

## **SwarnaJayanti Fellowships Scheme- 2020-21**

### **Applications Received -Engineering Sciences**

<b>S.No</b>	<b>Title of the Proposed Project Proposal/ Temporary File No.</b>	<b>Applicant Name And Institute</b>
1.	Understanding and describing the temperature dependence of the event of cleavage fracture occurring after significant ductile tearing in upper region of ductile to brittle transition of welded specimens under quasi-static and dynamic loading.  DST/SJF/ET/2021/387	Dr.Abhishek Tiwari  Indian Institute of Technology, Ropar
2.	Captioning Images with Generative Adversarial Networks An approach towards efficient self training based Image Captioning Model  DST/SJF/ET/2021/386	Dr.Partha Pakray  National Institute of Technology, Silchar
3.	Smart Greenhouse - Greenhouse automation using Artificial Intelligence and Robotics for crop production  DST/SJF/ET/2021/385	Dr.Abhijit Khadatkhar  Central Institute Of Agricultural Engineering, Bhopal
4.	Self-charged integrated microsupercapacitors based on Laser scribed MXene-nanocarbon hybrid materials  DST/SJF/ET/2021/384	Dr.Chandra Sekhar Rout  Jain University, Karnataka
5.	Development of Low-Cost Deep Eutectic Solvents for the Simultaneous Dechlorination and Decolourization of industrial wastewater.  DST/SJF/ET/2021/383	Dr.Anantharaj R  Sri Siva Subramaniya Nadar College of Engineering, Chennai
6.	Two-Dimensional Nanomaterials reinforced Polymer Hydrogel foams based flexible, Micro-patterned devices for high performance, electronic applications  DST/SJF/ET/2021/382	Dr.Sushmee Badhulika  Indian Institute of Technology, Hyderabad
7.	Physics informed machine learning methods to understand and control combustion driven oscillations  DST/SJF/ET/2021/381	Dr. Sathesh Mariappan  Indian Institute of Technology, Kanpur

8.	Development of Negative Carbon Footprint Biological Cement-Based Materials Utilizing Plastic Residuals Produced by Novel COH-RC Method for Immobilizing Genetically Modified Microorganisms.  DST/SJF/ET/2021/380	Dr.Ajitanshu  Invertis University, Bareilly
9.	Analysis of Adhesive Bonded Composite Joints  DST/SJF/ET/2021/379	Dr.Jairaja R  Government Engineering College, Haveri
10.	Mansa Prammarsh Predictive Modeling of Severity of Depression using Machine Learning and Artificial Intelligence Approach  DST/SJF/ET/2021/378	Dr.Nishtha Hooda  Indian Institute of Information Technology, Chandpur
11.	Deep Learning based Emotion Recognition Model from Physiological Signals of Human  DST/SJF/ET/2021/377	Dr. Kavitha Dhanushkodi Valliammai Engineering College, Kancheepuram
12.	Development of Cost Effective Catalytic Converter Technology in the Pre and Post Combustion Regions of CI Engine  DST/SJF/ET/2021/376	Dr.Naveena B E  Dayananda Sagar College of Engineering, Bengaluru
13.	Linguistic Corpus Development and Document Analysis for Natural Language Processing of Telugu, an Indian Language  DST/SJF/ET/2021/375	Dr.Suneetha Eluri  University College of Engineering, Kakinada
14.	Invoking classical metallurgical principles to lead to the development of next-generation alkali metal-ion batteries  DST/SJF/ET/2021/374	Prof. Amartya Mukhopadhyay  Indian Institute of Technology- Bombay , Mumbai
15.	Exploring Room Temperature Solid-State Refrigeration in the Absence of Conjugate Fields- Magneto/Electro-Thermoelectric Materials  DST/SJF/ET/2021/373	Dr.Jyothinagaram Krishnamurthy  National Institute of Technology, Tadepalligudem
16.	Design of Low-cost and Portable Multi-Site Bioimpedance Measurement System for Quality Monitoring and Disease Modeling of Kashmiri Fruits  DST/SJF/ET/2021/372	Dr.Farooq Ahmad Khanday  University Of Kashmir, Hazratbal, Srinagar

