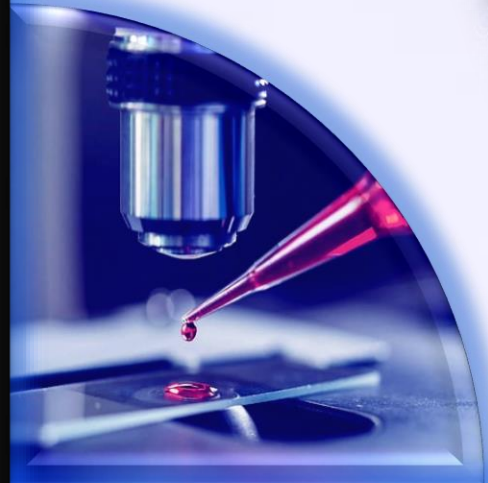
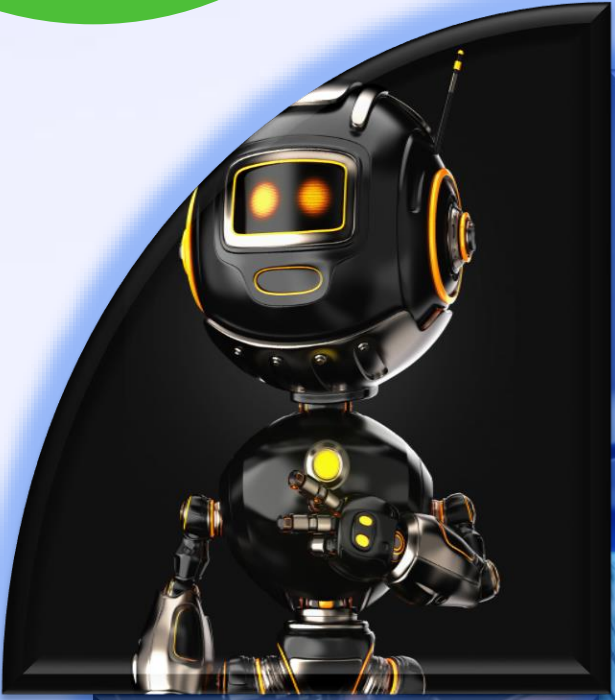




**RESEARCH AND  
CONSULTANCY  
ANNUAL REPORT  
2024**



# Message



“I am happy to see the enthusiasm and dedication of our faculty fraternity in advancing the research and consultancy activities of our institute. We have secured several high-value and multidisciplinary projects this year. We have witnessed a significant increase in proposal submissions to various funding agencies, and with such drive, I am optimistic about the successful outcome. On this occasion, I wish everyone a successful year ahead. ”

**- Prof. Prasad Krishna  
Director, NITC**



# RESEARCH ADVISORY BOARD



**Prof. Prasad Krishna**  
Director  
NIT Calicut (Chairman)



**Prof. B.L.V. Prasad**  
Director  
Centre for Nano and Soft Matter  
Sciences (CeNS), Bangalore



**Prof. Madhavi Latha G.**  
Professor,  
Department of Civil Engineering  
IISC Bangalore



**Prof. Sukumar Mishra**  
Director, IIT(ISM) Dhanbad  
Professor, Department of Electrical  
Engineering, IIT Delhi



**Prof. Suman Chakravorty**  
Professor  
Department of Mechanical Engineering  
IIT Kharagpur



**Prof. Rohit Srivastava**  
Himanshu Patel Chair Professor  
Department of Biosciences and Bioengineering  
IIT Bombay



**Prof. N. Sandhyarani**  
Dean Research and Consultancy  
NIT Calicut



# RESEARCH AND CONSULTANCY

“This year has witnessed an active involvement of the faculty members in advancing the research and development activities of the institute. Several project proposals have been developed and submitted to funding agencies under various national missions through a number of brainstorming sessions. These collaborative efforts have already resulted in some projects securing funding support; others are under evaluation. We are proud to see our faculty members' commitment in enhancing the visibility and impact of the R&D endeavors of the institute.”

– Dean (R&C)

**Dr. N. Sandhyarani, Dean (R&C)**

**Dr. Subramanyan N V, Assoc. Dean (R&C)**

**Dr. Anuj A. Vargeese, Assoc. Dean (R&C)**

**Mr. Ananda Kumar K G, Deputy Registrar (R&C)**

**Mr. Dhanjith M R, Superintendent (SG-II)**

**Mr. Shafi S M, Senior Superintendent**

**Mr. Aditya Kumar Singh, Superintendent**

**Mrs. Harsha Bhaskaran, Senior Assistant**

**Mr. Abhijith Pappan, Junior Assistant**

**Mr. Bongu Sai Teja, Junior Assistant**

**Mr. Manikandan, Junior Assistant**

**Mr. Vinod P, OA (SGII)**

**Ms. Anju Karun P K, Project Assistant**

**Mr. Mohammed Ashique P K, Project Assistant**

# 2024 IN A GLIMPSE



**209** Running Sponsored projects

**456** Proposals submitted

**44** New projects sanctioned

**6** Completed projects

**26.6 Cr.** Sanctioned amount

**2** FIST

6G- TTDF  
₹ 4.36 Cr

Ministry of Jal  
Shakti - Periyar  
River basin  
management  
₹ 3.45 Cr

**98** Running FRG projects

MED – 3.27 Cr (Level C)

