SCHEME FOR TRANSFORMATIONAL AND ADVANCED RESEARCH IN SCIENCES (STARS)

Recommended proposals in the second call for proposals: Nano Sciences

S.No	Proposal ID	Proposal Title	Principal Investigator	Institution
1	2023-0023	In-Memory Computing Utilizing Ferroelectric Transistors	Prof. Yogesh Singh Chauhan	IIT Kanpur
2	2023-0077	Enabling solid-state nanopore based single-molecule DNA and RNA sequencing using dual force control	Prof. Manoj Varma	IISc Bangalore
3	2023-0148	Deep Ultraviolet Light Emitting Diodes Based on AlGaN and InAlGaN Thin Films and Nanorods for Skin-tolerant Pathogen Inactivation Applications	Dr. Anirban Bhattacharyya	Calcutta University, Kolkata, West Bengal
4	2023-0175	Experimental investigation of solar-driven self-powered seawater photo-electrocatalytic hydrogen production using nano-hybrid materials	Dr. Subhasis Roy	Calcutta University, Kolkata, West Bengal
5	2023-0213	Tailoring Na-Anodes for Stable and Efficient Na-Metal Batteries: Na-S as the Test Case	Dr. Rosy	IIT BHU (Varanasi)
6	2023-0228	Design and Development of Compocast Street Light LED heat sinks out of Al-Si-MWCNT alloy composite.	Dr. Prosenjit Das	IISc Bangalore
7	2023-0257	Neuromorphic and Ising Computing using Spintronic Nano-Oscillators for Machine Learning and Optimization Applications: Experiments and Modelling	Prof. Debanjan Bhowmik	IIT Bombay
8	2023-0265	Creating 2D to 3D van der Waals material stacks using an automated transfer system	Dr. Akshay Singh	IISc Bangalore
9	2023-0318	Development of Implantable Engineered-Cells-Nano-Polymer-hydrogel based immune therapeutic tool for pancreatic cancer	Dr. PRADIP PAIK	IIT BHU (Varanasi)
10	2023-0327	Flexible Electronics for Compact Self-powered Paper-based Analytical Device for Uric Acid Sensing in Human Urine	Dr. Pydi Ganga M. Bahubalindruni	IISER Bhopal

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11	2023-0340	Development of Upconversion Nanoparticles Conjugated Carbon Dots as Amplified Singlet Oxygen Generator for Synergistic Photodynamic Therapy	Dr. Sumanta Kumar Sahu	IIT (ISM) Dhanbad
12	2023-0355	Lithium-mediated electrochemical ammonia production through nano-engineering of solid-electrolyte interface	Prof. Ankit Jain	IIT Bombay
13	2023-0365	Development of Mixed Phase Layered Oxide Cathodes for Sodium-Ion Batteries	Prof. Sunil Kumar	IIT Indore
14	2023-0401	Experimental and Theoretical Investigation of Lead-Free CsAB3 (A=Sn, Ge; B=I, Cl, Br) Perovskite Solar Cells for Photo Conversion Efficiency and Stability Enhancement	Dr. Dip Prakash Samajdar	PDPM-IIITD&M Jabalpur
15	2023-0424	Analog Dot product Engines using Molecular Memristive Hardware for Artificial Intelligence	Dr. Sreetosh Goswami	IISc Bangalore
16	2023-0586	Investigation of Graphene Hexagonal Boron Nitride nanocomposites for electromagnetic shielding interference application using THz Time domain spectroscopy	Dr. Jayeeta Lahiri	Banaras Hindu University
17	2023-0589	On-chip FET based tunable ultra-micro supercapacitor array for a large potential window	Prof. Abha Misra	IISc Bangalore
18	2023-0590	Carbon dioxide-fuelled Janus Nano Flask Motors for Targeted Delivery of Therapeutic Cargo in Helicobacter pylori Infection	Prof. Swati Biswas	Birla Institute of Technology & Science - Pilani, Pilani, Rajasthan
19	2023-0620	Bioactive Microbubbles as Autonomous Targeted Drug Delivery Carriers	Dr. Krishna Kanti Dey	IIT Gandhinagar
20	2023-0621	Design and Development of 2D Materials Avalanche Phototransistor with Distributed Bragg Reflectors	Dr. Samaresh Das	IIT Delhi

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21	2023-0642	Interlayer exchange coupling based robust, non-volatile, scalable and reconfigurable PUF hardware	Dr. Tanmay Dutta	IIT Guwahati
22	2023-0665	Micro-nano structured urinary catheters to minimize catheter-associated urinary tract infections (CAUTI)	Prof. Deepak Deelip Patil	NIT Tiruchirappalli
23	2023-0676	Self-assembled vertically aligned nanocomposites for memory and neuromorphic computing applications	Dr. Abhijeet Laxman Sangle	IIT Bombay
24	2023-0736	Novel Perovskite Based Optoelectronic Neuromorphic Devices for Next Generation Human-Machine Interfaces	Dr. Aditya Sadhanala	IISc Bangalore
25	2023-0754	Application of biogenic nanoparticles for improved microalgae growth and fuel grade chemicals production	Dr. Sanjeev Kumar Prajapati	IIT Roorkee
26	2023-0834	Development of miniature lithium ion batteries for on-chip energy storage	Prof. M. M. Shaijumon	IISER Thiruvananthapuram
27	2023-0880	Phase and Bandgap Engineering of III-Oxides in Quest of Interfacial 2DEG	Dr. Ankush Bag	IIT Guwahati
28	2023-0957	Scalable laser writing of spin-defects two-D materials and diamond for quantum technologies – sensing and photonics	Prof. Sivarama Krishnan	IIT Madras
29	2023-1012	Harnessing Direct and Indirect Excitons in TMDCs for photo-stimulated device applications.	Prof. Joy Mitra	IISER Thiruvananthapuram
30	2023-1024	Synthesizing Pristine Metal Diboride Nanosheets and their Nanoparticle Hybrids as Catalysts for Hydrogen Evolution and Nitorgen Activation	Prof. Kabeer Jasuja	IIT Gandhinagar