17.	Design, Fabrication and Cold Test Characterization of Metamaterial based Magnetically Insulated Line Oscillator for High Power Microwave Applications  DST/SJF/ET/2021/371	Dr.Manpuran Mahto  National Institute of Technology, Patna
18.	Rheometry-on-a-Chip Multi-functional microfluidic device for rheometry of complex fluids  DST/SJF/ET/2021/370	Prof.Aloke Kumar  Indian Institute of Science, Bengaluru
19.	Design and Analysis of Next Generation Quantum Device based on the architecture of Field Effect Transistor  DST/SJF/ET/2021/369	Dr.Ashish Raman  Dr B R Ambedkar National Institute of Technology, Jalandhar
20.	THz wave interaction with high mobility 2D materials and the development of advanced ultrafast Schottky diode receiver for the applications in THz communication  DST/SJF/ET/2021/368	Dr. Samareesh Das  Indian Institute of Technology-Delhi
21.	Design of Federated Meta-learning Approaches for Solving Problems of Natural Language Processing  DST/SJF/ET/2021/367	Dr.Sriparna Saha  Indian Institute of Technology, Patna
22.	Proper Diagnosis tool for Lungs and Breast Cancer Detection using Novel Microwave Medical Imaging (MMI) Techniques followed by Method Validations on other Phases of Cancer Management, Identifying Bone Fracture, Brain Injuries, and Concealed Object Detections  DST/SJF/ET/2021/366	Prof.Sukomal Dey  Indian Institute of Technology Palakkad
23.	Enhanced efficiency of thermal pretreatment for anaerobic digestion by removal of different enzymatic inhibitors  DST/SJF/ET/2021/365	Dr.Jyoti Kainthola  Mahindra University, Telangana
24.	Predictive Modeling for Perovskite Photovoltaic Systems - Reliability Assessment to Accelerated Tests  DST/SJF/ET/2021/364	Dr.Pradeep Ramachandran Nair  Indian Institute of Technology-Bombay, Mumbai
25.	Engineering Robustness and Sensitivity to Temperature for Synthetic Biology Applications  DST/SJF/ET/2021/363	Dr.Shaunak Sen  Indian Institute of Technology-Delhi

26.	Reinforcement Learning Algorithms based Inverse Surface Contours Estimation for desired Beamforming from SMA actuated Reconfigurable Antenna  DST/SJF/ET/2021/362	Dr.Sahil Kalra  Indian Institute of Technology-Jammu
27.	Design of pressure sensing diaphragm for MEMS based capacitive diaphragm gauge considering the size-effects  DST/SJF/ET/2021/360	Dr.Bhakti N Patel  Parul Institute of Engineering and Technology, Vadodara
28.	A Novel Memory Synapse Technology for Neuromorphic Computing  DST/SJF/ET/2021/359	Prof.Mayank Shrivastava  Indian Institute of Science, Bengaluru
29.	Development of non-Nafion-based and non-platinum group metal-based membrane electrode assemblies for high performance-to-cost proton exchange membrane fuel cells  DST/SJF/ET/2021/357	Dr.Kingshuk Dutta  Central Institute of Plastics Engineering and Technology, Chennai
30.	Project on developing IoT device for instant detection of metals in plants and drinking water causing neurological disorders  DST/SJF/ET/2021/355	Dr.Giddaluru Somasekhar  CMR Technical Campus, Hyderabad Telangana
31.	Development of new approaches for river restoration by providing cost-effective measures for monitoring of ecological responses  DST/SJF/ET/2021/354	Dr.Manish Kumar Goyal  Indian Institute of Technology, Indore
32.	Development and Systematic Study on Modified Wood Composites for Improving Transmittance for Effective Use in Construction Industry  DST/SJF/ET/2021/353	Dr.Dipak Vitthal Pinjari  Institute of Chemical Technology, Mumbai
33.	Atomic-level structure engineering of nanoscale metal oxides electrode for high-rate intercalation pseudocapacitance  DST/SJF/ET/2021/352	Dr.Pravin Sopanrao Walke  University of Mumbai, Mumbai
34.	Towards design and development of a smart probe integrated with opto-electro-mechanical sensors for delineation of adjacent normal from breast cancer  DST/SJF/ET/2021/351	Dr.Hardik Jeetendra Pandya  Indian Institute of Science, Bengaluru

