

प्रौद्योगिकी हस्तांतरण और व्यापार विकास (टीटीबीडी) Technology Transfer and Business Development

Technologies Transferred:

SN	Title	Licensee	Licensed through CSIR/NRDC / Others	Terms of Licence	Effective Date of Licence/ Renewal
1	Cement Polymer Composite Coatings (CPCC)	Protect Anticorrosive, Mumbai	CSIR	LP: Rs.20,00,000/+18% GST RR: 2.5% on sales PL: 5 Years NL: N.E	09-10-2024
2	Manufacturing of Epoxy and Polyurethane paints for Coating of Concrete Structures	Kansai Nerolac Paints Ltd., Mumbai	CSIR	LP: Rs.18,00,000/+18% GST RR: 3% on sales PL: 5 Years NL: N.E	11-01-2024
3	Process for Fabrication of 2.7 V, 150 F Cylindrical Supercapacitor Using Water-based Binder	Super Electro Green Technology Pvt. Ltd., Haryana	CSIR	LP: Rs.15,00,000/+18% GST RR: 2.5% on sales PL: 5 Years NL: N.E	09-11-2024

Patents Filed:

SN	Title	Inventor	NF Number / Application No	Date
1	Conductive carbon based ink as a counter electrode for perovskite solar cells and process for preparation thereof	Subhendu Kumar Panda, Anagha G	0224NF2024/IN 202411075785	07-10-2024
2	Dual functionalised 3D printed scaffold for bone tissues regeneration and process for preparation thereof	Ravi Babu Valapa, Sravanthi Loganathan, Shubham Pant	0229NF2024/IN 202411091594	25-11-2024
3	Metal-free preparation of propylene carbonate and its process thereof	Chandrasekaran Naveen Kumar	0265NF2024/IN 202411094628	02-12-2024
4	Alkaline earth metal chitosan functionalized bioaffinity layer for electrochemical biosensor and process for preparation thereof	Murugan Veerapandian, Vinoth Krishnan	0271NF2024/IN 202411096911	06-12-2024
5	Short-side chain singlewalled carbon nanotubes enriched composite membrane for polymer electrolyte fuel cells	Santoshkumar D Bhat, Vishal M Dhavale, Sreekuttan M U, Harshal Agarwal	0050NF2025/IN 202511021221	07-03-2025

Patent Granted:

SN.	Title	Inventor	Application No./ Patent No	Granted Date
1	Rechargeable alkali metal-oxygen battery using molten nitrate electrolyte	Guruprakash Karkera, Annigere Sannalingegowda Prakash	201811021094 533572	18-04-2024

Agreement / MoUs / NDA Signed:

SN	Category	Date	Sponsor	Title
1	Memorandum of Understanding	24-05-2024	High Energy Batteries (India) Ltd., Chennai	Enhancement of electro catalytic activity in the oxygen reduction reaction of Carbon-based electrodes
2	Memorandum of Understanding	01-07-2024	Karpagam Academy of Higher Education, Coimbatore	Joint Research Programmes and Skill development training
3	Non Disclosure Agreement	24-05-2024	High Energy Batteries (India) Ltd., Chennai	Enhancement of electro catalytic activity in the oxygen reduction reaction of Carbon brush electrodes
4	Memorandum of Understanding	23-08-2024	Periba Hycoco LLP, Gujarat and CSIR-NCL, Pune	Evaluation and Testing of High Temperature Polymer Electrolyte Membrane (HTPEM) Fuel Cell Stack(s) and Methanol Reformation Studies
5	Non Disclosure Agreement	12-09-2024	Vishnu Chemicals Ltd., Hyderabad	Consultancy service for the process of electroplating grade chromium trioxide storage
6	Letter of Agreement	13-09-2024	Vaighai Chemical Industries Ltd., Karaikal	Consultation for optimization of fluid dynamics and other physical parameters in the self-lifting cells
7	Memorandum of Understanding	30-09-2024	National Automotive Test Tracks, Madhya Pradesh	MoU for Research Collaboration in Battery Testing, Battery Chemistry
8	Non Disclosure Agreement	30-09-2024	Euler Motors Pvt. Ltd., New Delhi	Life Cycle Prediction of Lithium Ion Phosphate Cell
9	Agreement	09-10-2024	Protect Anti Corrosive, Mumbai	Cement Polymer Composite Coatings (CPCC)
10	Agreement	09-11-2024	Super Electro Green Technology Pvt. Ltd., Haryana	Process for Fabrication of 2.7 V, 150 F Cylindrical Supercapacitor Using Water-based Binder
11	Non Disclosure Agreement	28-11-2024	Excel Industries Ltd., Mumbai	Research collaborations on electrolytic synthesis of white phosphorus preparation.
12	Agreement	11-01-2024	Kansai Nerolac Paints Ltd., Mumbai	Manufacturing of Epoxy and Polyurethane paints for Coating of Concrete Structures
13	Memorandum of Understanding	06-12-2024	High Energy Batteries (India) Ltd., Chennai	Heat and Energy Balance Study for 2.4 kW Air Cooled Stack via Modelling
14	Non Disclosure Agreement	04-12-2024	Technoculture Research Pvt. Ltd., Bihar	R&D Collaborations in the area of Biosensors
15	Non Disclosure Agreement	06-12-2024	High Energy Batteries (India) Ltd., Chennai	Heat and Energy Balance Study for 2.4 kW Air Cooled Stack via Modelling

