

GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
**RAJYA SABHA**  
**UNSTARRED QUESTION No. 1402**  
ANSWERED ON 31/07/2025

**STARTUP RESEARCH GRANT GIVEN TO RESEARCHERS UNDER SERB**

1402 # DR. BHIM SINGH:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

- (a) the number of researchers that have been provided startup research grant or core research grant under Science and Engineering Research Board (SERB) in the State of Bihar so far;
- (b) the details of the approved projects alongwith the subjects thereof; and
- (c) the details of the researchers benefited, institutions, projects and approved amount of grant under the said schemes and the current status of their implementation?

**ANSWER**

MINISTER OF STATE (INDEPENDENT CHARGE) FOR THE  
MINISTRY OF SCIENCE AND TECHNOLOGY & EARTH SCIENCES  
(DR. JITENDRA SINGH)

(a) to (c): ANRF (erstwhile SERB) does not have any state specific programs, rather all the programs are announced nationally on the basis of open call. However, ANRF supported around 96 projects in state of Bihar during last five years and current FY under Core Research Grant (CRG) and Start-up research Grant (SRG) schemes. The detailed list is enclosed as Annexure- A.

**Annexure A**

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
<b><u>Scheme Name: Core Research Grant</u></b>				
1.	Dr. Om Prakash, Indian Institute Of Technology, Patna, Patna	Skew cyclic codes over extension of $Z_{\{4\}}$ and their applications in quantum and DNA computing	2073720	Completed
2.	Dr. Puneet Mishra, Central University Of South Bihar, Gaya	Investigating molecule-ferromagnet interfaces with atomic resolution for applications in spin-OLED	4371400	Completed
3.	Dr. Hosiyar Singh Mund, Jai Prakash University, Saran	Development of doped nanochromites for enhancement of magnetodielectric properties	836000	Completed
4.	Dr. Mohammad Ansar, Bihar Agricultural University, Bhagalpur	Host-shift analysis of mono and bipartite begomoviruses in economically important crops	4037880	Completed
5.	Dr. Akhilendra Singh, Indian Institute Of Technology, Patna, Patna	Influence of hydrogen on fatigue and fracture performance of ferritic-martensitic steel (P91) both at room and elevated temperature	3641000	Completed
6.	Dr. Anup Kumar Keshri, Indian Institute Of Technology, Patna, Patna	Graphene Based Membrane for Water Desalination with Improved Properties	2972629	Completed
7.	Dr. Anirban Chowdhury, Indian Institute Of Technology, Patna, Patna	Development of Optically Transparent and Translucent Zirconia Ceramic Products for Advanced Technological Applications	5701537	Completed
8.	Dr. Ram Pratap Singh, Central University Of South Bihar, Gaya	Identify drivers of cooperative breeding in Yellow billed-babbler ( <i>Turdoides affinis</i> ) using molecular and physiological tools	4742920	Completed
9.	Dr. Rakesh Kumar Pandey, Mahatma Gandhi Central University, Purbi Champaran	Contact charged surfaces for driving useful surface chemical reactions	3958812	Completed
10.	Dr. Rajib Jha, Indian Institute Of Technology, Patna	Leaf Disease Detection & Severity Estimation using Deep Learning based Image processing Method	2151946	Completed

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
11.	Dr. Rajeev Nayan Bahuguna, Dr. Rajendra Prasad Central Agricultural University	Investigating role of phenotypic plasticity in heat and drought combination stress tolerance in rice ( <i>Oryza sativa</i> L.)	4385282	Completed
12.	Prof. Md.Lokman Hakim Choudhury, Indian Institute Of Technology, Patna	Design and Development of Visible Light-Driven Multicomponent Reactions using Organophotocatalysis	4528832	Completed
13.	Dr. Rajesh Kumar Ranjan, Central University Of South Bihar	Nutrients and organic carbon dynamics in the sedimentary profile of Ghora Katora Lake (Eco Sensitive Zone), Rajgir, Bihar India	3947120	Completed
14.	Dr. Kongrailatpam Milankumar Sharma, Central University Of South Bihar	Palaeontological and Geochemical (stable isotopic $\delta^{18}\text{O}$ , $\delta^{13}\text{C}$ , trace and REEs) proxies for paleobiogeographic, paleoclimatic and paleoenvironmental reconstruction of vertebrate fauna from the Neogene deposits of Kathiawar and Pira Island, Gujarat, India	3757120	Completed
15.	Dr. Saurabh Kumar Pandey, Indian Institute Of Technology, Patna	Design and Development of Memristor for Neuromorphic Application: A combined Theoretical and Experimental study	2171400	Completed
16.	Dr. Manpuran Mahto, National Institute Of Technology, Patna	Design, Fabrication and Measurement of X-band Metamaterial based Slow Wave Structure for High Power Microwave Applications	2481377	Completed
17.	Prof. Jawar Singh, Indian Institute Of Technology, Patna	Design and Development of Silicon Artificial Neuron and Synapse for Brain-Inspired Computing Architectures	3341800	Completed
18.	Prof. Naveen Kumar Nishchal, Indian Institute Of Technology, Patna	Design and Development of an Opto-electronic Asymmetric Cryptosystem	3322242	Completed

