

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

S.No	Proposal ID	Proposal Title	Principal Investigator	Institution
1	2023-0016	Formulation of low-cost and effective Self-cleaning Cement	Dr. Jatinder Kumar Ratan	NIT Jalandhar
2	2023-0038	Development of new bifunctional heterogeneous catalysts for selective conversion of polyolefin plastic waste into liquid fuels	Dr. Sudarsanam Putla	IIT Hyderabad
3	2023-0040	Investigations of Chromone Based Multi-target Directed Ligands as Potential Drug Candidates for the Treatment of Alzheimer's Disease	Dr. Vinod Kumar	Central University of Punjab
4	2023-0047	Multimodal Photocatalytic Therapy Based on NIR-Active Perovskite-Peptide Nanocomposites for Hard-To-Treat Lung Biofilm Infections	Dr. Amirul Islam Mallick	IISER Kolkata
5	2023-0065	Post-synthetic modification of porous organic polymers for improved CO <sub>2</sub> capture and its utilization for the synthesis of acrylic acid and its derivatives	Dr. Venkata Rao Kotagiri	IIT Hyderabad
6	2023-0092	Bench-stable di/trifluoromethylating reagents and their applications in radical-based difunctionalization of alkenes	Dr. Veera Reddy Yatham	IISER Thiruvananthapuram
7	2023-0109	Generating Energy Transfer Systems and Monitoring Catalytic Activities in Biomolecule-templated Nanostructures	Prof. Saptarshi Mukherjee	IISER Bhopal
8	2023-0115	Metal-free low-cost POSS-based lumophores synthesized using hydrosilylation for OLED applications	Dr. Chinmoy Kumar Hazra	IIT Delhi
9	2023-0120	Design and Synthesis of Metal-Organic Frameworks with High CO <sub>2</sub> Binding Site Density from Melamine Derivatives for CO <sub>2</sub> Sequestration and Conversion	Prof. SARAVANAKU MAR RAJENDRAN	Vellore Institute of Technology, Vellore, Tamil Nadu
10	2023-0123	Development of novel ferrocene-based metal organic frameworks (MOFs) as heterogeneous catalysts for sustainable organic transformations	Dr. Meena Nemiwal	MNIT Jaipur

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

<b>S.No</b>	<b>Proposal ID</b>	<b>Proposal Title</b>	<b>Principal Investigator</b>	<b>Institution</b>
11	2023-0126	Chemical synthesis of Bleomycin carbohydrate-based tools for biomedical application	Dr. Abhijit	IIT Hyderabad
12	2023-0130	Complexes Containing Functionalized Pincer and Ambiphilic Ligands for Conversion of CO <sub>2</sub> to valuable products without H <sub>2</sub> Under Homogeneous and Heterogeneous Conditions	Prof. Ganesan Mani	IIT Kharagpur
13	2023-0147	Exploring Stable Organofluorophosphonium/Organofluoroammonium Salts as Difluoromethylating Reagents in Asymmetric Organic Synthesis	Dr. Basudev Sahoo	IISER Thiruvananthapuram
14	2023-0158	Designing efficient and robust catalysts for the mitigation of CO <sub>2</sub> and its conversion as C <sub>1</sub> or C <sub>2</sub> products	Prof. MAHESWARAN SHANMUGAM	IIT Bombay
15	2023-0179	Single-Molecule Studies of Multi-Component Biomolecular Condensates of TDP-43	Prof. Samrat Mukhopadhyay	IISER Mohali
16	2023-0186	Paired Electrocatalysis with Functional Materials: Electrochemical Synthesis of Value-Added Products	Prof. C. Retna Raj	IIT Kharagpur
17	2023-0195	Photochemistry with Plasmonic Materials: Taking the Heat Out of Plasmons for Translational Chemical Transformations	Prof. Pramod P. Pillai	IISER Pune
18	2023-0204	Resonance Raman Spectroscopic studies of red blood cells to identify biomarkers of inflammation	Prof. Siva Umopathy	IISc Bangalore
19	2023-0206	N-Heterocyclic Carbene-Catalyzed Transformations for the Synthesis of Axially Chiral Molecules	Dr. Akkattu T Biju	IISc Bangalore
20	2023-0215	Non-invasive Diagnosis of Renal Amyloidosis using Fluorescence Correlation Spectroscopy	Prof. Pratik Sen	IIT Kanpur