CSED – 0.95 Cr (Level B)

Multi -  
Disciplinary  
Projects

AI-CoE For  
Sustainable Cities-  
As consortium  
Partner  
(₹ 300 Cr)

**22** New FRG projects sanctioned

**44** FRG projects in process

**1.63 Cr.** Test & Consultancy

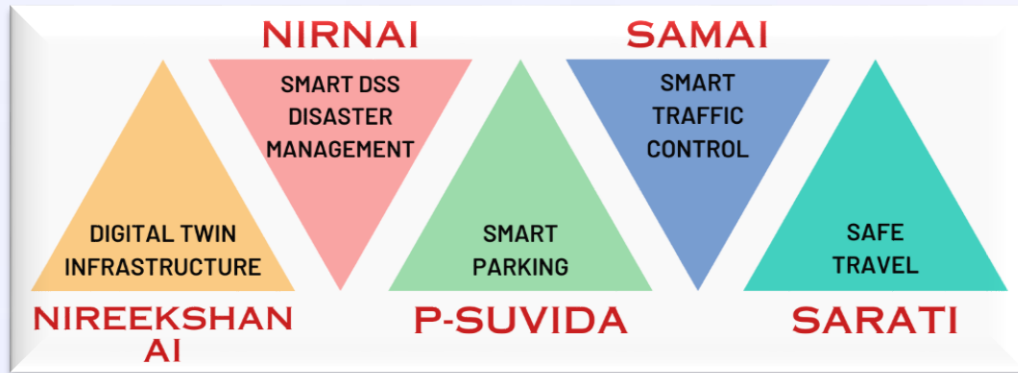


# AI – CoE: SAMUDRA and NIREEKSHAN



## Sustainable Applications for Mobility, Urban Development and Resilience using Artificial intelligence - SAMUDRA

- ✓ A consortium led by the NITC was selected for setting up the Centre of Excellence in Artificial Intelligence based sustainable cities with a budget of **2 Crores**.
- ✓ NIT Calicut is the only NIT selected as a lead institute for this purpose by the Ministry of Education, Govt. of India.
- ✓ A team of 14 faculty members from four departments, CSED, DAP, CE, and DMS, are involved in developing Proof-of-Concept (PoC).
- ✓ The project is coordinated by Dr. S.D Madhu Kumar, and Dr. Harikrishna M.

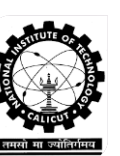


### Phase II- NIREEKSHAN

- ✓ MoE has established AI-CoE for Sustainable Cities as a consortium with IIT Kanpur as the Lead Institute
- ✓ NIT Calicut is a part of the consortium for the project 'Digital Twin for Infrastructure (including Physical sensors)'.  
Dr. Prateek Negi is the team lead on this theme