Sponsored Projects (SSP):

Sl.No.	Project No.	Title	Sponsor	Project Cost (Rs. in Lakh)	PI	Start Date	End Date
1	SSP 13/20	Polymer based Coating to improve the performance of Ballistic Materials	Indian Ordnance Factories, (OCF), Chennai	45.51	Naveen Kumar C	30/12/2020	30/04/2024
2	SSP 09/21	Development of Thermal Barrier Coatings for Casing material of Box Furnace	GAIL (India) Limited, Noida	151.75	Sreedhar G	12/04/2021	11/04/2026
3	SSP 25/21	Sustainable Process Development for the synthesis of Green Ammonia from Nitrogen.	Ohmium International Inc., USA	247.50	Sree-kuttan M U	25/01/2022	24/07/2025
4	SSP 29/21	Feasibility studies on the Development of electrodes for Electrically Rechargeable Aluminium - Air Batteries (ERAABs)	National Aluminium Company Ltd., (NALCO) Bhubaneswar	120.59	Nishanthi S T	28/02/2022	01/05/2024
5	SSP 35/21	Development of Piezoelectric Dynamic Pressure Sensor.	ISRO Propulsion Complex (IPRC), Mahendragiri	42.00	Sreedhar G	16/03/2022	31/03/2025
6	SSP 02/22	Development of Chromium Coating using Trivalent Cr bath Electroplating process on Inner Bore of Tubes and Long Cylindrical Sections.	Defence Metallurgical Research Laboratory, Hyderabad	359.69	Rajasekaran N	29/03/2022	31/05/2025
7	SSP 12/22	Point-of-care Biosensors for Stress Biomarker Detection.	DIPAS, DRDO, Delhi	45.61	Pandiaraj M	11/08/2022	10/08/2024
8	SSP 03/23	Feasibility studies on Extraction of $MgCl_2$ & other values from Ferro-chrome slag and subsequent conversion of $MgCl_2$ to metallic Mg using Molten Salt Electrolysis	Tata Steel Ltd., Jamshedpur	70.09	Naveen Kumar C	17/04/2023	31/07/2024



Sl.No.	Project No.	Title	Sponsor	Project Cost (Rs. in Lakh)	PI	Start Date	End Date
9	SSP 13/23	Investigations on the behaviour of pre-cracked reinforced concrete structural elements with rebars supplied by Electrotherm India Pvt. Ltd. Under actual coastal environment	Electrotherm (India) Limited, Gujarat	35.32	Daniel Ronald Joseph	20/07/2023	19/07/2026
10	SSP 15/23	Atmospheric Corrosion Testing of Hardware Components - Phase I	Saint Gobain India Private Limited	21.05	Ganesan S M	01/09/2023	31/01/2025
11	SSP 16/23	Health assessment survey of ICCP system provided to repair and building docks of Cochin Shipyard Ltd.	Cochin Shipyard Limited	13.56	Karthikeyan M S	20/09/2023	30/10/2024
12	SSP 19/23	Fabrication and testing of 18650 Li-ion cylindrical cells with Mesha processed activated carbon	Mesha Energy Solution Pvt Ltd., Bangalore	5.78	Sathish M	28/11/2023	15/06/2024
13	SSP 20/23	Effect of Radiation on the Performance of Lithium ion and Lead acid batteries	Submarine Propulsion Safety Superintend, Visakhapatnam	33.60	Sundar Mayavan	17/11/2023	28/07/2025
14	SSP 21/23	Technical Viability of Electrocoagulation process as well as the Development of Electrode Materials to treat Textile Effluent Water.	WATSAN Envirotech Pvt Ltd., Chennai	14.24	Senthilkumar S	26/12/2023	31/12/2024
15	SSP 22/23	Validation of M/s. Jotun protective coatings for durability under C5 high environment as per ISO 12944 - 6	Jotun India Pvt Ltd., Chennai	9.53	Sherwood D	14/12/2023	13/08/2024
16	SSP 23/23	Evaluation of corrosion behaviour of steel rebar embedded in concrete containing ICRETE Mineral Additive	Navoday Sciences Pvt. Ltd, Chennai	5.84	Ashok M	04/01/2024	03/03/2025



