date of Filing	: 09/09/2022
पेटेंटी / Patentee	: Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	: ROBERT P

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **SYSTEM AND METHOD TO LEARN AND RECONSTRUCT LARGE REFERENCE IMAGES/DEM ONBOARD USING MACHINE LEARNING** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2022 के नौवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **SYSTEM AND METHOD TO LEARN AND RECONSTRUCT LARGE REFERENCE IMAGES/DEM ONBOARD USING MACHINE LEARNING** as disclosed in the above mentioned application for the term of 20 years from the 9<sup>th</sup> day of September 2022 in accordance with the provisions of the Patents Act, 1970.



  
**Controller of Patents**

अनुदान की तारीख : 16/01/2024

Date of Grant : 16/01/2024

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, सितम्बर 2024 के नौवें दिन को और उसके परवर्ती प्रत्येक वर्ष से उसी दिन देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 9<sup>th</sup> day of September 2024 and on the same day in every year thereafter.



## URSC

286

**A Mechanism for incorporating Dual Capacity in a Machine for Mass and Centre of Gravity Measurement**

499980

The invention relates to a mechanism for measuring mass and center of gravity of a specimen using load cells with two different capacities. Mass and Centre of Gravity (CG) of a specimen can be measured by using the three load cell method. It is prudent to combine measurements of both mass and CG in a single setup to avoid additional handling for two independent measurements for delicate specimen such as Spacecraft.







**INTELLECTUAL  
PROPERTY INDIA**  
REGISTRATION OF PATENTS  
AND TRADE MARKS



सत्यमेव जयते

क्रम सं./SL No.:044175212



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	499980
आवेदन सं. / Application No.	201841025062
फाइल करने की तारीख / Date of Filing	05/07/2018
पेटेंटी / Patentee	INDIAN SPACE RESEARCH ORGANISATION
आविष्कारकों का नाम / Name of Inventor(s)	I.P. SHRAVAN KUMAR 2.A. SEKAR

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A MECHANISM FOR INCORPORATING DUAL CAPACITY IN A MACHINE FOR MASS AND CENTRE OF GRAVITY MEASUREMENT** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जुलाई 2018 के पांचवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A MECHANISM FOR INCORPORATING DUAL CAPACITY IN A MACHINE FOR MASS AND CENTRE OF GRAVITY MEASUREMENT** as disclosed in the above mentioned application for the term of 20 years from the 5<sup>th</sup> day of July 2018 in accordance with the provisions of the Patents Act, 1970.



  
**Controller of Patents**

अनुदान की तारीख : 16/01/2024  
Date of Grant :

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जुलाई 2020 के पांचवें दिन को और उसके पचास प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 5<sup>th</sup> day of July 2020 and on the same day in every year thereafter.



## VSSC

287

Oxygen Emanating Composite Solid Propellants

500758

The invention is in the field of propellants used in different kinds of propulsion systems, and relates to a solid propellant useful in said propulsion systems and more specifically to a composite solid propellant which liberates oxygen during combustion. The invention finds application in pyrogen igniters used for the ignition of propulsion systems of solid motors, air breathing, hybrid, cryogenic and semi cryogenic engines.







**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (DESIGNS) 1999-2002  
TRADE MARKS 1999-2002  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

क्रम सं./SL No :044175435



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	500758
आवेदन सं. / Application No.	202341008799
फाइल करने की तारीख / Date of Filing	10/02/2023
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.Sasidharakurup Rreshmi 2.Gopalakrishnan Santhosh 3.Sheela Gayathri 4.Muthirakkal Sreejith 5.Sudhi Suraj 6.Elizabeth John 7.Sharad Chandra Sharma

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **OXYGEN EMANATING COMPOSITE SOLID PROPELLANTS** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख फरवरी 2023 के दसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **OXYGEN EMANATING COMPOSITE SOLID PROPELLANTS** as disclosed in the above mentioned application for the term of 20 years from the 10<sup>th</sup> day of February 2023 in accordance with the provisions of the Patents Act, 1970.



  
**Controller of Patents**

अनुदान की तारीख : 18/01/2024  
Date of Grant :

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, कारवरी 2025 के दसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उन्नीस दिवस देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 10<sup>th</sup> day of February 2025 and on the same day in every year thereafter.





## SAC

288 | MMIC True Time Delay Shifter Circuit

503777

A monolithic microwave integrated circuit (MMIC) based true time delay shifter circuit for providing differential true time delay is provided. The MMIC includes two or more of circuits which are disposed in the MMIC and configured to provide a differential time delay based on digital control signals. Each circuit includes a reference path and a delay path. The two or more of circuits includes a first set of circuits realized using a self-switched constant R-network which are adapted to provide a first range of time delay, a second set of circuits realized using a ultra wide band self switched band-pass delay network which are adapted to provide a second range of time delay and a third set of circuits realized using a ultra wide band compensated delay network which are adapted to provide a third range of time delay.