# Condition Assessment & Management Plan (CAMP)- Periyar River Basin



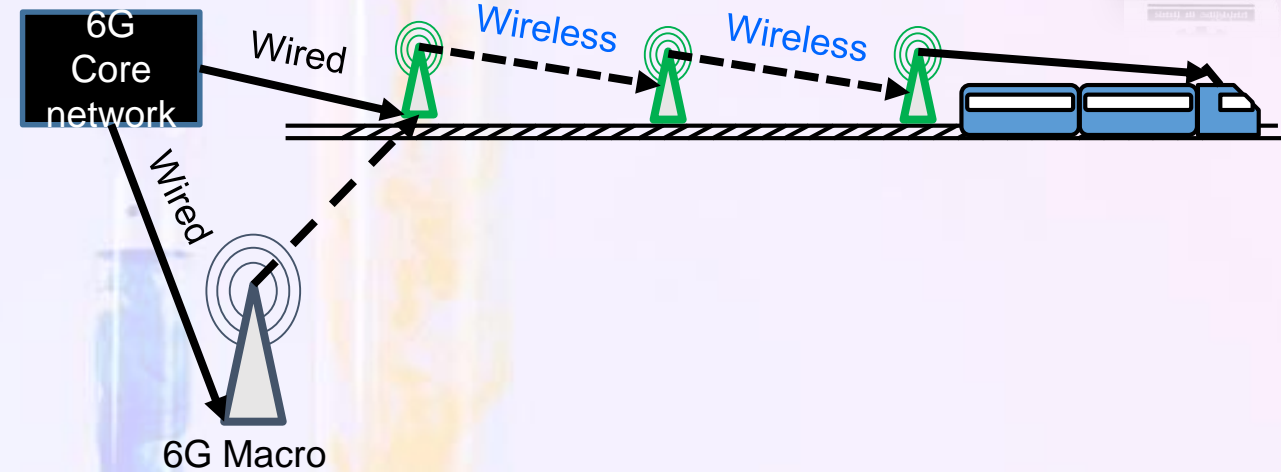
- ✓ The Govt. of India has decided to undertake studies on the Condition Assessment & Management Plan (CAMP) for six major rivers in the country, namely, the Mahanadi, Narmada, Godavari, Krishna, Cauvery, and Periyar.
- ✓ NIT Calicut along with IIT Palakkad has been selected for establishment of Centres for the Periyar River in Kerala. The Memorandum of Agreement for this purpose was signed by Prof. Prasad Krishna, Director, NIT Calicut, on 28<sup>th</sup> February 2024 at New Delhi
- ✓ Dr. Santosh G Thampi is the lead PI from NITC.
- ✓ Budget: 3.45 Cr
- ✓ The mandate of the project is to collate and gather data for the preparation of dynamically evolving river basin management plans, thereby enabling the preparation of plans of action for different projects to be taken up in these river basins at different levels of priority and policy interventions.





## 6G for Future Railway Mobile Communication System: Upper layers enhancements

- ✓ 6G proposal titled “6G for Future Railway Mobile Communication System: Upper layers enhancements” (Proposal ID: TTDF/6G/320) has been selected for support under the TTDF Scheme.
- ✓ The project will be implemented through TCOE India, and is approved for a duration of 3 years, with TTDF funding of **Rs. 4.36 Cr.**



**Industry partner: Lekha Wireless, Bengaluru**



**Dr. Vinay Joseph**, Asst. Professor; **Dr. Nujoom Sageer Karat**, Asst. Professor; **Dr. Debjani Goswami**, Asst. Professor; **Dr. Akhil P. T.**, Asst. Professor; **Dr. Srinivasarao C.**, Asst. Professor; **Dr. Rakesh R. T.**, Asst. Professor; **Dr. Deepthi P. P**, Professor; **Dr. Sameer S. M**, Professor

*(All are from Department of Electronics & Communication Engineering)*





## Fund for Improvement of S&T Infrastructure (FIST)



- ❖ Department of Mechanical Engineering has been recommended in Level C category for the FIST support with a budget of 3.27 Crores for 5 years' duration

### Team from Department of Mechanical Engineering



**Head of the Department: Dr. M. L. Joy, Professor**

**Chief Co-ordinator: Dr. Sujith Kumar C. S (Asst. Professor)**

**Co-ordinators: Dr. Basil Kuriachen (Asst. Professor), Dr. Mohammed Rashad K (Asst. Professor), Dr. Sangeeth K. (Asst. Professor), Dr. Amit Kumar Singh (Assoc. Professor), Dr. Anoop K P (Asst. Professor).**

- ❖ Department of Computer Science and Engineering has been recommended in Level B category for the FIST support with a budget of 95 Lakhs for 5 years' duration

### Team from Department of Computer Science and Engineering



**Head of the Department: : Dr. Subashini R, Professor**

**PI's: Dr. Pournami P N (Assoc. Professor), Dr. A Sudarshan Chakravarthy (Asst. Professor), Dr. Pranesh Das (Asst. Professor), Dr. Santosh Kumar Behera (Asst. Professor).**

**Co-PI's: Dr. Abdul Nazeer K. A (Professor), Dr. Prabu Mohandas (Assoc. Professor), Dr. Joe Cheri Ross (Asst. Professor), Dr. Vidhya Kamakshi (Asst. Professor).**

# ORGANISED EVENTS IN 2024...

## RAB Meeting & Department Visit – 29<sup>th</sup> January

- ✓ In the first interaction session, the Director and Dean (R&C) presented the research achievements, facilities created and the measures taken to enhance the research ecosystem in NITC.
- ✓ The Head of the Departments presented the research profile of the respective departments, and the RAB members gave constructive suggestions to improve the profile.
- ✓ In the afternoon session, the RAB members visited the research stalls arranged by the departments.
- ✓ All the departments actively participated in this event by showcasing their achievements through posters, demonstration of the prototypes/products developed, etc.
- ✓ The RAB members were impressed with the active involvement and enthusiasm of the faculty members and students.