35.	Bioinspired nano-porous calcium silicate CaSiO <sub>3</sub> diatomite membrane monolith by freeze casting method A new generation ecofriendly membrane monolith with macroporous biomass carbon and graphene quantum dots for synergic adsorption of multiple pollutants and oils from water  DST/SJF/ET/2021/350	Dr.Aniruddha Chatterjee  Maharashtra Institute of Technology, Aurangabad
36.	Design and development of Digital Twin for Performance assessment, monitoring and prognosis of pneumatic actuator  DST/SJF/ET/2021/349	Dr.Kalpanad  Anna University, MIT Campus, Chennai
37.	IoT based Smart Intelligent system for Soil Content Analysis and Crop Yield Prediction  DST/SJF/ET/2021/348	Dr.Selvakumar Kamalanathan  National Institute of Technology, Tiruchirappalli
38.	Design and Development of Hyperspectral Image Compression and Reconstruction algorithms using Machine Learning/Deep Learning for Disaster Prediction and Monitoring  DST/SJF/ET/2021/345	Dr.Thangadurai N  Jain University, Karnataka
39.	Design of RF low noise amplifier at cryogenic temperature for applications of deep space and quantum computing.  DST/SJF/ET/2021/344	Dr.Darshak Kishorchandra Bhatt  Indian Institute of Technology, Roorkee
40.	High-Performance Compiler Infrastructure for AI/ML Computations  DST/SJF/ET/2021/343	Prof.Uday Kumar Reddy B  Indian Institute of Science, Bengaluru
41.	Investigation of Ferroelectric Tunnel Field Effect Transistor Devices for non-volatile FeRAM  DST/SJF/ET/2021/342	Dr.Sweta Chander  Lovely Professional University, Phagwara
42.	Figure Diminishing Geopolymer Building Products  DST/SJF/ET/2021/341	Dr.Indhumathi  Ramco Institute of Technology, Rajapalayam
43.	Development of sustainable concrete using sea sand and sea water for Marine Structures  DST/SJF/ET/2021/340	Dr.Hanuma Kasagani  Velagapudi Ramakrishna Siddhartha Engineering College, Vijayawada

44.	Heterogeneously Integrated Two-dimensional Material – Silicon Resonant Metasurface for Active Programmable Photonics  DST/SJF/ET/2021/339	Dr.Varun Raghunathan  Indian Institute of Science, Bengaluru
45.	Qualitative identification of food materials using terahertz spectroscopic imaging with discriminant analysis for detecting foreign materials  DST/SJF/ET/2021/338	Dr.Isha Malhotra  Dronacharya College of Engineering, Gurgaon
46.	Zero shot Single Image Restoration through Controlled Model Perturbation  DST/SJF/ET/2021/337	Dr.Debashis Sen  Indian Institute of Technology, Kharagpur
47.	Design and development of Internet of Things based Food Adulterant Measurement Device  DST/SJF/ET/2021/336	Dr.Sathiesh Kumar V  Anna University, MIT Campus
48.	An Effective Computing Model for Online Tutoring using Facial Expressions  DST/SJF/ET/2021/335	Dr.Manikandan  St.Joseph's College of Engineering, Chennai
49.	Measurement of reduction in corruption through digitization by industrial engineering  DST/SJF/ET/2021/334	Dr.Aman Dua  National Institute of Food Technology Entrepreneurship and Management, Sonipat
50.	Python Utilized Design and Fabrication of Cost Compact Smart Robot for Healthcare Workers to Outbreak the COVID-19  DST/SJF/ET/2021/333	Mr.Ganesan Subramanian  EGS Pillay Engineering College, Nagapattinam
51.	Amount of Secrecy Loss in Wireless Powered Relay Networks with Destination Assisted Cooperative Jamming  DST/SJF/ET/2021/332	Dr.Ajay Singh  Indian Institute of Technology, Jammu
52.	Characterization of Carbon Nanotube FET CNTFET Device for Ultra-low power IoT Applications  DST/SJF/ET/2021/331	Dr.Sanjeet Kumar Sinha  Lovely Professional University, Phagwara
53.	Physics-Based Supervised Learning for High-Throughput Evaluation of Creep Response of Materials using Miniaturized Samples A Paradigm Shift in Study of Mechanical Behavior of Bulk Structures  DST/SJF/ET/2021/330	Prof.Praveen Kumar  Indian Institute of Science, Bengaluru