**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (DESIGNS) TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

क्रम सं./SL No :044176330



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 503777
आवेदन सं. / Application No.	: 4405/CHE/2013
फाइल करने की तारीख / Date of Filing	: 27/09/2013
पेटेंटी / Patentee	: INDIAN SPACE RESEARCH ORGANISATION
आविष्कारकों का नाम / Name of Inventor(s)	: 1.SHRUTI SINHA 2.CH. V.N. RAO 3.PUNAM P. KUMAR

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **MMIC TRUE TIME DELAY SHIFTER CIRCUIT** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2013 के सत्ताईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुवत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **MMIC TRUE TIME DELAY SHIFTER CIRCUIT** as disclosed in the above mentioned application for the term of 20 years from the 27<sup>th</sup> day of September 2013 in accordance with the provisions of the Patents Act, 1970.



*(Signature)*  
Controller of Patents

अनुदान की तारीख : 27/01/2024  
Date of Grant :

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, सितम्बर 2015 के सत्ताईसवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 27<sup>th</sup> day of September 2015 and on the same day in every year thereafter.



## VSSC

289

**A Method for the Realization of Dense Isotropic  
HBORON NITRIDE and its Silica Composite**

504606

The invention is in the field of high temperature and high voltage insulators, and relates to a material used as insulator for said applications, and more specifically to a method of producing dense h-BN (hexagonal boron nitride) and BN/silica composite with isotropic properties where the material retains amorphous phase of silica in the composite. The invention is very much useful as an insulating material for the wall of the discharge chamber of electric propulsion thrusters. In addition to its use as anode liner /discharge chamber wall material in electric propulsion thrusters, the invention is useful as furnace insulators/muffles/crucibles, high temperature and high voltage electrical insulators, refractories like sintering setters, side dams in strip casting process, break rings in continuous casting, ceramic firing supports, glass forming fixtures, etc. The invention is also having molten metal applications and finds use in atomizing nozzles.







**INTELLECTUAL  
PROPERTY INDIA**  
REGISTRATION OF PATENTS  
AND TRADE MARKS



भारत सरकार  
भारत

क्रम सं./SL No :044176574



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 504606
आवेदन सं. / Application No.	: 202341021863
फाइल करने की तारीख / Date of Filing	: 27/03/2023
पेटेंटी / Patentee	: INDIAN SPACE RESEARCH ORGANISATION
आविष्कारकों का नाम / Name of Inventor(s)	: 1.Dr. Remyamol Thekkayil 2.Dr. Mappillatharayil Raman Ajith 3.Dr. Mukesh Ranjan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A METHOD FOR THE REALIZATION OF DENSE ISOTROPIC h-BORON NITRIDE AND ITS SILICA COMPOSITE** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2023 के सप्ताहसर्वे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A METHOD FOR THE REALIZATION OF DENSE ISOTROPIC h-BORON NITRIDE AND ITS SILICA COMPOSITE** as disclosed in the above mentioned application for the term of 20 years from the 27<sup>th</sup> day of March 2023 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 30/01/2024

Date of Grant :





Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, वर्ष 2025 के सप्ताहसर्वे दिन को और उसके पचास प्रत्येक वर्ष से उन्नीस दिन देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 27<sup>th</sup> day of March 2025 and on the same day in every year thereafter.



## VSSC

290

An Aluminium based pyrotechnic Igniter composition

506114

Over the years, solid rocket motors have been employed in launch vehicles and other similar applications. The burn rate of a solid rocket propellant is an important ballistic evaluation characteristic that must be properly evaluated to meet design criteria. There are various methods for determining the burn rate of a solid propellant. Evaluation using ballistic evaluation motors (BEM) is one such method, in which a small scale version of the rocket motor is fired using a pyrotechnic igniter and its ballistics are measured. Zirconium/potassium nitrate (ZN3) is the current pyrotechnic composition for the ballistic evaluation motor, with zirconium as the fuel and potassium nitrate as the oxidizer. Since zirconium powder is expensive and scarce, as well as prone to Electro Static Discharge (ESD), an alternative composition is required to meet this purpose.







**INTELLECTUAL  
PROPERTY INDIA**  
REGISTRATION & MARKETING  
SCIENTIFIC & TECHNICAL INVENTIONS



भारत सरकार  
भारत सरकार

क्रम सं./SL No :044177008



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 506114
आवेदन सं. / Application No.	: 202341021866
फाइल करने की तारीख / Date of Filing	: 27/03/2023
पेटेंटी / Patentee	: Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	: 1.Hariharanath Bodagala 2.Harikrishnan Erezhath Shani 3.Vineeth Gayathri Muraleedharan Pillai 4.Nimesh Sasidharan 5.Vikram Tiruchanur 6.Vinod Kumar Narayanan 7.Baby Abraham

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **AN ALUMINIUM BASED PYROTECHNIC IGNITER COMPOSITION** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2023 के सत्ताईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **AN ALUMINIUM BASED PYROTECHNIC IGNITER COMPOSITION** as disclosed in the above mentioned application for the term of 20 years from the 27<sup>th</sup> day of March 2023 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख : 01/02/2024

Date of Grant :





Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, वर्ष 2025 के सत्ताईसवें दिन को और उसके पचास प्रत्येक वर्ष से उन्नीस दिन देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 27<sup>th</sup> day of March 2025 and on the same day in every year thereafter.





