

## 2019-20

SI No.	File no.	Title	PI Name & Institution Address	Duration	Total cost (Rs.)
1.	DST/TMD/HFC/2K18/06	Boosting the H <sub>2</sub> Economy by Harnessing the beauty of Encapsulation Chemistry: Augmented Kinetics for Water Splitting Reaction under Confinement	Dr. Somenath Garai, Assistant Professor, Department of Chemistry, NIT Tiruchirappalli Trichy, Tamil Nadu 620015 E-mail: <a href="mailto:sgarai@nitt.edu">sgarai@nitt.edu</a> Mobile No. 8247085726	36 months	Rs. 66,42,259
2.	DST/TMD/HFC/2K18/24	Exploring the active sites of nitrogen and boron containing/doped materials: N-C-B and N <sub>2</sub> -C-B type active sites for electrocatalytic 4-electron oxygen reduction reaction	Dr. A. Muthukrishnan, Assistant Professor, Chemical Sciences Building, Indian Institute of Science Education and Research Thiruvananthapuram, Maruthamala P.O., Vithura Thiruvananthapuram 695551 E-mail: <a href="mailto:muthukrishnan@iisertvm.ac.in">muthukrishnan@iisertvm.ac.in</a> Mobile No. 7397287818	36 months	Rs. 50,83,120
3.	DST/TMD/HFC/2K18/34	Ionogel Electrolyte Membrane Fuel Cell (IEMFC) with plasma electrolytic nitrided (PEN) metallic bipolar plate and effective flow field design	Dr. Lakshman Neelakantan, Associate Professor, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras (IITM), Chennai-600 036 E-mail: <a href="mailto:nlakshman@iitm.ac.in">nlakshman@iitm.ac.in</a> Mobile No. 8939083564	36 months	Rs. 56,73,628

4.	DST/TMD/HFC/2K18/37	Palladium and Magnesium based hybrid nanocluster structures for high gravimetric capacity hydrogen storage	Dr. Deepshikha Jaiswal Nagar, Assistant Professor, School of Physics, Indian Institute of Science Education and Research Thiruvananthapuram, Maruthamala P.O., Vithura, Trivandrum-695551 E-mail: <a href="mailto:deepshikha@iisertvm.ac.in">deepshikha@iisertvm.ac.in</a> Mobile No. 9495083555	36 months	Rs. 70,74,260
5.	DST/TMD/HFC/2K18/40	Thermoresistant Polymer-Derived Microporous Ceramic Membranes for Separation of Hydrogen and Carbon Monoxide/Carbon Dioxide in Hydrogen Production	Dr. Ravi Mohan Prasad, Assistant Professor, Department of Metallurgical and Materials Engineering, IIT Ropar, Rupnagar - 140001, Punjab E-mail: <a href="mailto:Ravimohan.prasad@iitrpr.ac.in">Ravimohan.prasad@iitrpr.ac.in</a> <a href="mailto:Ravimohan.prasad@gmail.com">Ravimohan.prasad@gmail.com</a> Mobile No. 89685-34468	36 months	Rs. 70,27,690
6.	DST/TMD/HFC/2K18/52	Development of portable direct methanol fuel cell power generator with bi-functional catalysts-coated hydrocarbon membranes	Dr. G. Gnanakumar, Assistant Professor Department of Physical Chemistry Madurai Kamaraj University Madurai-625 021, Tamil Nadu, India E-mail: <a href="mailto:kumarg2006@gmail.com">kumarg2006@gmail.com</a> Mobile No. 9585752997	36 months	Rs. 60,64,000
7.	DST/TMD/HFC/2K18/55	Development of Mesoporous TiN@Nitrogen-Doped	Dr. P. Biji Associate Professor	36 months	Rs. 53,90,264