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
19.	Dr. Tamoghna Chakrabarti, Indian Institute Of Technology, Patna	Liquid Phase Flash sintering of Yttria Stabilized Zirconia Ceramics	4741264	Completed
20.	Dr. Amit Kumar Verma, Indian Institute Of Technology, Patna	Development of Laboratory Scale Bio-Grout Technology for Landslide Mitigation	3295380	Completed
21.	Prof. Manabendra Pathak, Indian Institute Of Technology, Patna	Porous membrane based vapour venting technique for performance improvement in microchannel heat sink	3283096	Completed
22.	Dr. Jose Varghese Parambil, Indian Institute Of Technology, Patna	Determination of Nucleation and Growth Kinetics of Cocrystals in Solution Cocrystallization	4594832	Ongoing
23.	Dr. Venkata Ramanaiah Dantham, Indian Institute Of Technology, Patna	Label-free detection and characterization of single protein molecules using bimetallic-photonic hybrid devices	4319905	Completed
24.	Prof. Pradhan Parth Sarthi, Central University Of South Bihar	Observational study of the Urban Climate over the Gangetic plain of India	2600120	Ongoing
25.	Dr. Ayan Mukherjee, College Of Commerce, Arts And Science	Development of porous $\text{Co}_3\text{O}_4$ / $\text{NiCo}_2\text{O}_4$ nanostructured thin film for high performance supercapacitor electrode	3514740	Ongoing
26.	Dr. Syed.Khaja Karimullah Hussaini, Indian Institute Of Technology, Patna	Assessing the suitability of steel slag and rubber-coated aggregate as ballast to enhance track longevity.	2600378	Ongoing
27.	Dr. Ajay D Thakur, Indian Institute Of Technology, Patna	Developing inorganic-organic hybrid thin-film architectures as artificial neurons for non-von Neumann architecture	3197832	Ongoing

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
28.	Dr. Manoranjan Kar, Indian Institute Of Technology, Patna	DEVELOPMENT OF GEOMETRICAL COMPATIBILITY ACROSS THE MAGNETO- STRUCTURAL TRANSITION FOR GIANT REVERSIBLE MAGNETOCALORIC EFFECT IN Mn-Ni-Si ALLOY	4099832	Ongoing
29.	Dr. Vijay Raj Singh, Central University Of South Bihar	Advance Spectroscopic Studies of Vanadates to Understand its Electronic Structure and Conductivity Transitions	4638832	Ongoing
30.	Dr. Manas Kumar Sarangi, Indian Institute Of Technology, Patna	Regulated Energy Transfer in Perovskites Nanocrystals for Efficient Optoelectronic Applications	4012096	Ongoing
31.	Dr. Pradipta Chakraborty, Indian Institute Of Technology, Patna	Microzonation of Patna City for better preparation during Future Earthquakes	2801660	Ongoing
32.	Dr. Raju Halder, Indian Institute Of Technology, Patna	LIFTchain: Development of Language-Independent Formal Method Toolchain for Efficient and Verified Blockchain Smart Contracts	3286021	Ongoing
33.	Dr. Yatendra Kumar Singh, Indian Institute Of Technology, Patna	Ultra low Jitter, Low Spur and Low power Frequency Synthesizers for High Speed Data Converters, Wi-Fi 7, 5G and beyond Communication Systems	3568400	Ongoing
34.	Dr. Ranjan Kumar Behera, Indian Institute Of Technology, Patna	Performance Analysis of AC- AC Converter fed Induction Motor Drive Under Voltage Sag and Unbalanced Grid	3098832	Ongoing
35.	Dr. Suman Kumar Maji, Indian Institute Of Technology, Patna	Development of an Intelligent Visual Query Response Solution for Remote Sensing	2667981	Ongoing