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

S.No	Proposal ID	Proposal Title	Principal Investigator	Institution
21	2023-0218	In-depth computational and experimental studies for the development of cationic porous organic polymer (C-iPOPs) for anionic organic pollutants sequestration from water	Prof. SUJIT KUMAR GHOSH	IISER Pune
22	2023-0222	A Core-shell Hybrid Sorbent for Efficient Marine Oil Spill Recovery	Prof. Kana M Sureshan	IISER Thiruvananthapuram
23	2023-0232	Divergent catalytic approach to sustainable and affordable synthesis of chiral amines and pharmaceuticals	Prof. Ekambaram Balaraman	IISER Tirupati
24	2023-0269	Understanding Ultrafast and Ultrasensitive Exciton Dynamics (Ensemble to Single Particle, Femtoseconds to Seconds) in Toxic Metal Free Quantum Dots and Perovskites Towards Colour Pure Highly Stable and Bright LEDs.	Prof. Prasun K. Mandal	IISER Kolkata
25	2023-0293	“Production of Hydrogen from Sea water electrolysis using Photovoltaic /Wind energy hybrid systems using economically specialized membrane”.	Dr. M S Thakur	NITTE MEENAKSHI INSTITUTE OF TECHNOLOGY (AUTONOMOUS), Bangalore, Karnataka, 560064
26	2023-0297	Photoresponsive Chromonic Liquid Crystals and Designer Peptides for Emergent Applications	Dr. SHANKER GOVINDASWAMY	Bangalore University, Bangalore, Karnataka
27	2023-0300	Real-time Monitoring of Lysosomal ATP: A generalized Biomarker for Point-of-Care Testing of Lysosomal storage diseases (LSDs)	Dr. Nilanjan Dey	Birla Institute of Technology & Science - Pilani, Pilani, Rajasthan
28	2023-0301	Design of Single Ion Magnets with reduced Quantum Tunnelling of Magnetization for Higher Blocking Temperature	Prof. Sanjit Konar	IISER Bhopal
29	2023-0311	Design and Development of Chemical and Electrochemical Methodologies for Fluorination Organic Molecules	Prof. Thilagar P	IISc Bangalore
30	2023-0313	Novel Aggregation Induced Thermally Activated Delayed Fluorescent (AIE-DF) Organic Luminogens for Time-resolved Fluorescence Imaging and Efficient OLED Device Fabrication	Prof. Partha Hazra	IISER Pune

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

S.No	Proposal ID	Proposal Title	Principal Investigator	Institution
31	2023-0368	Electrochemical Routes to Synthesis the 2,5-Furandicarboxylic Acid from Biomass-Derived 5-Hydroxymethylfurfural	Dr. Muthukrishnan	IISER Thiruvananthapuram
32	2023-0372	Printed, wearable sensor array for non-invasive monitoring of diabetic complications and chronic kidney diseases	Dr. Suresh Kumar Garlapati	IIT Hyderabad
33	2023-0374	A Mechanistic Insight into the Effect of Hetero-atom Substitution on the Metal-mediated Aldehyde Deformylation Reactions	Prof. Chivukula V. Sastri	IIT Guwahati
34	2023-0379	Development of nanostructure decorated Quasi symmetrical electrodes for high performance fuel cell system	Prof. Suresh Babu K	Pondicherry University
35	2023-0402	Gaining molecular insights into complex coacervation of food proteins using spectroscopic techniques	Dr. Mily Bhattacharya	THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, PATIALA, PUNJAB, 147004
36	2023-0418	Metal-free Multichromophoric FRET Macrocycles as Multi-Stimuli Responsive Smart Materials for Multifunctional Sensing and Visible and NIR Photocatalysis	Dr. sanchita sengupta	IISER Mohali
37	2023-0450	Eco-Friendly and Economically Affordable Bio-Inspired Metal-Ligand Cooperative Approaches for Sustainable Synthesis of Biologically and Medicinally Active Molecules	Dr. NANDA DULAL PAUL	IEST Shibpur
38	2023-0461	Development of multifunctional and recyclable elastomeric materials via dynamic crosslinking network	Dr. Chayan Das	VNIT Nagpur
39	2023-0465	Geometrical Shaping of Organic Crystals via Ion Beam Milling for Industrial Scale Production of Photonic Integrated Circuit Components	Prof. RAJADURAI CHANDRASEKAR	University of Hyderabad
40	2023-0473	Single-molecule FRET Imaging for Real-time DNA Fingerprinting Analysis	Dr. Dibyendu Kumar Sasmal	IIT Jodhpur

