

**SCHEME FOR TRANSFORMATIONAL AND ADVANCED RESEARCH IN SCIENCES (STARS)  
Recommended proposals in the second call for proposals: Physical Sciences**

<b>S.No</b>	<b>Proposal ID</b>	<b>Proposal Title</b>	<b>Principal Investigator</b>	<b>Institution</b>
1	2023-0019	Utilising the Mullins-Sekerka Instability to Design Layered Polymer Composites	Dr. Sumesh P Thampi	IIT Madras
2	2023-0048	Ferroelectric topologies- integrated to silicon and application to high energy storage, neuromorphic network and broadband telecommunication	Dr. SUJIT DAS	IISc Bangalore
3	2023-0114	A solar-battery based smart and modular power supply integrated with local grid system	Dr. Anubrata Dey	IIT Roorkee
4	2023-0128	A Low-complexity Quantum Simulation Framework for Efficient Spectrum Estimation and Detection in Large Antenna Array Communication System	Dr. Amit Kumar Dutta	IIT Kharagpur
5	2023-0161	Exploring Hybrid Circuit QED Systems for Quantum Technology	Prof. Amarendra Kumar Sarma	IIT Guwahati
6	2023-0208	ULTRAFAST TERAHERTZ SUPER-SPINTRONICS	Dr. Yogesh Kumar Srivastava	IIT Hyderabad
7	2023-0233	Laser Driven Bright X ray Sources for Imaging	Dr. Bhuvanesh Ramakrishna	IIT Hyderabad
8	2023-0302	Exploring the novel piezoelectric ternary nitride system for realizing efficient high-temperature Ultrasonic Transducer and AE sensors	Dr. Mangalampalli S R N Kiran	SRM Institute of Science and Technology, SRM Nagar, Kancheepuram Dist., Tamil Nadu, 603203
9	2023-0309	Development of strain-sensitive experimental platforms for tunable 2D moiré devices	Dr. Chandni U.	IISc Bangalore
10	2023-0346	Self-organization of Non-spherical and Soft Colloids via Controlled Evaporation	Prof. Madivala G. Basavaraj	IIT Madras

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11	2023-0407	Development of radiation resistant high entropy alloys for energy applications	Dr. Pawan Kumar Kulriya	Jawaharlal Nehru University
12	2023-0415	Microwave photonic phase shifter and high-resolution frequency measurement exploiting coherent Brillouin interactions	Dr. Ravi Pant	IISER Thiruvananthapuram
13	2023-0437	Controlling skyrmion hall effect in Multiferroic/Ferromagnet/heavy-metal heterostructure	Dr. Mohammad Waseem Akhtar	Jamia Millia Islamia
14	2023-0439	Realizing Electron Hydrodynamics at Room Temperature in van der Waals heterostructure for practical applications	Dr. Chandan Kumar	IISc Bangalore
15	2023-0479	Development of near room temperature superconductor by environmentally stable Ag-Au mesoscopic thin film	Dr. Bhola Nath Pal	IIT BHU (Varanasi)
16	2023-0486	Investigating the Potential of Cavity Optomechanics in Microwave Oscillation and Frequency Comb Generation	Dr. Kapil Debnath	IIT Kharagpur
17	2023-0496	Magnetic field-free switching in spin-filter tunnel junctions for high speed, high endurance, and high-density memory and big data applications	Prof. Bhagwati Prasad	IISc Bangalore
18	2023-0558	Multifunctional nanorobots for targeted delivery and on-demand photo-thermal applications	Dr. Dhruv Pratap Singh	IIT Bhilai
19	2023-0571	Cavity Embedded GaAs Quantum Dots as Single Photon Emitters for 700–780 nm Wavelength	Prof. SANTANU MANNA	IIT Delhi
20	2023-0715	Room Temperature Single Atom Transistors and High Temperature Quantum Bits Using Nitrogen Deep Dopant in Silicon	Dr. Arup Samanta	IIT Roorkee

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21	2023-0716	Higher Orbital Topological Photonics	Dr. Sebabrata Mukherjee	IISc Bangalore
22	2023-0773	Fundamental and Applied Aspects of Ultra-Low Interfacial Tension (ULIT) Fluids	Prof. Krishnacharya	IIT Kanpur
23	2023-0809	Quantum information processing from distinguishability of physical processes	Dr. Debashis Saha	IISER Thiruvananthapuram
24	2023-0812	Study of droplet dynamics and phase change on soft materials towards enhanced atmospheric water harvesting	Dr. Chander Shekhar Sharma	IIT Ropar
25	2023-0814	Multiscale approach for understanding the front propagation of swarming bacterial colonies	Dr. Sivasurender Chandran	IIT Kanpur
26	2023-0850	An AI-based diagnostic pipeline for chronic immunoinflammatory diseases based on lymphocyte immunological synapse architecture and signaling	Prof. Sumantra Sarkar	IISc Bangalore
27	2023-0909	Nonequilibrium self-assembly of colloidal particles in living fluids	Dr. Vijayakumar Chikkadi	IISER Pune
28	2023-0912	Towards exciton-based valleytronic technologies using 2D semiconductor/magnet heterostructures: high-performance magneto-optics and magneto-ellipsometry investigations	Prof. Ashish Arora	IISER Pune
29	2023-0944	Experimental investigations of Transport and Modal Properties in non-Hermitian coupled Photonic Systems	Prof. Anjani Kumar Tiwari	IIT Roorkee
30	2023-0998	Lithographically Patternable Mesoscopic Oxide Electronics on surface doped SrTiO <sub>3</sub>	Dr. Ananth Venkatesan	IISER Mohali

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31	2023-1036	Low Noise Supercontinuum Source for Hyperspectral Imaging	Dr. Arun Surendran	IIT Bombay
32	2023-1055	Terahertz-light driven Ultrafast Magnon Polaritons dynamics in Antiferromagnetic Materials	Dr. Manukumara Manjappa	IISc Bangalore