## VSSC

291

**A Process for Preparing a Composite Anode for Lithium Ion Cell**

507282

The present invention pertains to a process for preparing a composite anode. Specifically, the present invention pertains to a process for preparation a composite anode for lithium ion cells, having excellent peel strength, specific capacity and capacity retention. In the recent years lithium ion cells have gained considerable attention as a power source for various applications viz. mobile phones, cameras, laptops and also for high-tech applications like military, aircraft, space and electric vehicles.







**पेटेंट कार्यालय, भारत सरकार**      **The Patent Office, Government Of India**  
**पेटेंट प्रमाण पत्र**      **Patent Certificate**  
 (पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	:	507282
आवेदन सं. / Application No.	:	201941033431
फाइल करने की तारीख / Date of Filing	:	20/08/2019
पेटेंटी / Patentee	:	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	:	1.S Aravamuthan 2.Mercy TD 3.Bibin John

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में वयाप्रकटित **A PROCESS FOR PREPARING A COMPOSITE ANODE FOR LITHIUM ION CELL** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2019 के बीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A PROCESS FOR PREPARING A COMPOSITE ANODE FOR LITHIUM ION CELL** as disclosed in the above mentioned application for the term of 20 years from the 20<sup>th</sup> day of August 2019 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 05/02/2024

Date of Grant : 05/02/2024

  
 Controller of Patents

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अगस्त 2021 के बीसवें दिन को और उसके पचास प्रत्येक वर्ष में उन्नीस दिन देय होगी।  
**Note -** The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 20<sup>th</sup> day of August 2021 and on the same day in every year thereafter.



## URSC

292

**Composite Sandwich Panels with Embedded Metallic Tubes and a Method of Manufacturing Thereof**

509787

A composite sandwich panel has face sheets laminated on both the top and bottom sides of panel, the face sheets are constructed with layers in cross ply lay-ups. The composite metallic blocks having pressurized metallic tubes are embedded within the face sheets and are covered with high density honey comb core. Adhesive layers added on the top and bottom sides of the high density honey comb core. Foaming adhesives are formed on the sides of the composite metallic blocks and high density honey comb core. The low density honey comb core is formed on the sides of the foaming adhesives. A method of manufacturing composite sandwich panel with embedded metallic tubes in stages is also provided.







**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (DESIGNS) TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

क्रम सं./SL No :044178207



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 509787
आवेदन सं. / Application No.	: 201941035706
फाइल करने की तारीख / Date of Filing	: 05/09/2019
पेटेंटी / Patentee	: Indian Space Research Organization
अविष्कारकों का नाम / Name of Inventor(s)	: 1.Shivanand M. Kamat 2.H A Venkatesh Prasad 3.Kumara V 4.Govindaraja T S 5.Kumar S 6.K G Srinivasan 7.R K Srinivasan 8.Ananda Murthy B R

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **COMPOSITE SANDWICH PANELS WITH EMBEDDED METALLIC TUBES AND A METHOD OF MANUFACTURING THEREOF** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2019 के पांचवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **COMPOSITE SANDWICH PANELS WITH EMBEDDED METALLIC TUBES AND A METHOD OF MANUFACTURING THEREOF** as disclosed in the above mentioned application for the term of 20 years from the 5<sup>th</sup> day of September 2019 in accordance with the provisions of the Patents Act, 1970.



*(Signature)*  
**पेटेंट नियंत्रक**  
Controller of Patents

अनुदान की तारीख : 12/02/2024  
Date of Grant : 12/02/2024

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि दोस वरार रखा जाय है, सितम्बर 2021 के पांचवें दिन को और उसके पचास प्रत्येक वर्ष में उन्नीस दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 5<sup>th</sup> day of September 2021 and on the same day in every year thereafter.

\*यदि पेटेंटी व अविष्कारकों की संख्या अधिक है, पेटेंटी व अविष्कारकों के नाम कुल संख्या 2 पर जारी है।  
\*Since the Number of Patentees / Inventors is more, the name of Patentees / Inventors are continued on Page No. 2



## ISRO

293

**Method and system for determining optimal attitude trajectory and optimal control for satellite attitude manoeuvres**

510833

Embodiments herein disclose a method for determining optimal attitude trajectory and optimal control for satellite attitude manoeuvres using a satellite control system (1000). The method includes receiving a guidance command from a ground station (200) of the satellite control system (1000) 5 and determining current state configurations of the satellite. Further, the method includes determining a plurality of actuation constraints and a plurality of momentum constraints associated with satellite attitude; and constructing a discrete-time constrained optimal control problem based on the current state configurations of the satellite and the plurality of actuation 10 constraints and the plurality of momentum constraints associated with the satellite. Further, the method includes solving the discrete-time constrained optimal control problem using a multiple shooting technique and determining an optimal state trajectory and a corresponding optimal control trajectory for the satellite attitude manoeuvres using the solved discrete-time 15 constrained optimal control problem.









