

## **SwarnaJayanti Fellowships Scheme- 2019-20**

**Shortlisted Candidates for Presentation before Subject Area Committee  
in**

**Mathematical Sciences**

**Date of Presentation/ Meeting: Tuesday, 7<sup>th</sup> July, 2020**

**Time: 10.00 a.m.**

<b>S.No</b>	<b>Project Title / Temporary Reference No.</b>	<b>Applicant Name &amp; Address</b>
1.	Analysis of nonlinear nonlocal partial differential equations: A probabilistic viewpoint  DST/SJF/MS/2020/17	<b>Dr. Anup Biswas</b> Deptt. of Mathematics, Indian Institute of Science Education and Research-Pune, Dr. Homi Bhabha Road, Pune -411008
2.	Provable guarantees for machine learning, with a focus on manifolds and Lie theoretic symmetries  DST/SJF/MS/2020/18	<b>Dr. Hariharan Narayanan</b> School of Technology & Computer Science, Tata Institute of Fundamental Research (TIFR) 1, Homi Bhabha Road, Colaba, Mumbai -400005
3.	Special values of L- functions  DST/SJF/MS/2020/22	<b>Dr. Mahesh Kakde</b> Deptt. of Mathematics, Indian Institute of Science, C. V. Raman Road, Bengaluru-560012

## SwarnaJayanti Fellowships Scheme- 2019-20

**Shortlisted Candidates for Presentation before Subject Area Committee in Physical Sciences on 10<sup>th</sup> August, 2020 (Monday) at 1030 hrs through video conferencing/ web meeting**

S.No	Title of the Proposed Project Proposal/ Temporary File No.	Applicant Name And Address
1.	Studies on the spectral and temporal modification of spontaneous emission of solid state defects using resonant photonic structures DST/SJF/PS/2020/60	Dr. Rajesh V. Nair Department of Physics, Indian Institute of Technology-Ropar, Nangal Rd, Hussainpur, Rupnagar-140001
2.	Imaging convection in the interior of the Sun  DST/SJF/PS/2020/62	Dr. Shravan Hanasoge Department of Astronomy and Astrophysics, Tata Institute of Fundamental Research, 1, Homi Bhabha Road, Colaba, Mumbai -400005
3.	Building Better Batteries: Development of Dual-Carbon and Al-ion Battery Prototypes from Spent Li-ion Battery DST/SJF/PS/2020/64	Dr. Vanchiappan Aravindan Department of Chemistry, Indian Institute of Science Education and Research-Tirupati, Rami Reddy Nagar, Karakambadi Road, Mangalam P.O. Tirupati-517507
4.	Neutrino Murmurations and Supernova Explosions  DST/SJF/PS/2020/66	Dr. Basudeb Dasgupta Department of Theoretical Physics, Tata Institute of Fundamental Research, 1, Homi Bhabha Road, Colaba, Mumbai-400005
5.	On Progressing a Leap Forward to Understand Heating and Mass Transport in the Sun's Atmosphere  DST/SJF/PS/2020/70	Dr. Abhishek Kumar Srivastava Department of Physics, Indian Institute of Technology-BHU, Banaras Hindu University, Varanasi-221005
6.	Novel transport and optical phenomena induced by Berry curvature in topological and 2D materials. DST/SJF/PS/2020/77	Dr. Amit Agarwal Department of Physics, Indian Institute of Technology-Kanpur Kanpur -208016
7.	Driven and correlated quantum matter  DST/SJF/PS/2020/82	Dr. Arnab Sen School of Physical Sciences, Indian Association for the Cultivation of Science, 2A & 2B Raja S C Mullick Road, Kolkata -700032
8.	Beyond Standard Model Physics at Energy, Intensity, and Cosmic Frontiers through the Looking Glasses of Neutrino, Dark Matter, and Gravitational Wave DST/SJF/PS/2020/97	Dr. Manimala Mitra Institute of Physics, Sachivalaya Marg, Bhubaneswar-751005
9.	Engineering Quantum Matter and Quantum states in dipolar systems towards Quantum technological Applications DST/SJF/PS/2020/104	Dr. Rejish Nath Department of Physics, Indian Institute of Science Education and Research-Pune Dr. Homi Bhabha Road, Pune -411008
10.	Landscape of Beyond the Standard Model Physics at Neutrino Experiments DST/SJF/PS/2020/109	Dr. Sanjib Kumar Agarwalla Institute of Physics, Sachivalaya Marg, Bhubaneswar -751005

## SwarnaJayanti Fellowships Scheme- 2019-20

**Shortlisted Applicants/Candidates for Presentation  
before Subject Area Committee in Life Sciences on 15<sup>th</sup> September, 2020 (Tuesday)  
at 0900 hrs through video conferencing/ web meeting**