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
36.	Dr. Jobin Jose, Indian Institute Of Technology, Patna	Scattering of electron and positron by bare and engineered atoms: A benchmarking study of effects of relativity, correlation, and confinement	2044948	Ongoing
37.	Dr. Raghavan Kollengode Easwaran, Indian Institute Of Technology, Patna	Theoretical study on encapsulated Rb atom inside a C-60 cage for Quantum Technology application using Electromagnetically Induced Transparency Protocol	2559942	Ongoing
38.	Dr. Dinesh Kumar Kotnees, Indian Institute Of Technology, Patna	Realizing the enhancement of interfacial interaction in rubber latex / bacterial cellulose nanocomposites via covalent conjugation for superior properties-A scientific approach for scalability and commercialization	4254867	Ongoing
39.	Dr. DEEPU P, Indian Institute Of Technology, Patna	Interfacial instability of a liquid layer flowing down on an inclined non-uniformly heated wavy substrate	2771780	Ongoing
40.	Dr. Probir Saha, Indian Institute Of Technology, Patna	Establishing a synchronous micro-EDG process using a pencil-shaped micro-PCD tool on SiC wafers	2548832	Ongoing
41.	Dr. Anirban Mahato, Indian Institute Of Technology, Patna	A novel route of surface texturing by machining based technique for tribological application	4044832	Ongoing
42.	Dr. Mahender Khatravath, Central University Of South Bihar	Design and Synthesis of Biologically Privileged Scaffolds Related to Natural Products, Peptidomimetics and $\beta$ -Lactam Antibiotic Mimics via Intramolecular Asymmetric "Hydroxyl-Directed Nitrile Oxide" Cycloaddition Reactions.	3747832	Ongoing

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
43.	Dr. Abhishek Kumar Sharma, Bihar National College (Constituent College Of Patna University)	Study of double diffusive convection-reaction flow in a vertical channel filled with porous medium.	2150463	Ongoing
44.	Dr. UTPAL ROY, Indian Institute Of Technology, Patna	Realistic Exact Model for Quantum Logic Gates and Quantum Computation using Bose Einstein Condensates.	2515942	Ongoing
45.	Dr. Somnath Sarangi, Indian Institute Of Technology, Patna	Micromechanics based model of polymeric electro-magneto active material	1778832	Ongoing
46.	Dr. Tushar Ranjan, Bihar Agricultural University	Elucidating the mechanism of genome packaging and translocation in type I plant viruses	4836832	Ongoing
47.	Dr. Rajendra N. Paramanik, Indian Institute Of Technology, Patna	"Signal Jamming and Central Bank Communication: Do Experts Mislead the Market"	1444872	Completed
48.	Dr. Sandip Khan, Indian Institute Of Technology, Patna	Coalescence dynamics of aqueous droplet at nanoscale: Insight from molecular simulation	4359696	Ongoing
49.	Dr. Anoop Kumar Gupta, Indian Institute Of Technology, Patna	Development of an optimized and efficient lithium-ion battery thermal management system for electric vehicles utilizing phase change material and metal foam composites	4084696	Ongoing
50.	Dr. Nitin Dutt Chaturvedi, Indian Institute Of Technology, Patna	Development of data driven robust optimization for process system engineering	2688368	Ongoing
51.	Dr. Sushant Kumar, Indian Institute Of Technology, Patna	Design and Development of Novel Thermocatalysts for Selective CO <sub>2</sub> Hydrogenation to Ethanol	2874058	Ongoing
52.	Dr. Dinesh Dash, National Institute Of Technology, Patna	Sustainable Data gathering and charging in Rechargeable Wireless Sensor Networks using Mobile Sink	2122714	Ongoing
53.	Dr. Prashant , Central University Of South Bihar	Development and demonstration of Nature based hybrid constructed wetlands for faecal sludge treatment: a decentralized and sustainable sanitation alternative	3329120	Ongoing