**पेटेंट कार्यालय, भारत सरकार**      **The Patent Office, Government Of India**  
**पेटेंट प्रमाण पत्र**      **Patent Certificate**  
 (पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 510833
आवेदन सं. / Application No.	: 202121002971
फाइल करने की तारीख / Date of Filing	: 21/01/2021
पेटेंटी / Patentee	: 1. Indian Institute of Technology Bombay 2. Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	: 1. KARMVIR SINGH PHOGAT 2. Debasish Chatterjee 3. Ravi N Banavar 4. Harish Joglekar

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित **METHOD AND SYSTEM FOR DETERMINING OPTIMAL ATTITUDE TRAJECTORY AND OPTIMAL CONTROL FOR SATELLITE ATTITUDE MANOEUVRES** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जनवरी 2021 के इक्कीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **METHOD AND SYSTEM FOR DETERMINING OPTIMAL ATTITUDE TRAJECTORY AND OPTIMAL CONTROL FOR SATELLITE ATTITUDE MANOEUVRES** as disclosed in the above mentioned application for the term of 20 years from the 21<sup>st</sup> day of January 2021 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 14/02/2024  
 Date of Grant : 14/02/2024

  
 पेटेंट नियंत्रक  
 Controller of Patents

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जनवरी 2023 के इक्कीसवें दिन को और उसके पचास प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 21<sup>st</sup> day of January 2023 and on the same day in every year thereafter.





## VSSC

294 | A Connector Screw Lock Device

515580

The present invention discloses a connector screw lock device having a connector, at least one clamp, said clamp comprising a pair of limbs arranged parallel to each other and aligned along with an edge of said connector, wherein one of the limb comprising a hole for receiving a shank of a female screw lock; other limb comprising an open ended slot to hold hexagonal body of said female screw lock to prevent rotation of said female screw lock.







**पेटेंट कार्यालय, भारत सरकार**      **The Patent Office, Government Of India**  
**पेटेंट प्रमाण पत्र**      **Patent Certificate**  
 (पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 515580
आवेदन सं. / Application No.	: 201641001931
फाइल करने की तारीख / Date of Filing	: 19/01/2016
पेटेंटी / Patentee	: Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	: 1.Shri Krishnadas B 2.Shri Madhu VP

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित "A CLAMP FOR A CONNECTOR SCREW LOCK DEVICE" नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जनवरी 2016 के उन्नीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled "A CLAMP FOR A CONNECTOR SCREW LOCK DEVICE" as disclosed in the above mentioned application for the term of 20 years from the 19<sup>th</sup> day of January 2016 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 27/02/2024  
 Date of Grant :

  
 पेटेंट नियंत्रक  
 Controller of Patents

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जनवरी 2018 के उन्नीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उन्नीस दिवस देय होगी।

**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 19<sup>th</sup> day of January 2018 and on the same day in every year thereafter.



## VSSC

295 A Hybrid Thruster

518479

The present disclosure relates to a propulsion system and more particularly, relates to a restartable hybrid thruster for propelling space components, that is, small satellites in space. Generally, small satellites referred to as, smallsats, or cubesats, are used as a cost-effective means to carry out space research. The smallsats and the cubesats are specified by their form factors. Further, the small satellites are launched as a 15 secondary payload in the space. The small satellites are propelled by a small satellite propulsion system in the space. The small satellite propulsion system is configured to propel/operate the small satellites in the space, including manoeuvrability of the small satellites in an orbit in the space, correcting positioning of the small satellites in the space, changing orbit as per requirement in the space, etc.







**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (GOVERNMENT) 1970-2000  
SCIENTIFIC RESEARCH



सत्यमेव जयते

क्रम सं/SL No :044181071



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	518479
आवेदन सं. / Application No.	202341049819
फाइल करने की तारीख / Date of Filing	24/07/2023
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.KRISHNAN, Hrisheekesh 2.S, Ravi 3.SHRIIVASTAVA, Rakesh Kumar 4.VIJAYAN, Arun 5.RAGHAVAN PILLAI, Sujithkumar 6.PILLAI L, Aravindakashan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **A HYBRID THRUSTER** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख जुलाई 2023 के चौबीसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A HYBRID THRUSTER** as disclosed in the above mentioned application for the term of 20 years from the 24<sup>th</sup> day of July 2023 in accordance with the provisions of the Patents Act, 1970.



*(Signature)*  
**पेटेंट नियंत्रक**  
Controller of Patents

अनुदान की तारीख : 01/03/2024  
Date of Grant :

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, जुलाई 2025 के चौबीसवें दिन को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 24<sup>th</sup> day of July 2025 and on the same day in every year thereafter.



## VSSC

296

**Process for the Synthesis of Regenerable Sorbents for Carbon Dioxide Removal**

519288

The present application provides a process for synthesis of regenerable sorbent materials by spray drying technique. Background description includes information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.