54.	Color Elementary Cellular Automata Computing Model. Theory, Implementation and Applications  DST/SJF/ET/2021/329	Dr.Fasel Qadir  University Of Kashmir, Hazratbal
55.	Development of encryption algorithm based on Elliptic Curve Cryptography (ECC) for secured storage and reduced computational time in a cloud platform.  DST/SJF/ET/2021/328	Dr.Sophiya Sheikh  Lovely Professional University, Phagwara
56.	Development of a Framework for Implementing Compressively Sensed ECG Signal Processing Algorithms on FPGA Architectures for Assessing the Risk of Fall  DST/SJF/ET/2021/327	Dr.Kishore Kumar Puli  National Institute of Technology, Tadepalligudem
57.	Experimentally Validated Predictive Model Development and Process Optimization of Convective Drying and Deep Frying Processes  DST/SJF/ET/2021/326	Dr.Atul Bhargav  Indian Institute of Technology, Gandhinagar
58.	Development of a low cost instant multiple millets dehushing prototype for rural populace.  DST/SJF/ET/2021/325	Dr.Nanje Gowda N A  M S Ramaiah University of Applied Sciences, Bengaluru
59.	Analysis and Early Diagnosis of Autism Spectrum Disorder of students in Arunachal Pradesh using Computational Intelligence Approaches  DST/SJF/ET/2021/324	Dr.Deepak Gupta  National Institute of Technology, Arunachal Pradesh
60.	Design and development of multi-plate magnetorheological clutch Investigations and characterization of its running in behavior and drag losses  DST/SJF/ET/2021/323	Dr.Chiranjit Sarkar  Indian Institute of Technology, Patna
61.	Design and Development of Innovative Electrical Energy Storage Hybrid EESH Hydraulic Cylinder for Lift - Lowering Applications  DST/SJF/ET/2021/322	Dr.Dr Niranjan Kumar  Indian Institute of Technology,ISM Dhanbad
62.	Design and development of a patient-independent efficient seizure predictor for the treatment of epilepsy  DST/SJF/ET/2021/321	Dr.Jay Prakash Singh  Visvesvaraya National Institute of Technology, Nagpur