S.No	Title of the Proposed Project Proposal/ Temporary File No.	Applicant Name and Address
1.	Enhancing sheath blight disease tolerance in rice  DST/SJF/LS/2020/176	<b>Dr. Gopaljee Jha</b> National Institute Of Plant Genome Research- (NIPGR) Aruna Asaf Ali Marg, P.O. Box No. 10531 New Delhi-110067.
2.	Decoding the catalog of tRNA-like molecules in Bread wheat  DST/SJF/LS/2020/181	<b>Dr. Santosh Kumar Upadhyay</b> Deptt. of Botany, Panjab University, Sector 14, Chandigarh-160014.
3.	Molecular Mechanisms Shaping Environment Sensing in Bacteria - Linking Microscopic Energetics and Dynamics to Stress and Pathogenic Response  DST/SJF/LS/2020/182	<b>Dr. Athi Narayanan. N</b> Deptt. of Biotechnology, Indian Institute of Technology-Madras, Chennai -600036.
4.	Innovative Molecular Strategies Against Defective Proteostasis: Promising Events to Restore Improper Sequestration  DST/SJF/LS/2020/184	<b>Dr. Amit Mishra</b> Deptt. of Bioscience and Bioengineering, Indian Institute of Technology Jodhpur, Jodhpur- 342037.
5.	Real-time evaluation of spatio-temporal fingerprints of nanomachinery involved in the early onset of Alzheimer's Disease at an excitatory synapse  DST/SJF/LS/2020/195	<b>Dr. Deepak Nair</b> Centre for Neuroscience, Indian Institute of Science, Bengaluru-560012.
6.	Molecular Bioenergetics and Apoptosis Regulation by Human Mitochondrial VDAC  DST/SJF/LS/2020/210	<b>Dr. R. Mahalakshmi</b> Deptt. of Biological Sciences, Indian Institute of Science Education and Research-Bpl, Bhopal Bypass Road, Bhauri, Bhopal-462066.
7.	Unraveling key enzymes for triterpene biosynthesis in <i>Boswellia serrata</i> towards the development of a sustainable process for antiinflammatory drug production  DST/SJF/LS/2020/228	<b>Dr. Sumit Ghosh</b> Biotechnology Division, CSIR-Central Institute of Medicinal and Aromatic Plants, CIMAP P.O, Near Kukrail Picnic Spot Lucknow-226015.
8.	Modeling human liver microarchitecture and cellular physiology <i>in vitro</i> using 3D bioprinting for drug toxicity and high throughput drug screening applications  DST/SJF/LS/2020/233	<b>Dr. Biman B. Mandal</b> Deptt. of Biosciences and Bioengineering, Indian Institute of Technology-Guwahati, Guwahati-781039.
9.	Microglial remodeling of actin network for P2Y12-receptor-mediated phagocytosis of Tau oligomers  DST/SJF/LS/2020/235	<b>Dr. Subashchnadrabose Chinnathambi</b> Biochemical Sciences Division, CSIR-National Chemical Laboratory, Dr. Homi Bhabha Road, Pune-411008.

S.No	Title of the Proposed Project Proposal/ Temporary File No.	Applicant Name and Address
10.	Therapeutic induction of translational readthrough across muscular dystrophy-causing premature stop codon of dystrophin DMD mRNA DST/SJF/LS/2020/238	<b>Dr. Sandeep Eswarappa</b> Deptt. of Biochemistry, Indian Institute of Science, Bengaluru-560012.
11.	The role of nitrite and nitric oxide in hypoxia sensing, signaling and flooding tolerance in plants DST/SJF/LS/2020/239	<b>Dr. Jagadis Gupta Kapuganti</b> National Institute of Plant Genome Research (NIPGR), Aruna Asaf Ali Marg, P.O. Box No. 10531, New Delhi-110067
12.	Deciphering the Potential Crosstalk Between $\alpha$ - Synuclein and the Intrinsically Disordered Nuclear Pore Complex Proteins (FG-Nucleoporins) in Parkinson's Disease DST/SJF/LS/2020/241	<b>Dr. Timir Tripathi</b> Deptt. of Biochemistry, North Eastern Hill University (NEHU), Mawlai, Shillong-793022.
13.	Single-cell level chromatin organization and dynamics as regulators of tissue-specific DNA damage responses, gene expression and cancer development DST/SJF/LS/2020/242	<b>Dr. Aprotim Mazumder</b> Tata Institute of Fundamental Research Hyderabad Gopanpally, Hyderabad-500107.