**INTELLECTUAL  
PROPERTY INDIA**  
REGISTRATION OF PATENTS  
SCIENTIFIC INVENTIONS



सत्यमेव जयते

क्रम सं/SL No :044181487



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	519288
आवेदन सं. / Application No.	202341051870
फाइल करने की तारीख / Date of Filing	02/08/2023
पेटेंटी / Patentee	Indian Space Research Organisation
आविष्कारकों का नाम / Name of Inventor(s)	1.KOCHUKUNJU ADISSER SARALADEVI ABHILASH 2.DEEPTHI THOMAS 3.BENNY KATTIKANAL GEORGE

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **PROCESS FOR THE SYNTHESIS OF REGENERABLE SORBENTS FOR CARBON DIOXIDE REMOVAL** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अगस्त 2023 के दूसरे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **PROCESS FOR THE SYNTHESIS OF REGENERABLE SORBENTS FOR CARBON DIOXIDE REMOVAL** as disclosed in the above mentioned application for the term of 20 years from the 2<sup>nd</sup> day of August 2023 in accordance with the provisions of the Patents Act, 1970.



*(Signature)*  
पेटेंट नियंत्रक  
Controller of Patents

अनुदान की तारीख : 04/03/2024  
Date of Grant :

**टिप्पणी** - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अगस्त 2025 के दूसरे दिन को और उसके परवर्त प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 2<sup>nd</sup> day of August 2025 and on the same day in every year thereafter.





## VSSC

297

Low-Dielectric Ceramic Composition and a Process of Producing the Same

521467

The invention is in the field of temperature-stable ceramic composites, and relates to an ultra-low temperature co-fired ceramic, and more specifically to a low-dielectric ceramic composition and a process for its preparation. The invention provides a laminate, cylindrical disc and shaped substrate for various microwave dielectric applications. The excellent chemical compatibility with Al during co-firing, makes these composites suitable choice for Ultra Low Temperature Co-fired Ceramic (ULTCC) applications.







**पेटेंट कार्यालय, भारत सरकार**      **The Patent Office, Government Of India**  
**पेटेंट प्रमाण पत्र**      **Patent Certificate**  
 (पेटेंट नियमावली का नियम 74)      (Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	521467
आवेदन सं. / Application No.	202241057349
फाइल करने की तारीख / Date of Filing	06/10/2022
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.Basheer Masin 2.Karunanithi Ashok 3.Kuttan Prabhakaran 4.Hariharan Sreemoolanadhan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित **LOW-DIELECTRIC CERAMIC COMPOSITION AND A PROCESS OF PRODUCING THE SAME** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख अक्टूबर 2022 के छठे दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **LOW-DIELECTRIC CERAMIC COMPOSITION AND A PROCESS OF PRODUCING THE SAME** as disclosed in the above mentioned application for the term of 20 years from the 6<sup>th</sup> day of October 2022 in accordance with the provisions of the Patents Act, 1970.



अनुदान की तारीख : 07/03/2024  
 Date of Grant : 07/03/2024

  
 पेटेंट नियंत्रक  
 Controller of Patents

**टिप्पणी -** इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, अक्टूबर 2024 के छठे दिन को और उसके परवर्ती प्रत्येक वर्ष में उन्नीस दिवस देय होगी।  
**Note -** The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 6<sup>th</sup> day of October 2024 and on the same day in every year thereafter.



## VSSC

298

**High-Dielectric Ceramic, a Process of Producing the Same and Compact Ceramic Patch Antennas made Thereof**

523792

The invention is in the field of paraelectric ceramics, and relate to a paraelectric ceramic with high-permittivity or dielectric constant, and more specifically to a high dielectric ceramic and a process for preparing the same. It also realises compact ceramic patch antennas from the said ceramic. The invention is very much useful for a variety of applications including its use in microwave devices for miniature patch antennas, filters, diplexers, substrates, etc. The ceramic can be used to realize a large number of components for applications in RF and microwave frequency ranges.







**INTELLECTUAL  
PROPERTY INDIA**  
PATENTS (DESIGNS) TRADE MARKS  
GEOGRAPHICAL INDICATIONS



सत्यमेव जयते

क्रम सं/SL No :044183008 \*1



**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No.	: 523792
आवेदन सं. / Application No.	: 202341021868
फाइल करने की तारीख / Date of Filing	: 27/03/2023
पेटेंटी / Patentee	: INDIAN SPACE RESEARCH ORGANISATION
आविष्कारक (जहाँ लागू हो) / Inventor(s)	: 1.Karunanithi Ashok 2.Basheer Masin 3.Hariharan Sreemoolanadhan 4.Manoj Joseph 5.Sainudeen Femina Beegum 6.Karakandiylil Mukundan

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथावर्णित **HIGH-DIELECTRIC CERAMIC, A PROCESS OF PRODUCING THE SAME AND COMPACT CERAMIC PATCH ANTENNAS MADE THEREOF** नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2023 के सत्ताईसवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **HIGH-DIELECTRIC CERAMIC, A PROCESS OF PRODUCING THE SAME AND COMPACT CERAMIC PATCH ANTENNAS MADE THEREOF** as disclosed in the above mentioned application for the term of 20 years from the 27<sup>th</sup> day of March 2023 in accordance with the provisions of the Patents Act, 1970.