		Carbon Nanostructured Support Materials with Less-Pt Electrocatalysts for Durable and Low-cost PEM Fuel Cells	<p>Nanotechnology PSG Institute of Advanced Studies Peelamedu, Coimbatore – 641 004 Tamil Nadu Email: <a href="mailto:pbm@psgias.ac.in">pbm@psgias.ac.in</a> , <a href="mailto:bijuja123@yahoo.co.in">bijuja123@yahoo.co.in</a> Mobile No. 9444860689</p> <p>Dr. P. Manoj Kumar Associate Professor Dept. of Mechanical Engg. PSG Institute of Technology &amp; Applied Research Neelambur, Coimbatore – 641 062 Tamil Nadu Email: <a href="mailto:manoj@psgitech.ac.in">manoj@psgitech.ac.in</a> Mobile No. 9444038978</p>		
8.	DST/TMD/HFC/2K18/56	Design and Development of Graphene Reinforced Carbon fiber/epoxy Composite based Light Weight High Pressure Hydrogen Storage Cylinder for Vehicular Application	<p>Dr. Naresh Chandra Murmu Senior Principal Scientist &amp;Head, Surface Engineering and Tribology Division CSIR- Central Mechanical Engineering research Institute Mahatma Gandhi Avenue, Durgapur -713 209 Email: <a href="mailto:ncmurmu@gmail.com">ncmurmu@gmail.com</a>; <a href="mailto:murmu@cmeri.res.in">murmu@cmeri.res.in</a> Mobile No. 8016096858</p>	36 months	Rs. 76,68,520

			<p>Prof. Bishakh Bhattacharya  Dr. Gurumukh D. Mehta and  Veena M. Mehta Chair Professor  Department of Mechanical  Engineering  Indian Institute of Technology  Kanpur  Kanpur -208016, UP  Email : <a href="mailto:bishakh@iitk.ac.in">bishakh@iitk.ac.in</a>  Mobile No. 9936335473</p>		
9.	DST/TMD/HFC/2K18/58	Room Temperature Aqueous Phase Alcohol Dehydrogenation with Electricity Generation	<p>Dr. Muhammed Musthafa O T,  Assistant Professor,  Department of Chemistry,  Main building, IISER Campus,  Homi Bhabha road,  Pashan, Pune -411008 (India).  E-mail:  <a href="mailto:musthafa@iiserpune.ac.in">musthafa@iiserpune.ac.in</a>  Mobile No. 9604326754</p>	36 months	Rs. 37,18,828
10.	DST/TMD/HFC/2K18/60	2D Transition Metal Layered Double Hydroxides: A Cost- Effective Catalyst for Hydrogen Production by (Photo)Electrochemical Water Splitting	<p>Dr. Poulomi Roy,  Senior Scientist,  CSIR – Central Mechanical  Engineering Research Institute,  Mahatma Gandhi Avenue,  Durgapur 713209, West Bengal  E-mail: <a href="mailto:poulomiroy@yahoo.com">poulomiroy@yahoo.com</a>,  <a href="mailto:p.roy@cmeri.res.in">p.roy@cmeri.res.in</a>  Mobile No. 8986853479</p> <p>Dr. Subrata Kundu,</p>	36 months	Rs. 96,42,888

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11.	DST/TMD/HFC/2K18/70	Hydrogen Storage Materials: Optimization of known materials, developing new storage materials and finding exploratory application	<p>Prof. O.N. Srivastava, Emeritus Professor, Hydrogen Energy Centre, Department of Physics, Banaras Hindu University, Varanasi-221005 E-mail: <a href="mailto:heponsphy@gmail.com">heponsphy@gmail.com</a> Mobile No. 9415228123</p>	36 months	Rs. 63,68,198
12.	DST/TMD/HFC/2K18/88	Unraveling the potential of graphene quantum dots for hydrogen storage in fuel cells	<p>Dr. Shailesh I. Kundalwal, Assistant Professor, Applied and Theoretical</p>	36 months	Rs. 26,78,740

			Mechanics (ATOM) Lab, Discipline of Mechanical Engineering, Indian Institute of Technology (IIT) Indore, Simrol, Indore 453552, India E-mail: <a href="mailto:kundalwal@iiti.ac.in">kundalwal@iiti.ac.in</a> Mobile No. 88066 89317		
13.	DST/TMD/HFC/2K18/90	Bio-Inspired Hydrogen Evolution from Water: Troubleshooting Practical Limitations	Dr. Abhishek Dey, Associate Professor, Indian Association for the Cultivation of Science, 2A Raja SC Mullick Road, Kolkata, India 700032 E-mail: <a href="mailto:abbeyde@gmail.com">abbeyde@gmail.com</a> Mobile No. 9051710061	36 months	Rs. 91,26,000
14.	DST/TMD/HFC/2K18/96	Development and testing of Nano-doped hybridized biodiesel as pilot fuel for hydrogen duel fuel operation in a CI engine	Dr. Abhishek Paul Assistant Professor Department of Mechanical Engineering, NIT Silchar, Assam-788010, India E-mail: <a href="mailto:v1.abhishek@gmail.com">v1.abhishek@gmail.com</a> Mobile No. 9612878658	36 months	Rs. 51,85,000
15.	DST/TMD/HFC/2K18/115	Development of earth abundant heterostructured photocatalyst based solar H <sub>2</sub> generation reactor/process	Dr. Yatendra S. Chaudhary, Senior Scientist, Colloids & Materials Chemistry Department, CSIR-Institute of Minerals & Materials Technology, Acharya Vihar, Bhubaneswar-751013, Odisha, India	36 months	Rs. 69,12,260