Sl.No.	Project No.	Title	Sponsor	Project Cost (Rs. in Lakh)	PI	Start Date	End Date
17	SSP 24/23	Performance mapping and failure analysis of e-Rickshaw & Solar deep cycle batteries	Regnant Energy Solutions, Uttar Pradesh	8.50	Sundar Mayavan	25/01/2024	24/10/2024
18	SSP 26/23	Investigating the corrosion problems due to the sweating of pipelines and suitable coating recommendations for Mahanagar Gas Limited, Navi Mumbai	Mahanagar Gas Limited, Navi Mumbai	12.38	Arun-chandran C	22/01/2024	31/05/2024
19	SSP 27/23	Corrosion assessment survey of the steel and concrete structural elements, equipments, piping at Tata Chemicals Limited, Mithapur plant at Gujarat and recommend its suitable mitigation methodologies	Tata Chemicals Limited, Mithapur	11.98	Rakesh Chandra Barik	15/02/2024	15/12/2024
20	SSP 29/23	Evaluation and Upgradation of existing Nickel-Plating Process	HBL Power Systems Ltd., Hyderabad	10.00	Jaya-kumar M	20/02/2024	30/04/2025
21	SSP 31/23	Assessment of the epoxy painting of conveyor structure at North Chennai Thermal Power Station (NCTPS - I)	Veeramuthu Enterprises, Chennai	1.19	Jeyaram R	06/03/2024	05/06/2024
22	SSP 33/23	Study on the suitability of 12V/4 Ah VRLA batteries for start-stop applications	TVS Motor Company Limited, Hosur	7.08	Sundar Mayavan	08/03/2024	07/09/2024
23	SSP 34/23	Development of 400 prototype 18650 type cylindrical sodium-ion Batteries using the sodium-ion cathode and anode materials provided by TATA Chemicals Ltd.	TATA Chemicals Ltd., Mumbai	17.59	Prakash A S	18/03/2024	17/01/2025



Sl.No.	Project No.	Title	Sponsor	Project Cost (Rs. in Lakh)	PI	Start Date	End Date
24	SSP 01/24	Development of Coating Parameter and Assisting in Coating 100 Meter Electrodes for NMC Cell at CECRI Facility	Crimen Tech Pvt. Ltd., Coimbatore	12.79	Kuldeep Singh	26/04/2024	25/04/2025
25	SSP 03/24	Bipolar Concrete Penetrating Corrosion Inhibiting Admixture for embedded steel against corrosion in concrete structures	CBS Chemicals Pvt. Ltd., Chennai	7.08	Rakesh Chandra Barik	14/05/2024	13/02/2025
26	SSP 05/24	Physical, Chemical and Electrochemical Testing of Indigenously Developed Precursor Materials for Lithium ion Cells	Bridge Green Upcycle Private Limited, Chennai	23.97	Kuldeep Singh	16/05/2024	15/05/2025
27	SSP 11/24	Development of an Electrocatalyst for Anion Exchange Membrane water Electrolyzers for Large-Scale Hydrogen Production	Ganganu Technologies Pvt Ltd., Bengaluru	14.80	Subrata Kundu	12/07/2024	11/07/2025
28	SSP 12/24	Testing of PEM (membrane) supplied by M/s. GFCL Solar and Green Hydrogen Products Limited for water electrolyser	GFCL Solar and Green Hydrogen Products Limited, Gujarat	47.92	Vengatesan S	18/07/2024	30/06/2025
29	SSP 13/24	Enhancement of ORR activity of the carbon brush cathodes for Mg-air sea water battery and feasibility studies thereof (Phase I)	High Energy Batteries India Limited, Pudukkottai	6.90	Aiswarya Bhaskar	07/08/2024	06/04/2025
30	SSP 15/24	Corrosion Failure Analysis and Mitigation Strategies for LPG Cylinders: Enhancing Durability and Safety	LPG Equipment Research Centre (LERC), Bengaluru	15.10	Anand Babu G	23/10/2024	22/07/2025
31	SSP 17/24	Performance evaluation and optimization of Reliance Graphene for Li-ion capacitor and AI-ion battery Application	Reliance Industries Limited, Navi Mumbai	40.33	Sathish M	09/12/2024	08/12/2025