  
**पेटेंट नियंत्रक**  
**Controller of Patent**

अनुदान की तारीख : 12/03/2024  
Date of Grant :

**टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जायक है, मार्च 2025 के सत्ताईसवें दिन को और उसके पश्चात प्रत्येक वर्ष से उसी दिन देय होगी।**  
**Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 27<sup>th</sup> day of March 2025 and on the same day in every year thereafter.**  
**\* सुद्धा प्रति / Corrected Copy**



## VSSC

299

An Actuator Assembly for a Ring Laser Gyroscope

527751

The present disclosure aims to provide a ring laser gyroscope with the creation of a plurality of arch-shaped slits between the outer rim surface and the inner rim surface of the dither flexure assembly that allows for thermal expansion without placing any stress on the gyro block.

In an embodiment, an actuator assembly includes a hub, a rim, and a plurality of spokes. The rim has an outer rim surface, an inner rim surface and a plurality of arch-shaped slits. The outer rim surface defines an outer perimeter of the rim. The inner rim surface defines an inner perimeter of the rim. Further, the plurality of arch-shaped slits between the outer rim surface and the inner rim surface. The plurality of spokes extends radially outward from the hub to the inner rim surface. The hub and the plurality of spokes are adapted to undergo thermal expansion and contraction, and the plurality of arch-shaped slits is adapted to accommodate the thermal expansion and contraction of the hub and the plurality of spokes.





 <p><b>INTELLECTUAL PROPERTY INDIA</b> <small>MINISTRY OF LAW AND JUSTICE INDIAN PATENT ACT, 1970</small></p>	 सत्यमेव जयते	क्रम सं/SL No :044184264 	
<b>पेटेंट कार्यालय, भारत सरकार</b> <b>पेटेंट प्रमाण पत्र</b>   (पेटेंट नियमावली का नियम 74)		<b>The Patent Office, Government Of India</b> <b>Patent Certificate</b>   (Rule 74 of The Patents Rules)	
पेटेंट सं. / Patent No.	:	527751	
आवेदन सं. / Application No.	:	202341018309	
फाइल करने की तारीख / Date of Filing	:	17/03/2023	
पेटेंटी / Patentee	:	Indian Space Research Organisation	
आविष्कारकों का नाम / Name of Inventor(s)	:	1. ROY, Ajay Palakkapilly 2. DEV, Devanesan Sam Dayala 3. NARAYANA, Gireesh Shama 4. GEORGE, Arun 5. PARATALA, Badarinath 6. ENNI, Krishna 7. SRIPADMANABHAN, Paul Pandian	
<p>प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में यथाप्रकटित <b>AN ACTUATOR ASSEMBLY FOR A RING LASER GYROSCOPE</b> नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2023 के सत्रहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled <b>AN ACTUATOR ASSEMBLY FOR A RING LASER GYROSCOPE</b> as disclosed in the above mentioned application for the term of 20 years from the 17<sup>th</sup> day of March 2023 in accordance with the provisions of the Patents Act, 1970.</p>			
			
अनुदान की तारीख Date of Grant :	15/03/2024		
		 <b>पेटेंट नियंत्रक</b> <b>Controller of Patents</b>	
<p><b>टिप्पणी</b> - इस पेटेंट के वीरतापन के लिए फीस, यदि इसे बरकरार रखा जाव है, वर्ष 2025 के सत्रहवें दिन को और उसके पचास प्रत्येक वर्ष से उन्नीस दिन देव होगी।</p> <p><b>Note.</b> - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 17<sup>th</sup> day of March 2025 and on the same day in every year thereafter.</p>			







## VSSC

300

Cryo Digital Level Sensor Electronics (CDLSE)

529149

The present invention discloses a Cryo Digital Level Sensor Electronics (CDLSE) for accurate measurement of capacitance change proportional to the liquid level change in the level correction during cryogenic filling in Satellite Launch vehicles. The CDLSE includes a precision waveform generator for producing sine waveform, a charge amplifier for converting capacitance variations into voltage variations, a 6-pole high pass filter for filtering the output RMS voltage, a voltage amplifier for amplifying the charge amplifier voltage variations to +2.5 V scale, a True RMS to DC converter for converting the filtered RMS voltage to DC voltage and a 6-pole low pass filter for filtering the out-of-band signals at the output. The interference between two excitation voltages for two separate CDL sensors are eliminated by tuning the oscillator frequency. The CDLSE developed in-house caters to three-channel measurement. This unit gives an analog and digital output proportional to the capacitance change. The variation of the capacitance is accurately measured by the signal conditioner CDLSE.