# ORGANISED EVENTS IN 2024...



## Faculty interaction with RAB members– 30<sup>th</sup> January

- ✓ A faculty interactive session with **Dr. B. L. V. Prasad, Director, Centre for Nano and Soft Matter Sciences (CeNS), Bangalore**, was ORGANISED in senate hall.
- ✓ Dr. B. L. V. Prasad acted as chairman/member of project advisory committees, for major funding agencies such as DST, SERB, etc.
- ✓ The topic of the session was "**Successful Grant Writing: My Perspective**".
- ✓ More than 130 faculty members actively participated in the session, and expressed the usefulness of the session through feedback.



# ORGANISED EVENTS IN 2024...

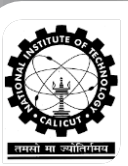
## Workshop on Quality teaching & research – 23<sup>rd</sup> August

- ✓ Organised a workshop focusing on quality teaching & research, and translational research leading to a startup, on 23<sup>rd</sup> August.
- ✓ The session was handled by external experts: Prof. Sovan Lal Das (IIT Palakkad), Prof. C. Subramaniam (IIT Bombay), and Prof. Pradeep R Nair (IIT Bombay).
- ✓ The topics covered are "Balancing Teaching and Research in early stage career", "Good Quality Research", and "From Lab to market: Challenges and Opportunities".
- ✓ About 110 faculty members participated in the session and productive discussion was followed after the talks.



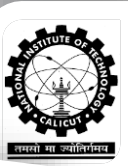
## Interactive session with New faculties on writing research proposals– 5<sup>th</sup> May

- ✓ R&C office organised an interactive session with the newly joined faculties on "How to write startup research grants"
- ✓ Different aspects of the project management, such as proposal writing, implementation after approval and closure are discussed in detail with case studies.





# ORGANISED EVENTS IN 2024...



## Faculty interaction with ISRO scientists – 21<sup>st</sup> October

- ✓ A faculty interactive session was organised to develop awareness on ISRO funding.
- ✓ The experts from ISRO: Shri G. Harikrishnan (Director, Capacity Building & Public Outreach (CBPO)) and Sri Nishanth Kumar (Deputy Director, HRDI, CBPO).
- ✓ The experts detailed about various funding opportunities, how to write proposals aligning with ISRO, details of ISRO RESPOND scheme, etc.
- ✓ Followed to the general interactions, a focused meeting was conducted with the PI's of the ongoing RESPOND projects, and visited the respective laboratories.





# ORGANISED EVENTS IN 2024...

## Meeting of newly joined faculties with Director organised by Dean (R&C) – 23<sup>rd</sup> October

- ✓ The Director addressed the faculty members, who joined from 2022, on 23<sup>rd</sup> October 2024, and emphasized the importance of securing a research grant in the early phase of the academic career, especially in the first three years of joining.
- ✓ The Director offered all possible support and advised the faculties to apply for individual centric projects (such as PMECRG) and collaborative high valued projects.



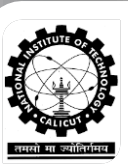
## Interactive session with Dean (R&C) regarding ANRF- PMECRG proposal – 12<sup>th</sup> November

- ✓ ANRF invited proposal for the PMECRG projects, from newly joined faculties.
- ✓ About 160 faculty members from our Institute were eligible to participate in the scheme.
- ✓ Dean R&C office conducted a detailed session on different aspects of start up projects. Several successful examples were discussed during the session.
- ✓ In addition, several face-to-face sessions with the interested faculty members were conducted.
- ✓ More than 125 faculty members submitted the proposals and Dean R&C office appreciate the efforts and wishes them success.





# ORGANISED EVENTS IN 2024...



## Interactive session with L&T R&D Heads, Jointly Organised with Dean IACR on 6<sup>th</sup> November

- ✓ An interactive session with Mr. Srinivasan S., Head of Engineering (PT&D), and Mr. A. Kalyanasundaram, Head of Power System Analysis and R&D from L&T Construction was organized with faculty members.
- ✓ Various collaborative projects were discussed in the meeting, and following that a DPR was submitted to L&T for the collaborative projects.
- ✓ As the first step, L&T identified one research problem and approached NITC to provide solution, and a team is working on that.

## Interactive session with PI's / Co-PI's of the ongoing sponsored research projects – 10<sup>th</sup> December

- ✓ R&C team organised an orientation session for the PI's and Co-PI's of the projects on various aspects of the operational procedures of externally funded projects.
- ✓ Deputy Registrar (R&C) explained the purchase procedures, GFR rules, need to follow the regulations, audit related matters, etc.
- ✓ The faculty members actively involved in the discussion.