**Grant-in-Aid (GAP) Projects :**

Sl.No.	Project No.	Title	Sponsor	Project Cost (Rs. in Lakh)	Principal Investigator	Start Date	End Date
1	GAP 34/19	Materials for energy conservation and storage platform (MECSP) - 2017	IISc, Bengaluru	82.08	Aishwarya Bhaskar	06/11/2019	31/03/2025
2	GAP 18/21	Fabrication of Pouch - type hybrid super-capacitor device with Mxenes - based nono-composite electrodes in redox additive electrolytes	SERB, New Delhi	27.83	Sathish M	13/12/2021	12/05/2025
3	GAP 19/21	Nanostructured MOFs as Electrocatalysts for Desulfurisation of organic sulphides in fossil fuels	SERB, New Delhi	22.22	Surya-narayanan V	20/12/2021	19/06/2025
4	GAP 21/21	Pt free and active sites enriched Metal - Carbon alloy Electro catalysts for Polymer electrolyte Fuel Cells	SERB, New Delhi	28.41	Vishal Mahesh Dhavale	20/12/2021	19/12/2024
5	GAP 22/21	Inducing Internal Vacancies in Transition Metal based LDHs via Surface Engineering as Chalcogenides and ions Modifications for Water Electrolysis	SERB, New Delhi	29.99	Subrata Kundu	21/01/2022	20/07/2025
6	GAP 24/21	Development of Heterostructured Materials for an Efficient Photocatalytic and Photoelectro-chemical Water Splitting towards Green Energy Harvesting	SERB, New Delhi	10.05	Sathish M	13/12/2021	12/12/2024
7	GAP 27/21	Nanostructured Materials for Next Generation Energy Conversion and Storage Devices	DST, New Delhi	16.80	Prakash A S	01/01/2022	31/12/2026
8	GAP 28/21	Hand held Electrochemical Platform for Biomedical Applications with particular Emphasis on Stress Marker Detection.	DRDO, New Delhi	45.00	Subbiah Alwarappan	02/02/2022	01/02/2025



Sl.No.	Project No.	Title	Sponsor	Project Cost (Rs. in Lakh)	Principal Investigator	Start Date	End Date
10	GAP 31/21	Automation and AI/ML-Assisted Development of Solid State Battery	DST, New Delhi	108.99	Ramesha K	14/03/2022	13/03/2025
11	GAP 33/21	Lithium salts as leachable corrosion inhibitors and potential replacement for hexavalent chromium in hybrid sol-gel coatings for active corrosion protection of Mg alloys	DST, SERB, New Delhi	26.72	Arunchandran C	17/03/2022	16/03/2025
12	GAP 03/22	Centre for Rechargeable Energy Storage Systems for Augmenting Transportation and Electrification (CREATE)	DST, New Delhi	142.05	Prakash A S	11/03/2022	10/03/2027
13	GAP 18/22	Design of Genosensor system compatible bio-polymer material ready for infectious Diagnostic Kit Development	SERB, New Delhi	23.57	Murugan V	22/09/2022	31/03/2025
14	GAP 21/22	Refurbishing of lithium-ion cathode material	DRDO, New Delhi	50.13	Ganesh M	16/09/2022	15/09/2024
15	GAP 24/22	Understanding the Transient Potential Oscillatory Patterns of Self-organized Systems by Time-Resolved Electrochemical Plasmon-Enhanced Raman Spectroscopy	SERB, New Delhi	30.42	Tamilarasan P	23/12/2022	22/12/2025
16	GAP 26/22	Development of Self-Powered Wearable Biosensors based on Sweat Actuated Microfluidic Biofuel cells for Healthcare Monitoring	SERB, New Delhi	46.00	Vinu Mohan A M	07/10/2022	06/10/2024
17	GAP 29/22	Design of Novel Luminophores for High Spatiotemporal Resolution of ECL Imaging towards Multiplexed Bioassay	SERB, New Delhi	33.02	Senthil Kumar S	01/02/2023	31/01/2026
18	GAP 30/22	Ionic liquids for the electro-deposition of nickel and its alloys	DRDO, (ER&IPR) New Delhi	22.39	Surya-narayanan V	20/02/2023	19/02/2025