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
54.	Dr. Debajit Sarma, Indian Institute Of Technology, Patna	Coordination Driven Soft Supramolecular Metallogel Functionalized with Active Metal Ions/Cluster for Efficient Heterogeneous Catalysis	3758832	Ongoing
55.	Dr. Nitish Kumar, Central University Of South Bihar	Development of in vitro regeneration protocol for genetic improvement of Makhana (Euryale ferox Salisbury): A Neglected and Underutilized Food Crop	4098350	Ongoing
56.	Dr. Shailesh Mani Pandey, National Institute Of Technology, Patna	An investigation on Activated-TIG dissimilar welded joint of creep strength enhanced ferritic/martensitic P91 steel and Inconel 617 superalloy for Advanced Ultra-Supercritical (A-USC) power plant application	3773000	Ongoing
57.	Dr. Amit Kumar, Indian Institute Of Technology, Patna	Application of Glycosylimidates in the synthesis of glycomimetic molecules under visible light conditions	5643283	Ongoing
58.	Dr. Tammineni Rajagopala Rao, Indian Institute Of Technology, Patna	Nonadiabatic Quantum Reaction Dynamics of Nitrogen Exchange Reaction	4253832	Ongoing
59.	Dr. Priti Mishra, Patna University	Constraining Cosmological Models with Redshift-Drift	517000	Ongoing
60.	Dr. Nutan Kumar Tomar, Indian Institute Of Technology, Patna	State estimation for control systems governed by DAEs	3041295	Ongoing
61.	Dr. Mohd. Kaleem Khan, Indian Institute Of Technology, Patna	Design and Development of Robust and Effective Battery Thermal Management Systems (BTMS) for Electric Vehicles (EVs)	6336000	Ongoing
62.	Dr. SANDAN KUMAR SHARMA, Indian Institute Of Technology, Patna	Design and Development of High-strength Wear-resistant Aluminium-based Hybrid Composites for Airframe Wings	3820696	Ongoing



S No.	PI Name & Institute Details	Title	Total Cost	Current Status
63.	Dr. Arghya Choudhury, Indian Institute Of Technology, Patna	Systemic probes of hitherto unexplored supersymmetric parameter space.	4448592	Ongoing
64.	Dr. PRIYANKA SHARMA, Patna University	Role of Arsenic resistant bacteria in detoxifying arsenic in edible plants of Bihar.	3314212	Ongoing
<b><u>Scheme Name- Start-up Research Grant</u></b>				
65.	Dr. Gajendra Kumar Azad, Patna University, Patna	To understand the physiological significance of histone H3 clipping in budding yeast <i>Saccharomyces</i> <i>cerevisiae</i> .	3097975	Completed
66.	Dr. Anil Kumar Sharma, National Institute Of Technology, Patna, Patna	Application of microbial induced calcite precipitation (MICP) in stabilizing coal ash	1970443	Completed
67.	Dr. Sudhir Varma, Indian Institute Of Technology, Patna, Patna	PERFORMANCE BASED BITUMINOUS MIX AND ROAD DESIGN	2837920	Completed
68.	Dr. Sourav Gur, Indian Institute Of Technology, Patna, Patna	Robust and Reliability Based Design Optimization and Performance Assessment of Superelastic Shape Memory Alloy (SMA) Damper for Seismic Vibration Control of Structures	1672490	Completed
69.	Dr. Abhik Sen, Rajendra Memorial Research Institute Of Medical Sciences, Patna	Transcriptome analysis of blood cells and skin biopsies from healthy control, VL and PKDL cases to identify PKDL specific biomarker and disease mechanism.	2883481	Completed
70.	Dr. Abhishek Raj, Indian Institute Of Technology, Patna, Patna	Interaction of Vesicles with deformable boundary: mimicking cell-wall interaction in cardiovascular diseases	2998500	Completed
71.	Dr. Yogesh Kumar, National Institute Of Technology, Patna, Patna	Development of Robot-based Incremental Sheet Hydro- Forming Machine	2139733	Completed

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
72.	Dr. Anilkumar Bachu, Indian Institute Of Technology, Patna, Patna	Analysis and Modelling of Driver Behavior using Naturalistic Driving Data under Indian Traffic Conditions	2842400	Completed
73.	Dr. AMIT KUMAR SINGH, Indian Institute Of Technology, Patna, Patna	Massive MIMO High Gain Beam Scanning Millimeter-Wave Antenna Using Digital Metasurface With Controlled Bits for Fifth Generation (5G) Communication	3204340	Completed
74.	Dr. UDIT SATIJA, Indian Institute Of Technology, Patna, Patna	Design and Implementation of Specific Emitter Identification System for Detecting Malicious UAVs/Drones and Transmitters.	2891370	Completed
75.	Dr. Amitesh Kumar, National Institute Of Technology, Patna, Patna	Bio-inspired Electronic Synaptic Cells for Neuromorphic and Bio-medical applications	2943600	Completed
76.	Dr. SENTHILKUMAR M, National Institute Of Technology, Patna, Patna	Design and development of indigenous low-cost phasor measurement unit	3217500	Completed
77.	Dr. Dheeraj Kumar Sinha, Indian Institute Of Information Technology Bhagalpur, Bhagalpur	Development of ESD Protection Circuits/Devices for High Speed I/O Drivers and RFICs	2492900	Completed
78.	Dr. Pankaj Kumar, Indira Gandhi Institute Of Medical Sciences, Patna	Ultrastructural analysis in endothelial cell of retinal blood vessel in diabetic rats after quercetin treatment	2830240	Completed
79.	Dr. Jitendra Bahadur Maurya, National Institute Of Technology, Patna, Patna	Bismuthene coated fiber optic plasmonic biosensor for the detection of human pathogens	2418111	Completed
80.	Dr. Ajay Kumar Kalyani, Indian Institute Of Technology, Patna, Patna	Electric field and temperature dependent structural and microstructural study in ferroelectric HfO <sub>2</sub> - ZrO <sub>2</sub> thin films	3304660	Completed
81.	Dr. Chetan Kumar Hirwani, National Institute Of Technology, Patna, Patna	Experimental Improved Dynamic Behaviour Analysis of Shape Memory Polymer Composite for Space Application	2350930	Completed