# ORGANISED EVENTS IN 2024...

## Interactive session with Dr. Sridevi, Director, CSIR Fourth Paradigm Institute – 6<sup>th</sup> December

- ✓ An interactive session was organized with Dr Sreedevi Jade, Director of the CSIR Fourth Paradigm Institute (Formerly CSIR Centre for Mathematical Modelling and Computer Simulation) on December 6<sup>th</sup>, 2024.
- ✓ Dr. Sreedevi detailed about the various funding opportunities in the emerging areas such as cyber-physical systems, supercomputing, data science, etc.
- ✓ The faculty members actively participated in the event and interacted with Dr. Sreedevi.



## Interaction with DRDO Delegates– 13<sup>th</sup> December

- ✓ Directors of various DRDO labs and ARDB project evaluation panel members visited our institute during second week of December 2024, as a part of COPEN conference and review meeting.
- ✓ Team Dean (R&C) organized a focused meeting with the scientists for the faculty members whose research areas aligns with the area of interests of ARDB.
- ✓ More than 20 faculty members presented their research, and the scientists gave comments on how to submit competitive proposals to ARDB.



# COMPLETED AND CLOSED PROJECTS IN 2024



Principal Investigator	Funding agency/Scheme	Project details Grant No. /DOS/Date of Completion	Title of the project	Financial Details	Project Outcome Number of SCI/Scopus publications and Details of Patent granted
<b>Dr. Kumaravel S.,</b> Associate Professor, EED	NaMPET-Phase-III, MeitY, Govt. of India	Grant No. 25(12)/2019-ESDA NaMPET-III DOS: 20.2.2020 Date of Completion: 20.2.2023	GaN-based High Gain DC/DC Converter Fed Multi-Level Inverter for UPS Application	Amount received: Rs. 38.48 Lakhs Amount Utilized: Rs. 38.48 Lakhs	Number of SCI/Scopus publications: 3 Patent granted : Nil
<b>Dr. Jithin M</b> Assistant Professor, MED	National Supercomputing Mission from DST & MeitY	DST/NSM/R&D_HPC_Applicat ions/ExtensionGrant/2023/06 DOS: 01 .04.2023 Date of Completion: 30.09.2024	Lattice Boltzmann Solver for Pore- scale Transport and Electrochemistry in Lithium- Oxygen Battery	Amount received: ₹14,52,000, Amount Utilized: ₹11,28,707.64	Number of SCI/Scopus publications: 1 Patent granted: NIL
<b>Dr. Muniyandi Sankaralingam</b> Assistant professor, CHY	Inspire Faculty Award	Grant No. IFA17/CH-286 DOS: 02/08/2018 Date of Completion: 02/08/2023	Synthesis and Reactivity Studies of Rare Mononuclear High-Spin Manganese(V)-oxo (S = 1) Complexes	Amount received: 32,54,724.00 Amount Utilized: 32,54,724.00	Number of SCI/Scopus publications: 22 Patent granted, 2023, Patent No: 202341041869
<b>Dr. Chinna Ayya Swamy P</b> Assistant professor CHY	SERB; Start-up research grant (SRG)	Grant No. SRG/2021/002112 DOS: 18-12-2021 Date of Completion: 13.03.2024	Supramolecular Rigid Aromatic Multifarene Scaffolds: Selective Recognition of Environmental Pollutants and Ligands for Asymmetric Catalysis	Amount received: 25,86,000/- Amount Utilized: 15,09,312/-	Number of SCI/Scopus publications: 6 Patent granted : Nil
<b>Dr. N. Sandhyarani</b> Professor MSED	SERB/ POWER FELLOWSHIP	Grant No. SPF/2021/000008 DOS:24/03/2021, Date of Completion: 23/03/2024	Interface Engineering of Rhenium Based Nano Heterostructures for Enhanced Hydrogen Evolution Reaction	Amount received: 36,02,667/- Amount Utilized: 36,02,631/-	Number of SCI/Scopus publications: 6 Patent granted : NIL
<b>Dr. Janardhan Banothu</b> Assistant Professor CHY	DST-SERB	Grant No: EEQ/2020/000303 DOS: 14/01/2021 Date of Completion: 13/07/2024	Human Toll-Like Receptor 2- Selective Agonists: Design, Synthesis and Structure-Activity Relationship in Diverse Heterocyclic Scaffolds	Amount received: 43,25,000/- Amount Utilized: 43,24,999.50	Number of SCI/Scopus publications: 22 Patent granted :1