Sl.No.	Project No.	Title	Sponsor	Project Cost (Rs. in Lakh)	Principal Investigator	Start Date	End Date
19	GAP 31/22	Development of Miniaturised Single - Electrode Electrochemi-luminescence Platform for Visual and High-throughput Sensing of Multiplex Salivary Biomarkers	SERB, New Delhi	31.85	Senthil Kumar S	20/02/2023	19/02/2026
20	GAP 33/22	Indigenization of the HT-PEMFC technology at the Raw Materials & Sub-component level by establishing Pre-production scale Manufacturing Facilities	DST, New Delhi	143.32	Vishal M Dhavale	31/03/2023	30/03/2026
21	GAP 34/22	Design and development of flow-electrode capacitive deionization module for continuous water desalination	DST, New Delhi	23.92	Malini R	31/03/2023	30/03/2026
22	GAP 01/23	Uniform Coatings of Doped Silicon Carbide on Complex Metallic Shapes through Electro-Co-Polymerisation Route	DST, New Delhi	46.68	Tamilarasan P	31/03/2023	30/03/2025
23	GAP 02/23	Development of Advanced Thermal Barrier Coatings for High Thrust Rocket Engines and Components	Indian Space Research Organization (ISRO), Bengaluru	19.73	Sreedhar G	31/03/2023	30/03/2025
24	GAP 04/23	Electrochemical dating: A Non-Destructive and Inexpensive Analysis on Metal and Alloy based Artifacts	DST, New Delhi	39.55	Jeyabharathi C	31/03/2023	30/03/2026
25	GAP 09/23	Hydrogen Canisters for Portable fuel cell applications	UGC-DAE CSR, New Delhi	0.45	Kalpana D	15/05/2023	14/05/2024
26	GAP 11/23	Concerted Approach to Diagnose and Manage Anemia through Development of Cost - effective Point of Care Devices	DST, New Delhi	11.14	Ganesh V	28/06/2023	15/11/2024



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27	GAP 14/23	On-Chip Electrochemi-luminescence based Quantification of Extracellular miRNA Isolated from Cancer Spheroids	SERB, New Delhi	10.05	Senthilkumar S	13/10/2022	12/10/2025
28	GAP 17/23	Development of Electro-Catalysts and Polymer membranes for Hydrogen Generation	Department of Atomic Energy (DAE), Board of Research in Nuclear Sciences (BRNS), Mumbai	37.31	Vengatesan S	12/09/2023	11/09/2026
29	GAP 18/23	Design and Development of hetero-atom doped porous carbon/metal oxide composites as bi-functional (ORR/OER) oxygen electrocatalyst for energy conversion and storage applications	UGC-DAE CSR, New Delhi	0.45	Senthil Kumar S M	06/04/2023	05/04/2024
30	GAP 28/23	Reinforcement perfluorosulfonic acid and short chain ionomers and sulfophenylated polyphenylenes with radical scavengers and expanded substrate support via self-polymerizations:its impact as composite membrane in polymer electrolyte fuel cells	SERB, DST New Delhi	27.91	Santhosh-kumar D Bhat	30/01/2024	29/01/2027
31	GAP 30/23	Design of Electrified Liquid-Liquid and Liquid-Organogel Interfaces : An active Catalytic Enironment for Co ₂ Reduction	SERB, New Delhi	27.71	Giribabu K	15/02/2024	14/02/2027



Sl.No.	Project No.	Title	Sponsor	Project Cost (Rs. in Lakh)	Principal Investigator	Start Date	End Date
32	GAP 32/23	Development of Non-precious solid state redox mediator and bifunctional electro-catalysts based membrane-free decoupled electrolyzer from green hydrogen production	SERB, DST New Delhi	33.11	Pandikumar A	04/03/2024	03/03/2027
33	GAP 36/23	Designed concealed defects enriched metal dichalcogenide decorated porous carbon nanostructures as sustainable electrocatalysts for green hydrogen generation	SERB, DST New Delhi	27.35	Senthilkumar S M	04/03/2024	03/03/2027
34	GAP 35/23	Design and Development of AI based smart battery management system for Energy storage and E-Mobility applications	Ministry of Science and Technology	120.00	Hemavathi S	01/03/2024	28/02/2027
35	GAP 02/24	Fabrication of Flexible Conductive Fibres / Fabric for Wearable Electronic Textiles	National Technical Textile Mission (NTTM), Ministry of Textiles (MoT), New Delhi	100.00	Sivakumar C	05/04/2024	04/10/2025
36	GAP 04/24	Development of Seaweed-derived Cellulose and Phyto-chemicals as Cost-efficient Additive Composite for Medical-grade Textiles	National Technical Textile Mission (NTTM), Ministry of Textiles (MoT), New Delhi	51.48	Murugan V	28/05/2024	27/05/2027