**SwarnaJayanti Fellowships Scheme- 2019-20**

**Shortlisted Candidates for Presentation before Subject Area Committee in Earth & Atmospheric Sciences on 7<sup>th</sup> August, 2020 (Friday)at 1000 hrs through video conferencing/ web meeting**

<b>S.No</b>	<b>Title of the Proposed Project Proposal/ Temporary File No.</b>	<b>Candidate/Applicant Name And Address</b>
1.	What compensates the masking effects of aerosols on global warming  DST/SJF/EAS/2020/33	Dr.Vijayakumar S. Nair Space Physics Laboratory, Vikram Sarabhai Space Centre , Thiruvananthapuram-695022
2.	Life in a changing world Response of molluscan biota to Oligo-Miocene regional tectonics of India  DST/SJF/EAS/2020/43	Dr. Devapriya Chattopadhyay Department of Earth and Climate Science, Indian Institute of Science Education and Research-Pune, Dr. Homi Bhabha Road, Pune-411008
3.	Role of CO <sub>2</sub> in Amplifying Glacial-Interglacial Cycles  DST/SJF/EAS/2020/45	Dr. Sambuddha Misra Centre for Earth Sciences, Indian Institute of Science, Bengaluru-560012
4.	Development of a global emission inventory and future projections for the climatically sensitive oceanic trace gas dimethyl sulfide (DMS)  DST/SJF/EAS/2020/51	Dr. Anoop Sharad Mahajan Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan, Pune -411008
5.	Shock processing of astrochemical ices  DST/SJF/EAS/2020/54	Dr. Bhalamurugan Sivaraman AMOPH Division, Physical Research Laboratory, Navrangpura, Ahmedabad -380009

## SwarnaJayanti Fellowships Scheme- 2019-20

Shortlisted Candidates for Presentation before Subject Area Committee in  
Chemical Sciences on 28<sup>th</sup> July, 2020 (Tuesday) at 945 hrs  
through video conferencing/ web meeting

S.No	Title of the Proposed Project Proposal/ Temporary File No.	Applicant Name And Address
1.	Modulating dopant-graphene interactions through molecular design Towards stable n-doped graphene and consequent hierarchical molecular devices  <b>DST/SJF/CS/2020/52</b>	Dr. Maheswaran Shanmugam Deptt. of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai -400076
2.	Iridium-Catalyzed Enantioselective Allylic Substitution Reactions and their Applications for the Synthesis of Active Pharmaceutical Ingredients (APIs)  <b>DST/SJF/CS/2020/53</b>	Dr. Santanu Mukherjee Deptt. of Organic Chemistry, Indian Institute of Science, Bengaluru- 560012
3.	Lanthanide Doping in Perovskite Semiconductors: visible to infrared electroluminescence  <b>DST/SJF/CS/2020/54</b>	Dr. Angshuman Nag Deptt. of Chemistry, Indian Institute of Science Education and Research Pune, Dr. Homi Bhabha Road, Pune -411008
4.	Chemical Bonding Under Stress: Stabilizing New Phases of Materials Under Extreme Condition  <b>DST/SJF/CS/2020/55</b>	Dr. Ayan Datta School of Chemical Sciences, Indian Association for the Cultivation of Science, 2A & 2B Raja S C Mullick Road, Kolkata -700032
5.	Guiding Artificial Metalloenzymes Towards Synthesizing Optically Active Pharmaceuticals  <b>DST/SJF/CS/2020/67</b>	Dr. Debabrata Maiti Deptt. of Chemistry, Indian Institute of Technology-Bombay, Powai, Mumbai -400076
6.	Sustained Autonomy in Out of Equilibrium Supramolecular Materials  <b>DST/SJF/CS/2020/68</b>	Dr. Dibyendu Das Deptt. of Chemical Sciences, Indian Institute of Science Education and Research (IISER)- Kolkata, Mohanpur-741246
7.	Design, development and application of C2-symmetric chiral cyclopentadien(on)e in the transition metal catalyzed asymmetric transformation  <b>DST/SJF/CS/2020/73</b>	Dr. P. Anbarasan Deptt. of Chemistry, Indian Institute of Technology-Madras, Chennai -600036
8.	Non-innocent Ligands for Catalysis with Earth-Abundant Metals  <b>DST/SJF/CS/2020/74</b>	Dr. Ekambaram Balaraman Deptt. of Chemistry, Indian Institute of Science Education and Research- Tirupati, Rami Reddy Nagar, Karakambadi Road, Mangalam P.O, Tirupati -517507

S.No	Title of the Proposed Project Proposal/ Temporary File No.	Applicant Name And Address
9.	Photoresponsive Memristive Discotic Liquid Crystals for the Development of Conceptually New Artificial Eye  <b>DST/SJF/CS/2020/86</b>	Dr. Santanu Kumar Pal Deptt. of Chemical Sciences, Indian Institute of Science Education and Research-Mohali Knowledge City, Sector 81, SAS Nagar, Manauli P.O Mohali-140306
10.	Deciphering the origin of stability of PPII helices: Rational design of PPII helical polyQ-aggregation inhibitors and artificial collagen mimics  <b>DST/SJF/CS/2020/89</b>	Dr. Bani Kanta Sarma New Chemistry Unit, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Jakkur P.O, Bengaluru -560064
11.	Engineering Artificial Bio-hybrid Catalysts for Asymmetric Catalysis and Sustainable Chemistry  <b>DST/SJF/CS/2020/92</b>	Dr. Basker Sundararaju Deptt. of Chemistry, Indian Institute of Technology- Kanpur, Kanpur - 208016