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

<b>S.No</b>	<b>Proposal ID</b>	<b>Proposal Title</b>	<b>Principal Investigator</b>	<b>Institution</b>
41	2023-0474	A mechanistically-driven, photochemical approach towards the sustainable use of hydrogen feedstocks and carbon-dioxide	Dr. Debashis Adhikari	IISER Mohali
42	2023-0490	Deriving a Structure Property Correlation for Enhanced Chiral Light Emission from Functional Molecules and Supramolecular Assemblies: Towards Development of Circularly Polarized Organic Light Emitting Devices	Dr. Jatish kumar	IISER Tirupati
43	2023-0522	MOF-Nanocellulose Hybrid Composite Materials for CO2 Capture and Separation Applications	Dr. Thirumurugan Alagarsamy	IISER Thiruvananthapuram
44	2023-0529	Non-Invasive Förster Resonance Energy Transfer (FRET) Operating Near-Infrared Benzothiazole-(Aza)Borondipyrromethene Based Fluorescent Probes for the Early Detection of Alzheimer's Disease	Dr. Raghu CHitta	NIT Warangal
45	2023-0535	Development of energy-efficient nanoscale molecular memristors	Dr. PRAKASH CHANDRA MONDAL	IIT Kanpur
46	2023-0542	Ion transport dynamics in nanostructured cathode materials for Lithium and Sodium battery materials: Application of solid state MAS NMR and electrochemical methods	Dr. Samanwita Pal	IIT Jodhpur
47	2023-0563	Utilization and conversion of carbon dioxide to value-added fuels and simultaneous power generation via aqueous Zn-CO2 batteries	Dr. Tharamani C. Nagaiah	IIT Ropar
48	2023-0635	AN INVESTIGATION INTO THE FEASIBILITY OF USING NANOFABRICATED PROTEIN DEVICES AS SOLID-STATE ELECTRONIC GAS SENSOR	Dr. Jerry Alfred Fereiro	IISER Thiruvananthapuram
49	2023-0651	Design strategy for ideal thermally activated delayed fluorescence emitters for efficient and stable OLEDs	Dr. P Rajamalli	IISc Bangalore
50	2023-0657	Biochemical and mechanistic characterization of gougertin biosynthesis: A promising dipeptidyl-nucleoside antibiotic with potential therapeutic applications	Dr. NILKAMAL MAHANTA	IIT Dharwad

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

S.No	Proposal ID	Proposal Title	Principal Investigator	Institution
51	2023-0666	Carbene-Phosphinidenides as Stabilizing Ligands for the Isolation of Mixed-Valence Transition Metal Clusters and their Applications in Catalysis and Light Emitting Materials	Dr. SUDIPTA ROY	IISER Tirupati
52	2023-0671	Exploiting the Frustrated Lewis Pair and Frustrated Brønsted Pair Catalysis for Metal Free Hydrogenation And Sustainable Hydrogen (Dehydrogenation) Release from Liquid Organic Hydrogen Carriers (LOHCs) and Towards Metal-free Silylation and C-F Bond Activation	Dr. Pavan K. Kancharla	IIT Guwahati
53	2023-0682	Fluorescence as Well as Smart Phone Assisted RGB Sensing of Histamine in Commercial Fishes using highly Conjugated Tetrapodal-Metal Fluorescent Probes-A Tool to Measure Food Freshness	Dr. Jaspreet Kaur Rajput	NIT Jalandhar
54	2023-0685	Mechanochemical Approach for Solvent-Free Synthesis of (Hetero)Aromatic Fluorides	Dr. Gandeepan P	IIT Tirupati
55	2023-0689	Catalytic methods for the recycling commercial polyolefins using HAT-based processes	Prof. Sayam Sen Gupta	IISER Kolkata
56	2023-0727	Membrane-bound, motile hydrogel-based dredgers for microplastic capture and remediation	Prof. Pavan Kumar B.V.V.S.	IIT Roorkee
57	2023-0738	High Entropy Cathode Materials for Higher Energy Density Na-ion Batteries	Prof. Sagar Mitra	IIT Bombay
58	2023-0752	Peptide Nanotubes based Micro-Nanomotors for Advanced Functions via Complex Navigational Behavior	Dr. Dibyendu Das	IISER Kolkata
59	2023-0753	Total Syntheses of Antiviral Natural Products Isolated from Marine Sources: Dimeric Indolosesquiterpene Alkaloids Showcasing Rare N-N and C-N Atropisomerism	Prof. ALAKESH BISAI	IISER Kolkata
60	2023-0770	Exploring the Mechanistic and Device Aspects of Spine Doped Aryl Diimides for Thermally Activated Delayed Fluorescence	Prof. Mahesh Hariharan	IISER Thiruvananthapuram