# LIST OF SPONSORED PROJECTS SANCTIONED IN 2024



Sl No	Principal Investigator	Department	Email ID	Name of the Project	Funding Agency	Project Amount
1	<b>Dr. Rahul Radhakrishnan,</b> Assistant Professor	EED	<a href="mailto:rahulr@nitc.ac.in">rahulr@nitc.ac.in</a>	Development of advanced non-linear non-Gaussian state estimators with application to real-life problems.	SERB CRG	8,14,667
2	<b>Dr. Ranjith Ravindranathan Nair</b> Assistant Professor	EED	<a href="mailto:ranjithrnair@nitc.ac.in">ranjithrnair@nitc.ac.in</a>	Anomaly detection and counter measures in cyber physical systems using advanced control and estimation techniques.	SERB	1,22,516
3	<b>Dr. Santosh G Thampi,</b> Professor,	CED	<a href="mailto:santosh@nitc.ac.in">santosh@nitc.ac.in</a>	Studies on Condition Assessment and Management Plan for the Periyar River Basin	NRCD	3,45,00,000
4	<b>Dr. Anup Aprem,</b> Assistant Professor	ECED	<a href="mailto:anup.aprem@nitc.ac.in">anup.aprem@nitc.ac.in</a>	Design And Development of Software Simulation frame work that mimics the Cognitive radar and development of Software System to estimate the Cognitive Radar Capability	DRDO	36,33,190
5	<b>Dr. Maneesh Chandran,</b> Assistant Professor	PHY	<a href="mailto:maneesh@nitc.ac.in">maneesh@nitc.ac.in</a>	Developing diamond coatings on high cobalt content WC-10% Co Substrates for machining application	SERB-CRG	35,10,650
6	<b>Dr. S D Madhu Kumar,</b> Professor	CITRA	<a href="mailto:madhu@nitc.ac.in">madhu@nitc.ac.in</a>	Applications for Mobility, Urban development and Resilience using Artificial Intelligence (SAMUDRA)	Ministry of education (GOI)	1,99,60,079
7	<b>Dr. Muhamed Safer Pandikkadavath,</b> Assistant Professor	CED	<a href="mailto:mSAFEERPK@nitc.ac.in">mSAFEERPK@nitc.ac.in</a>	Seismic Response Modification Factors (SRMFs) for Special Steel Moment Resisting Frames (SSMRFs) Designed as per Indian Standards".	SERB- CRG	27,70,062





# LIST OF SPONSORED PROJECTS SANCTIONED IN 2024



Sl No	Principal Investigator	Department	Email ID	Name of the Project	Funding Agency	Project Amount
8	<b>Dr.Radhika B, Assistant Professor</b>	CED	<a href="mailto:bradhika@nitc.ac.in">bradhika@nitc.ac.in</a>	Damage Detection in Structural Components using Instantaneous spectral Analysis of Vibration Signals	SERB - SRG	<b>19,83,810</b>
9	<b>Dr. Ashiq Muhammed P E, Assistant Professor</b>	EED	<a href="mailto:ashiqmuhammed@nitc.ac.in">ashiqmuhammed@nitc.ac.in</a>	High frequency Transformer for Solid State Transformer Applications	Noratel Power Components India Private Limited	<b>9,00,000</b>
10	<b>Dr. Amit Kumar Singh, Assistant Professor &amp; Dr. Ratna Kumar K, Assistant Professor</b>	MED	<a href="mailto:ratna_kumar@nitc.ac.in">ratna_kumar@nitc.ac.in</a>	SERB-CRG Scheme-IN-Vivo& In-Silico Biomechanical Evaluation based design and Development of Upper &Lower Extremity passive Exoskeleton for Occupational Use	SERB	<b>34,23,200</b>
11	<b>Dr. Rakesh R Warier, Assistant Professor (Co-PI),</b>	EED	<a href="mailto:rakeshw@nitc.ac.in">rakeshw@nitc.ac.in</a>	Autonomous measurement and tracking of deep-sea plumes using swarm of heterogenous underwater vehicles	Ministry of Earth Sciences	<b>14,89,840</b>
12	<b>Dr. Muhammad Shafi (PI), INSPIRE Faculty  Dr. Maneesh Chandran Assistant Professor (Co-PI)</b>	PHY	<a href="mailto:muhammedshafi@nitc.ac.in">muhammedshafi@nitc.ac.in</a>	Design and Development of Efficient Triboelectric Nanogenerator Using MXene-SrMnO <sub>3</sub> composite fillers to Polymer-Based Negative Tribo-Layer: A Large-Scale Energy Harvesting Integration From Sea Waves	SERB	<b>45,18,008</b>
13	<b>Dr. Munavar Fairouz C, Assistant Professor</b>	CED	<a href="mailto:fairouz@nitc.ac.in">fairouz@nitc.ac.in</a>	Real-Time Traffic Management Leveraging Machine Learning Driven Unmanned Aerial Vehicle (UAV) Solutions	IFCPAR - CEFIPRA	<b>77,86,875</b>