			E-mail: yschaudhary@immt.res.in; <a href="mailto:yschaudhary@gmail.com">yschaudhary@gmail.com</a> Mobile No. 7205755894		
16.	DST/TMD/HFC/2K18/124	Biomass Derived Heteroatom Doped Graphene and Hard Carbon Composites for Energy Storage Application	Dr. Sanna Kotrappanavar Nataraj, Associate Professor, Center for Nano & Material Sciences, Jain University Jakkasandra Post, Kanakapura Taluk Ramanagara District, Karnataka-5622112 E-mail: <a href="mailto:sk.nataraj@jainuniversity.ac.in">sk.nataraj@jainuniversity.ac.in</a> Mobile No. 8469579774  Dr. Debasis Ghosh Assistant Professor Center for Nano & Material Sciences, Jain University Jakkasandra Post, Kanakapura Taluk Ramanagara District, Karnataka-5622112 E-mail: <a href="mailto:g.debasis@jainuniversity.ac.in">g.debasis@jainuniversity.ac.in</a> Mobile No. 8972928611	36 months	Rs. 65,85,392
17.	DST/TMD/HFC/2K18/128	Non-Pt based Alloys and Intermetallics as Efficient Electrode Materials for the	Prof. Sebastian C. Peter, Associate Professor, New Chemistry Unit, Jawaharlal	36 months	Rs. 35,02,828

		Energy Conversion in Fuel Cell	Nehru Centre for Advanced Scientific Research, Jakkur Post, Bengaluru – 560064 E-mail: <a href="mailto:sebastiancp@gmail.com">sebastiancp@gmail.com</a> , <a href="mailto:sebastiancp@incasr.ac.in">sebastiancp@incasr.ac.in</a> Mobile No. 09480827672		
18.	DST/TMD/HFC/2K18/130	Development of Metal Organic Framework(MOF) based electrocatalyst for Fuel Cell Application	Dr. Neetu Jha, UGC Assistant Professor, Department of Physics, ICT Mumbai, Matunga-400019 E-mail: <a href="mailto:jha.neetu@gmail.com">jha.neetu@gmail.com</a> Mobile No. 9867000941	36 months	Rs. 49,06,828
19.	DST/TMD/HFC/2K18/136	Noble-Metal free Advanced Catalysts for Hydrogen Generation and Fuel Cell Applications	Dr. M. M. Shaijumon, Associate Professor, School of Physics, Indian Institute of Science Education & Research Thiruvananthapuram Maruthamala PO, Vithura, Thiruvananthapuram, 695551, Kerala E-mail: <a href="mailto:shaiju@iisertvm.ac.in">shaiju@iisertvm.ac.in</a> Mobile No. 9895320070	36 months	Rs. 52,92,259
20.	DST/TMD/HFC/2K18/138	DEEP: Development of an Efficient Photoelectrode for Hydrogen Fuel from Water	Dr. Praveen Kumar, Assistant Professor, Department of Materials Science, Indian Association for the Cultivation of Science, Jadavpur, Kolkata, 700032 E-mail: <a href="mailto:praveen.nitrides@gmail.com">praveen.nitrides@gmail.com</a> ; <a href="mailto:msprk@iacs.res.in">msprk@iacs.res.in</a>	36 months	Rs. 56,17,080



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21.	DST/TMD/HFC/2K18/95	Improved hydrogen production from biogas using sorption enhanced reforming	<p>Dr. Prakash D. Vaidya,  Associate Professor,  Department of Chemical  Engineering, Institute of  Chemical  Technology, Nathalal Parekh  Marg, Matunga, Mumbai-400019  E-mail:  <a href="mailto:pd.vaidya@ictmumbai.edu.in">pd.vaidya@ictmumbai.edu.in</a>  Mobile No. 9867296416</p>	36 months	Rs. 40,07,696
22.	DST/TMD/HFC/2K18/101	Development of Visible Light Active Functional Materials for Efficient Photocatalytic and Photoelectrocatalytic Generation of Hydrogen	<p>Dr. M. Sathish,  Scientist,  Functional Materials Division,  Central Electrochemical  Research Institute  Karaikudi-630003, Tamil Nadu  E-mail: <a href="mailto:msathish@cecri.res.in">msathish@cecri.res.in</a>  Mobile No. 7598295994</p>	36 months	Rs. 38,52,490
23.	DST/TMD/HFC/2K18/123	Transition metals doped strontium zirconate and strontium manganite perovskite for solid oxide fuel	<p>Dr. Kulvir Singh  Professor and Associate Dean  (Research and Sponsored  Projects)</p>	36 months	Rs. 52,40,532