## SwarnaJayanti Fellowships Scheme- 2019-20

**Shortlisted Candidates for Presentation before SAC in Engineering Sciences  
on 10<sup>th</sup> September, 2020 (Thursday) at 1000 hrs through video conferencing/  
web meeting**

S.No	Title of the Proposed Project Proposal/ Temporary File No.	Applicant Name and Address
1.	Large-area 'printed' desalination membranes derived from external stimulus aligned graphene oxide liquid crystals <b>DST/SJF/ET/2020/149</b>	Dr. Suryasarathi Bose Deptt. of Materials Engineering, Indian Institute of Science, Bengaluru-560012
2.	Development of a low cost sensor array based on surface functionalized 2D-MoS2 for detection of vital proteins and neurotransmitters in human fluids <b>DST/SJF/ET/2020/151</b>	Dr. Sushmee Badhulika Deptt. of Electrical Engineering, Indian Institute of Technology-Hyderabad, Kandi, Sanga Reddy, Telangana-502285
3.	Approximate Computing in IoT, Wearable, and Energy-Harvesting Devices using Unconventional Technologies <b>DST/SJF/ET/2020/157</b>	Dr. Smruti Ranjan Sarangi Deptt. of Computer Science & Engineering, Indian Institute of Technology -Delhi Hauz khas, New Delhi -110016
4.	Artificial Intelligence and Virtual Reality based Personalized Framework for Remote Management of Diagnostics and Therapeutics of Children with Cognitive Disabilities ALL-SMILE <b>DST/SJF/ET/2020/175</b>	Dr. Amit Acharyya Deptt. of Electrical Engineering, Indian Institute of Technology-Hyderabad, Kandi, Sanga Reddy, Telangana-502285
5.	Quantum Heterostructure Based Artificial Synapse for Bio-Inspired Neuromorphic System-on-Chip <b>DST/SJF/ET/2020/185</b>	Dr. Mayank Shrivastava Deptt. of Electronic Systems Engineering, Indian Institute of Science, Bengaluru-560012
6.	Tackling antimicrobial resistance through single bacterial cell capture and profiling using AC electric fields <b>DST/SJF/ET/2020/194</b>	Dr. Shalini Gupta Dept. of Chemical Engineering, Indian Institute of Technology- Delhi Hauz Khas, New Delhi-110016
7.	Scientific Understanding and Technical Development of Metal-CO <sub>2</sub> battery with CO <sub>2</sub> as an Energy Carrier for India's Mars Mission <b>DST/SJF/ET/2020/196</b>	Dr. Chandra Shekhar Sharma Deptt. of Chemical Engineering, Indian Institute of Technology-Hyderabad Kandi, Sanga Reddy, Telangana-502285
8.	Moving away from 'ordered' towards 'disordered' Li - transition metal oxide cathodes for Li-ion batteries: Opening-up the possibility for using a wide range of transition metals, sans Co <b>DST/SJF/ET/2020/210</b>	Dr. Amartya Mukhopadhyay Deptt. of Metallurgical Engg. & Materials Science, Indian Institute of Technology-Bombay Powai, Mumbai-400076



S.No	Title of the Proposed Project Proposal/ Temporary File No.	Applicant Name and Address
9.	Low-cost ZnO-transistor based DC-to-DC converter for next-generation hybrid electric vehicles and energy storage systems <b>DST/SJF/ET/2020/212</b>	Dr. Shaibal Mukherjee Deptt. of Electrical Engineering, Indian Institute of Technology-Indore Khandwa Road, Simrol, Indore -453552
10.	High-Performance Compiler Infrastructure for AI/ML Computations DST/SJF/ET/2020/253	Dr. Uday Kumar Reddy. B Deptt. of Computer Science and Automation, Indian Institute of Science, Bengaluru-560012
11.	Phonon Source for Quantum Computing and Imaging <b>DST/SJF/ET/2020/254</b>	Dr. Prabhu Rajagopal Deptt. of Mechanical Engineering, Indian Institute of Technology-Madras Chennai-600036
12.	Towards detecting single photon using atomically sharp junction <b>DST/SJF/ET/2020/277</b>	Dr. Kausik Majumdar Deptt. of Electrical Communication Engg., Indian Institute of Science, Bengaluru-560012