63.	Mechanistic Insight of Shear Induced Aggregation of Therapeutic Proteins in Bioprocessing and the Effect of Trace Elements and Salt Ions  DST/SJF/ET/2021/320	Dr.Lalit M Pandey  Indian Institute of Technology, Guwahati
64.	Codes for Distributed Storage, Distributed Computing and Blockchains  DST/SJF/ET/2021/319	Dr.Lalitha Vadlamani  International Institute of Information Technology, Gachibowli
65.	The characterization of sugarcane bagasse ash and its maximum potential utilization in concrete  DST/SJF/ET/2021/318	Dr.Miss Meera  Shriram Institute For Industrial Research, Delhi
66.	Wearable Pulse Plethysmography (PPG) Sensor and Artificial Intelligence based Holistic IOT Framework for Detection and Classification of Cardiovascular Diseases  DST/SJF/ET/2021/317	Dr.Amit Acharyya  Indian Institute of Technology, Hyderabad
67.	Inclusive Immersive Interaction Framework for users with SSMI through User Modelling  DST/SJF/ET/2021/315	Dr.Pradipta  Indian Institute of Science, Bengaluru
68.	Towards Fair and Secure Networks Detecting Traffic Discrimination and Cyberattacks  DST/SJF/ET/2021/314	Prof.Manjesh Kumar Hanawal  Indian Institute of Technology-Bombay , Mumbai
69.	Development of Retrofit Propulsion and Charging System for Electric Vehicle Using Multiphase Induction Motor with Stator Windings Open-Circuited  DST/SJF/ET/2021/313	Dr.Ramsha Karampuri  Visvesvaraya National Institute of Technology, Nagpur
70.	Photon Assisted Nano THERanostics-PANTHER.  DST/SJF/ET/2021/312	Dr.Aravind Kumar Rengan  Indian Institute of Technology, Hyderabad
71.	Social Distance Identification of Traffic area using Faster RCNN Algorithm and Autonomous UAV  DST/SJF/ET/2021/311	Dr.Nidhi Sindhwani  Amity Institute of Information Technology, Noida
72.	Development of AI-Driven High-Confidence Autonomous Cyber-Physical Systems  DST/SJF/ET/2021/310	Dr.Indranil Saha  Indian Institute of Technology-Kanpur



73.	Design and Development of Extended Reality Medical Expert System Model using Artificial Intelligence Algorithms  DST/SJF/ET/2021/309	Dr.Jaffino G  Aditya College of Engineering, Surampalem
74.	Size and Quality Scaling of Wire – Arc Additive Manufacturing (WAAM) for Fabrication of Macro Scale (> 2m) Metal Components of Satellite Launch Vehicles  DST/SJF/ET/2021/308	Prof.Simhambhatla Suryakumar  Indian Institute of Technology, Hyderabad
75.	Secure Computation Challenges, Opportunities and Beyond  DST/SJF/ET/2021/305	Dr.Arпита Patra  Indian Institute of Science Bengaluru
76.	Characterization and Modelling of Utilization of Industrial Waste by-products for Construction of Low Volume Village Roads in Andhra Pradesh, India  DST/SJF/ET/2021/304	Dr.Rajakumar C  Gudlavaluru Engineering College, Krishna District
77.	A unifying framework for parametrizing mixing and eddy diffusivities in stratified shear flows  DST/SJF/ET/2021/303	Prof.Sridhar Balasubramanian  Indian Institute of Technology-Bombay , Mumbai
78.	Decoding the Science of Boiling via Bubble Acoustics - Towards Preemptive Control of Vapor Explosion in Industrial Applications  DST/SJF/ET/2021/302	Dr.Rishi Raj  Indian Institute of Technology, Patna
79.	Design and Development of Multi-functional Meta-surface for Strategic Applications  DST/SJF/ET/2021/301	Prof.Kumar Vaibhav Srivastava  Indian Institute of Technology-Kanpur
80.	Metasurface-based devices at high frequencies for 6G applications  DST/SJF/ET/2021/300	Dr.Somak Bhattacharyya  Indian Institute of Technology-BHU, Varanasi
81.	Intelligent Agent Interaction System for Sewage Cleaning and Monitoring system using Industrial IoT  DST/SJF/ET/2021/299	Dr.Manikandan S  E.G.S. Pillay Engineering College, Nagapattinam
82.	Design and Development of RF MEMS Phase Shifter for 5G and Beyond Phased Array Transceiver  DST/SJF/ET/2021/298	Dr.Deepak Bansal  CSIR - Central Electronics Engineering Research Institute, Pilani

83.	Miniaturized antenna design for capsule endoscopy DST/SJF/ET/2021/297	Dr.SK Moinul Haque Aliah University, Kolkata
84.	Development of Toroidal metamaterial-based efficient Blood Glucose monitoring system DST/SJF/ET/2021/295	Dr.Sarin VP Government College, Chittur