# LIST OF SPONSORED PROJECTS SANCTIONED IN 2024



Sl No	Principal Investigator	Department	Email ID	Name of the Project	Funding Agency	Project Amount
14	<b>Dr. Sajith P K, Asst. Professor, Department of Chemistry, Farook College,</b> <b>Dr. Raghu Chathanathodi Professor (Mentor)</b>	PHY	<a href="mailto:raghuc@nitc.ac.in">raghuc@nitc.ac.in</a>	First Principles Investigation of Single Metal Atom Embedded Nitrogen-Doped Graphene for the Detection and Decomposition of Nitric Oxide	SERB	<b>18,30,000</b>
15	<b>Dr. Subhasis Mandal, Assistant Professor (Co-PI)</b>	CHED	<a href="mailto:subhasis@nitc.ac.in">subhasis@nitc.ac.in</a>	Process development for Production of food grade phycoerythrin (C-PE) from Anabaena sp	SERB	<b>21,61,192</b>
16	<b>Dr. Indumathi Sathisaran, Assistant Professor</b>	BSED	<a href="mailto:indumathis@nitc.ac.in">indumathis@nitc.ac.in</a>	Eco-friendly Heavy Metal Recycling with Protein Nanofibrils-functionalized Nanoceria Template via Sorption-crystallization Process	Royal society of Chemistry (RSC)	<b>5,24,912</b>
17	<b>Dr. Jayachandran K, Assistant Professor</b>	CED	<a href="mailto:jk@nitc.ac.in">jk@nitc.ac.in</a>	Study of durability properties of composite cement ( a type of hydraulic cement) currently being manufactured by the cement industry in India	Bureau of Indian Standards (BIS)	<b>5,40,500</b>
18	<b>Dr. Vinay Joseph, Assistant Professor</b>	ECED	<a href="mailto:vjoseph@nitc.ac.in">vjoseph@nitc.ac.in</a>	6G for Future Railway Mobile Communication System	Telecom Centres of Excellence (TCoE)	<b>4,36,21,100</b>
19	<b>Dr. Jayaraj P B, Associate Professor</b>	CSED	<a href="mailto:jayarajpb@nitc.ac.in">jayarajpb@nitc.ac.in</a>	Low-Cost GPU and AI-Based Computational Tool-Suite for Cancer Diagnosis and Radiotherapy Treatment	SPARC	<b>74,04,000</b>



# LIST OF SPONSORED PROJECTS SANCTIONED IN 2024



Sl No	Principal Investigator	Department	Email ID	Name of the Project	Funding Agency	Project Amount
20	<b>Dr. Shyam Kumar Assistant Professor &amp; Dr. Nikhil Kmar C S Assistant Professor</b>	MSED/ECED	<a href="mailto:shyam@nitc.ac.in">shyam@nitc.ac.in</a>	Development of Multilayer carbon Metapatterns for High-Performance Broad-band Electromagnetic Shielding Application	DRDO-ARDB	31,33,424
21	<b>Dr. Lintu Rajan, Assistant Professor,</b>	ECED	<a href="mailto:lintu@nitc.ac.in">lintu@nitc.ac.in</a>	IOT Enabled Physical activity Monitoring System with Flexible and Wearable PVDF-TRFE Based Nanocomposite Tactile Sensor	CSIR	21,66,880
22	<b>Dr. Mohammed Firoz, Associate Professor,</b>	DAP	<a href="mailto:firoz@nitc.ac.in">firoz@nitc.ac.in</a>	Spatial planning and Urban Development in Kerala (Thematic Pillar 1)	KILA	2,98,000
23	<b>Dr. Mohammed Firoz, Associate Professor,</b>	DAP	<a href="mailto:firoz@nitc.ac.in">firoz@nitc.ac.in</a>	Institutional framework and Governance for addressing Rural Urban Continuum urbanization pattern	KILA	2,97,000
24	<b>Dr. Nirmal Kumar Boran, Assistant Professor,</b>	CSED	<a href="mailto:nirmalkboran@nitc.ac.in">nirmalkboran@nitc.ac.in</a>	Development of Indigenous Instruction Set Simulator (ISS) & Profiler for SPARC V8 architecture (UT699 and GR740 processor in particular) for Linux OS	ISRO-RESPOND	33,31,200
25	<b>Dr. Nirmal Kumar Boran, Assistant Professor,</b>	CSED	<a href="mailto:nirmalkboran@nitc.ac.in">nirmalkboran@nitc.ac.in</a>	Compiler design for translation of DNN Networks from python-based AI frameworks to URSC's custom AI chip ISA	ISRO-RESPOND	30,10,768
26	<b>Dr. Ranjith Ravindranathan Nair, Assistant Professor,</b>	EED	<a href="mailto:ranjithrnair@nitc.ac.in">ranjithrnair@nitc.ac.in</a>	Robust adaptive integrated translation and rotation control of a flexible inorbit servicing spacecraft with application to free flyer robotic capture	ISRO-RESPOND	15,26,406