**पेटेंट कार्यालय, भारत सरकार**  
**पेटेंट प्रमाण पत्र**  
(पेटेंट नियमावली का नियम 74)

**The Patent Office, Government Of India**  
**Patent Certificate**  
(Rule 74 of The Patents Rules)

क्रम सं./SL No :044184776



पेटेंट सं. / Patent No.	529149
आवेदन सं. / Application No.	201841008704
फाइल करने की तारीख / Date of Filing	09/03/2018
पेटेंटी / Patentee	Indian Space Research Organisation
अविष्कारकों का नाम / Name of Inventor(s)	1.Shri Jacob Zachariah 2.Smt. Sheeja Mathews 3.Smt. Lekha CR 4.Shri Pradeep N 5.Shri Vinod P 6.Shri Mookiah T

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में वयाप्रकटित **CRYO DIGITAL LEVEL SENSOR ELECTRONICS (CDLSE)** नामक अविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख मार्च 2018 के नौवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **CRYO DIGITAL LEVEL SENSOR ELECTRONICS (CDLSE)** as disclosed in the above mentioned application for the term of 20 years from the 9<sup>th</sup> day of March 2018 in accordance with the provisions of the Patents Act,1970.



*(Signature)*  
**पेटेंट नियंत्रक**  
Controller of Patents

अनुदान की तारीख : 19/03/2024  
Date of Grant : 19/03/2024

**टिप्पणी** - इस पेटेंट के वरीकरण के लिए फीस, यदि इसे बनाए रखा जाय है, मार्च 2020 के नौवें दिन को और उसके पचास प्रत्येक वर्ष में उही दिन देय होगी।  
**Note.** - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 9<sup>th</sup> day of March 2020 and on the same day in every year thereafter.



## Copyrights

Package for Jalashay Capacity Estimation and Storage Loss Analysis - (KSHAMTA)

Satellite Photogrammetry Software for Indian Remote Sensing Missions (SAPHIRE)

Robust Airborne Synthetic Aperture Radar (SAR) Processing Software

Software for Improvement in Accuracy of Group Measurement using VNA 8510C

Antenna Near Field Measurement Processing Software

Cartosoft

Satellite Photogrammetry Software for Indian Remote Sensing Missions (SAPHIRE-C)

Stereo Strip Triangulation (SST) Software

E Plan

ISRO/CRAGRO

Network Monitoring Tool

E Recruitment

Remote Job Submission

CHAMBERDESIGN

SHELLBUCKLING

Method and Software for evaluation of TR Module

SEU Fault Injection Tool (SEFIT)

Passage to the Moon (English)

Passage to the Moon (Hindi)

Intelligent Video Surveillance System

SACIMAGE Software Library

OPTOSOFT Software Package

Optosoft for design of optical coatings

VTL LIBMAN Video Tape/Cassette Library Information Software

GEOIMAGE Software Library for IRS 1C





S.No	Title of Copy Right	Category	Centre
1	Package for Jalashay Capacity Estimation and Storage Loss Analysis - (KSHAMTA)	Literary	ISRO
2	Satellite Photogrammetry Software for Indian Remote Sensing Missions (SAPHIRE)	Literary	ISRO
3	Robust Airborne Synthetic Aperture Radar (SAR) Processing Software	Literary	ISRO
4	Software for Improvement in Accuracy of Group Measurement using VNA 8510C	Literary	ISRO
5	Antenna Near Field Measurement Processing Software	Literary	ISRO
6	Cartosoft	Literary	ISRO
7	Satellite Photogrammetry Software for Indian Remote Sensing Missions (SAPHIRE-C)	Literary	ISRO
8	Streo Strip Triangulation (SST) Software	Literary	ISRO
9	E Plan	Literary	ISRO
10	ISRO/CRAGRO	Literary	ISRO
11	Six Degrees of Freedom Trajectory Simulation Software for Reusable Launch Vehicle	Software	ISRO
12	Internal Software Asset Management (i SAM) software	Software	ISRO
13	A multi agent scheduling system, method and computer program for information extraction in heterogeneous distributed environment.	Software	ISRO
14	Software for mission design and analysis of interplanetary trajectories with multiple planets swing by capability (SMILE)	Software	ISRO
15	Bhuvan Gateway to Indian Earth Observation Data Products and Services	Software	ISRO
16	Nyquist Sampling based RRC filter with Sinx/X equalisation	Software	ISRO
17	Elementary uniform matrix Symmetrization	Literary	ISRO
18	Sliding Spotlight data processing software	Software	ISRO
19	Generation of Virtual 3D City Model	Software	ISRO
20	Hyper Spectral Data Visualisation Cube	Software	ISRO
21	Assembly and dis-assembly of complex 3D engineering model in Virtual Reality	Software	ISRO
22	Process Design Kit for SAC LTCC foundry using Applied Wave Research	Software	ISRO