		cell applications	School of Physics and Materials Science, Thapar Institute of Engineering and Technology, Patiala, Punjab-147004 E-mail: <a href="mailto:kusingh@thapar.edu">kusingh@thapar.edu</a> Mobile No. 9872098213		
24.	DST/TMD/HFC/2K18/42	Development of Compressed Hydrogen-Fuel Cell Integrated System Suitable for Light Duty Vehicles	<p>Prof. Prakash C Ghosh Professor, Department of Energy Science and Engineering, IIT Bombay, Powai, Mumbai-400076 Email: <a href="mailto:pcghosh@iitb.ac.in">pcghosh@iitb.ac.in</a> Mobile No. 9920528896</p> <p>Dr. Dhiraj K. Mahajan Assistant Professor Room No. 322, Academic Block, Department of Mechanical Engineering, IIT Ropar, Rupnagar-140001, Punjab. Email: <a href="mailto:dhiraj.mahajan@iitrpr.ac.in">dhiraj.mahajan@iitrpr.ac.in</a> Mobile No. 07814252244</p> <p>Dr. Ravi Mohan Prasad Assistant Professor Room No. 324, Academic Block, Department of Mechanical Engineering, IIT Ropar, Rupnagar-140001, Punjab. Email: <a href="mailto:Ravimohan.prasad@iitrpr.ac.in">Ravimohan.prasad@iitrpr.ac.in</a></p>	36 months	Rs.4,67,70,516

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25.	DST/TMD/HFC/2K18/65	Development of Micro Solid Oxide Fuel Cells ( $\mu$ -SOFC) in Low Temperature Co-fired Ceramic (LTCC) Technology	<p>Dr. Girish J. Phatak Scientist 'F' Centre for Materials for Electronics Technology (C-MET) Panchwati, Off Pashan Road, Pune - 411008 Email: <a href="mailto:gjp@cmet.gov.in">gjp@cmet.gov.in</a> Mobile No. 9225527624</p>	36 months	Rs.2,12,16,800
26.	DST/TMD/HFC/2K18/78	Demonstration and validation of hydrogen ecosystem for stationary power backup application for telecommunication towers	<p>Dr. Santoshkumar D Bhat Senior Scientist, CSIR-CECRI CSIR-Central Electrochemical Research Institute- Madras Unit, CSIR Madras Complex, Taramani, Chennai-600 113 Email: <a href="mailto:sdbhat@cecri.res.in">sdbhat@cecri.res.in</a> ; <a href="mailto:sdbhatcecri@gmail.com">sdbhatcecri@gmail.com</a> Mobile No. 9952035390</p> <p>Dr. Sadhana Rayalu Chief Scientist and Head, CSIR- NEERI</p>	36 months	Rs.3,85,81,900

			Environmental Materials Division, CSIR-National Environmental Engineering Research Institute, Nehru Marg, Nagpur- 440020 Email: <a href="mailto:s_rayalu@neeri.res.in">s_rayalu@neeri.res.in</a> Mobile No. 9890367588		
27.	DST/TMD/HFC/2K18/01	Design, Development, Testing and Evaluation of a Lean Premixed Swirl-Stabilized Gas Turbine Combustor for Stationary Power Generation using High-Hydrogen-Content Fuel	Dr. Santanu De Assistant Professor Department of Mechanical Engineering Indian Institute of Technology Kanpur, Kanpur 208016, UP, India E-mail: <a href="mailto:sde@iitk.ac.in">sde@iitk.ac.in</a> Mobile No. 9454772260	36 months	Rs.2,56,32,960
28.	DST/TMD/HFC/2K18/64	Use of bio-hydrogen for PEM fuel stacks – Research and Demonstration	Prof. Dasappa S Professor Center for Sustainable Technologies, Indian Institute of Science, Bangalore 560-012 E-mail : <a href="mailto:d_asappa@iisc.ac.in">d_asappa@iisc.ac.in</a> ; <a href="mailto:s.dasappa@gmail.com">s.dasappa@gmail.com</a> Mobile No. 98455 98203	36 months	Rs.3,68,26,000