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
82.	Dr. Saurabh Kumar, Icar Research Complex For Eastern Region, Patna, Patna	Rhizosphere microbiome of high yielding rice cultivars in arsenic contaminated Indo-Gangetic Plains and their application for arsenic amelioration in rice grains.	3047401	Completed
83.	Dr. EKTA VERMA, Magadh University, Gaya	Phylogenetic analysis of cyanobacterial population from hypersaline mangrove regions of Gujarat and their bioprospection for anticancer compounds	3061820	Completed
84.	Dr. ATANU K METYA, Indian Institute Of Technology, Patna, Patna	Enhanced the Gas Hydrate Formation by Antifreeze Molecules: Applications in Gas Storage and Energy Recovery	3072860	Completed
85.	Dr. Chandranath Adak, Indian Institute Of Technology, Patna, Patna	Deep Inspection on Intra-Variable Handwriting of Multilingual Scripts for Strengthening Behavioral Biometrics	1749250	Completed
86.	Dr. Abhishek Sahu, National Institute Of Pharmaceutical Education And Research, Hajipur, Vaishali	Development of Enzyme-mimicking Polymeric Nanomaterials for Biomedical Applications	2930520	Completed
87.	Dr. Naveen Kumar Singh, Central University Of South Bihar, Gaya	Identification of heat stress responsive genes and their signaling pathways in Camelina sativa seedlings using whole genome transcriptome analysis	2929399	Completed
88.	Dr. Vipin Kumar Parihar, National Institute Of Pharmaceutical Education And Research, Hajipur, Vaishali	Endocannabinoids for cognitive aging and neurodegeneration	2282520	Completed
89.	Dr. Satyajit Mondal, National Institute Of Technology, Patna, Patna	Development of Driving Cycle and Vehicle Emission Level for Mid-sized Cities under adverse Traffic and Environment conditions	2476000	Ongoing

S No.	PI Name & Institute Details	Title	Total Cost	Current Status
90.	Dr. Suraj Suman, Indian Institute Of Technology, Patna, Patna	Design of Intelligent Tactile Internet System for Post 5G Era	2852870	Ongoing
91.	Dr. Satendra Kumar, Indian Institute Of Technology, Patna, Patna	Development and Prototype Implementation of Energy-Efficient Cooperative Content Delivery for Beyond 5G Networks	1593370	Ongoing
92.	Dr. Chandra Shekhar Prajapati, Indian Institute Of Technology, Patna, Patna	Colloidal lithography assisted nanostructures fabrication of Metal-oxides to develop gas sensors for CO, NO <sub>2</sub> , NH <sub>3</sub> , H <sub>2</sub> S & CO air pollutants	3311000	Ongoing
93.	Dr. Sunil Kumar Singh, Indian Institute Of Technology, Patna, Patna	Hygrothermal Fracture Analysis of CFRP Composites for Aerospace Applications	2489870	Ongoing
94.	Dr. Md Qaisar Raza, National Institute Of Technology, Patna, Patna	Investigation of capillary-fed boiling in porous wick with ionic liquids and surfactants	3157530	Ongoing
95.	Dr. Ashwani Assam, Indian Institute Of Technology, Patna, Patna	Advancing Hypersonic Heating Computation with Accurate and Shock-Stable Numerical Approach	2684000	Ongoing
96.	Dr. Anupam Jana, National Institute Of Pharmaceutical Education And Research, Hajipur, Vaishali	Enantioselective total synthesis and evaluation of anti-cancer activity of Panduratinins A-F and its analogues	2822600	Ongoing

\*\*\*\*\*