23	Process Design Kit for SAC LTCC foundry using Advanced Design System	Software	ISRO
24	3D Surface Visualisation of Planetary data	Software	ISRO
25	Microwave Data Analysis Software	Software	ISRO
26	Electronics data management Software (Elcom)	Software	ISRO
27	Injection Valve Grouping Tool (InGROT)	Software	ISRO
28	Enterprise Monitor and Control (EMC) for IMGEOS	Literary	ISRO
29	Global Data Acquisition, Processing and Dissemination System (GLODAPS) for Oceansat-2 Scatterometer	Literary	ISRO
30	Ground Station Workflow Manager (SWFM)	Literary	ISRO
31	Web based Data Downlink Request Management for IRS Ground Stations	Literary	ISRO
32	Data Analysis System for Throughput Assessment of Indian Remote Sensing Satellite Data Products Generation Chain : A Data Warehouse Approach	Literary	ISRO
33	VEBSOFT	Literary	ISRO
34	Indian Regional Navigation Satellite System Signal in Space ICD for Standard Positioning Service Version 1.0	Literary	ISRO
35	MIL-STD-1553 Remote Terminal Intellectual Property core for FPGA/ASIC Software	Literary	ISRO
36	Finite element structural analysis software (FEAST) PreWin.	Literary	ISRO
37	Finite element structural analysis software (FEAST) Solver	Literary	ISRO
38	GCPaug - High Resolution augmentation of GCP library	Software	ISRO
39	HyDP.one - Hysis Data Processing & Analysis Software	Software	ISRO
40	Antrix Logo	Artistic	ISRO
41	ISRO GIVE MODEL-Multi Layer Data Fusion (IGM-MLDF) Software	Literary	ISRO
42	Coral Reef Atlas of the World Vol I Central Indian Ocean	Literary	ISRO
43	Online Broadcast Application Software	Literary	ISRO
44	ASYBUCK	Literary	ISRO
45	Transient Model for CE 20 Boot Strap Mode Turbo Pump Test	Literary	ISRO
46	ISRO/ANS2NIS	Literary	ISRO
47	ISRO/ABAQU2ANS	Literary	ISRO



48	ISRO/NIS2ANS	Literary	ISRO
49	Message driven method and system for optimal management of dynamic production workflows in a distributed environment	Literary	ISRO
50	AVHYAS - Advanced Hyperspectral Data Analysis Software	Software	SAC
51	GEOIMAGE Software Library for IRS 1C	Literary	ISRO
52	Register Transfer Level VHDL Code Generator for Serial Architecture FIR Filter	Literary	ISRO
53	Digital Image Interpretation , Product Generation and Management System (DIPAM)	Literary	ISRO
54	GEO-SMART Package	Literary	ISRO
55	Enhancement of EBMF Machine Capability for Pattern Writing	Literary	ISRO
56	Sandwich Designer Software	Literary	ISRO
57	ISRO Logo	Artistic	ISRO
58	SEU Fault Injection Tool (SEFIT)	Literary	ISRO
59	Passage to the Moon (English)	Literary	ISRO
60	Passage to the Moon (Hindi)	Literary	ISRO
61	Intelligent Video Surveillance System	Literary	ISRO
62	SACIMAGE Software Library	Literary	ISRO
63	OPTOSOFT Software Package Optosoft for design of optical coatings	Literary	ISRO
64	VTL LIBMAN Video Tape/Cassette Library Information Software	Literary	ISRO
65	Network Monitoring Tool	Literary	ISRO
66	E Recruitment	Literary	ISRO
67	Remote Job Submission	Literary	ISRO
68	CHAMBERDESIGN	Literary	ISRO
69	SHELLBUCKLING	Literary	ISRO
70	Method and Software for evaluation of TR Module	Literary	ISRO
71	NAVIC time scale software	Software	ISTRAC
72	Design suite for low loss RF SAW filters	Software	SAC





73	Design suite for slanted finger inter-digital transducer (SFIT) based SAW filters	Software	SAC
74	Parts Management Software	Software	LPSC
75	Antenna Diagnosis Laboratory (ADLab)	Software	SAC
76	Software for propulsion errors anomalies root cause and lessons learnt database	Software	LPSC
77	Structural Acoustic Response Estimation using Statistical energy analysis software:version3 (STARS3)	Software	URSC
78	Cartosat-2S Data Processing and analysis software	Software	SAC
79	Cartosat-2S mono strip modelling software	Software	SAC
80	e-Beamsoft (Version1.0)	Software	LPSC
81	Safety Equipment Directory and Reminder Generation Software	Software	LPSC
82	Correction Machining & Shop floor Management System (COMPASS)	Software	LPSC



## Trademarks

SPACETRUDER (in Class 7)
FEAST Software (in Class 9)
FILP-CON STRUCTURE (in Class 9)
ISROVISION (in Class 9)
SACIMAGE (in Class 9)
VIBGYOR (in Class 9)
ISROSIL (in Class 17)
ISROPOL (in Class 1)
ANTRIX Name and Logo
OLFEX (in Class 1)
CASPOL (in Class 2)
FEAST Wordmark (in Class 9)
Feast Desktop icon (in Class 9)

## **Capacity Building and Public Outreach (CBPO)**

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April 2024