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

S.No	Proposal ID	Proposal Title	Principal Investigator	Institution
61	2023-0828	Copper-Catalyzed Asymmetric Conjugate Addition Reactions of Fluorinated Pronucleophiles	Dr. Alagiri Kaliyamoorthy	IISER Thiruvananthapuram
62	2023-0829	Dispersion Controlled in Silico Catalyst Design for the Chemical Hydrogen Battery	Dr. Rositha Kuniyil	IIT Palakkad
63	2023-0874	Ligand-Enabled Regioselective Cyclotrimerization of Alkynes Through Ion-Pairing and Other Weak Interactions	Dr. Ganesh Venkataraman	IIT Kharagpur
64	2023-0892	Design, Synthesis and Computational Analysis of Supramolecular Halogen Bonded Bent-core Azo-benzene Liquid Crystalline Systems for Photo-Responsive Property Study	Dr. Susanta Kumar Nayak	VNIT Nagpur
65	2023-0908	Cyclopropenium-based chiral organo-superbases and their conjugate acids for enantioselective transformations	Prof. Ramasamy Vijaya Anand	IISER Mohali
66	2023-0920	Targeted Delivery of Synthetically Modified Stable Third Generation Tubulysin Inhibitors for Cancer Therapy	Prof. Venkatesh Chelvam	IIT Indore
67	2023-0928	Investigation of Novel Therapeutic Compounds for Inhibitors of the Protein Kinase Family to Treat Cancer: Synthesis and Evaluation of Biological Activity	Dr. CHANDI CHARAN MALAKAR	NIT Manipur
68	2023-0982	[Fe]-Hydrogenase-Inspired Artificial Hydrogen Economy	Prof. Joyanta Choudhury	IISER Bhopal
69	2023-0992	Development of Enzymatic Cascade Process to Access Chiral Drug (S)-Duloxetine via Enantioselective Cross-Aldol Reaction	Dr. T. Saravanan	University of Hyderabad
70	2023-0999	Organomercurials are More Neurotoxic than the Inorganic Mercury Compounds: A Detailed Investigation at Molecular and Cellular Levels to Understand the Mechanisms Underlying Extremely High Neurotoxicity of Organomercurials	Dr. Gouriprasanna Roy	IIT Tirupati

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

S.No	Proposal ID	Proposal Title	Principal Investigator	Institution
71	2023-1003	Redox-Switchable Catalysis Stabilizing by First-Row (3d) Transition Metal Complexes for Reversible Hydrogen Storage and Synthesis of Fine Chemicals	Mr. Debasis Banerjee	IIT Roorkee
72	2023-1009	Label-Free SERS multiplex detection and relative quantification of creatinine and uric acid	Prof. Yoosaf Karuvath	Cochin University of Science and Technology, Cochin, Kerala
73	2023-1017	Exploring Cooperatively Assisted and Conformationally Constrained Bifunctional Organocatalysts for Enantioselective Mannich and Michael Addition Reactions	Dr. S. Easwar	Central University of Rajasthan
74	2023-1026	Phosphino Silyl Ligands Supported Metal Complexes; Design, Synthesis and Applications in Catalytic CO <sub>2</sub> Reduction and Functionalization Reactions	Dr. Adinarayana Doddi	IISER Berhampur
75	2023-1035	Photo and Electro Catalytic Approaches Towards Carbon Heteroatom Bond generations	Dr. Debayan Sarkar	IIT Indore