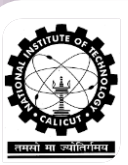
# LIST OF SPONSORED PROJECTS SANCTIONED IN 2024



Sl No	Principal Investigator	Department	Email ID	Name of the Project	Funding Agency	Project Amount
27	<b>Dr. B. Bhuvan,</b> Assistant Professor	ECED	<a href="mailto:bhuvan@nitc.ac.in">bhuvan@nitc.ac.in</a>	Design and development of Navigation Grade Voltage to Frequency Converter in SCL-CMOS180nm with Temperature drift compensation and auto zeroing	ISRO-RESPOND	<b>32,83,640</b>
28	<b>Dr. Panneerselvam Ranganathan,</b> Associate Professor	CHED	<a href="mailto:pranganathan@nitc.ac.in">pranganathan@nitc.ac.in</a>	Development of bench-scale system of integrated Hige-based CO2 capture and conversion to light olefins	DST	<b>1,00,00,000</b>
29	<b>Dr. Chandru (PI),</b> Assistant Professor	CED	<a href="mailto:chandru@nitc.ac.in">chandru@nitc.ac.in</a>	Study on physical and uniformity test requirements of chemical admixtures used in making cement concrete	BIS	<b>5,75,000</b>
30	<b>Dr. A. Sujith,</b> (Co-PI), Professor	CHY	<a href="mailto:sujith@nitc.ac.in">sujith@nitc.ac.in</a>	Transitional Ecology of Deep Sea (TEDS): Host-microbe interactions in the deep-sea habitats and potentials for translational technology.	MoES	<b>14,00,000</b>
31	<b>Dr. Rakesh R Warier,</b> Assistant Professor, (Co-PI)	EED	<a href="mailto:rakeshw@nitc.ac.in">rakeshw@nitc.ac.in</a>	Networked Marine Robotic Systems for Ocean Exploration	SAPRC	<b>1,87,600</b>
32	<b>Dr Sujith Mangalathu - Vajra Faculty</b>  <b>Dr. Robin Davis P,</b> Associate Professor (coordinator)	CED	<a href="mailto:robin@nitc.ac.in">robin@nitc.ac.in</a>	Flood Vulnerability Assessments of Infrastructure Systems using Machine Learning Techniques	ANRF	<b>1,00,00,000</b>



# LIST OF SPONSORED PROJECTS SANCTIONED IN 2024



Sl No	Principal Investigator	Department	Email ID	Name of the Project	Funding Agency	Project Amount
33	<p><b>Dr. Sudhish N. George,</b> Associate Professor (Project co-ordinator)</p> <p><b>Dr. Ameer P. M,</b> Associate Professor (Project participant)</p>	ECED	<a href="mailto:sudhish@nitc.ac.in">sudhish@nitc.ac.in</a>	Indo-Norwegian Cooperation Programme 2024 (INCP2-2024. They will be working on the project entitled “Caps Train - Making Wireless Capsule Endoscopy Clinic Ready - Training And Educating Next Generation Researchers”.	Directorate for Higher Education and Skills (HK-dir) Norway and the University Grants Commission India (UGC)	<b>70,00,000</b>
34	<b>Dr. Prateek Negi,</b> Assistant professor	CED	<a href="mailto:prateek@nitc.ac.in">prateek@nitc.ac.in</a>	Phase 2 of the AI CoE Project on Sustainable cities with IIT Kanpur as the lead institute.	Ministry of education (GOI)	
35	<p><b>Head:</b> Dr. M. L. Joy, Professor, HoD <b>Chief Co-ordinator:</b> Dr. Sujith Kumar C. S (Assistant Professor) <b>Co-ordinators:</b> Dr. Basil Kuriachen (Assistant Professor), Dr. Mohammed Rashad K (Asst. Professor), Dr. Sangeeth K. (Assistant Professor), Dr. Amit Kumar Singh (Assoc. Professor), Dr. Anoop K P (Assistant Professor).</p>	MED		Department of Mechanical Engineering got DST-FIST program	DST -FIST	<b>3,27,00,000</b>

# LIST OF SPONSORED PROJECTS SANCTIONED IN 2024



Sl No	Principal Investigator	Department	Email ID	Name of the Project	Funding Agency	Project Amount
36	<b>PI's:</b> Dr. Subashini R (HoD), Dr. Pournami P N (Assoc. Professor), Dr. A Sudarshan Chakravarthy (Asst. Professor), Dr. Pranesh Das (Asst. Professor), Dr. Santosh Kumar Behera (Asst. Professor). <b>Co-PI's:</b> Dr. Abdul Nazeer K. A (Professor), Dr. Prabu Mohandas (Assoc. Professor), Dr. Joe Cheri Ross (Asst. Professor), Dr. Vidhya Kamakshi (Asst. Professor).	CSED		Department of Computer Science and Engineering got DST-FIST program	DST - FIST	95,00,000
37	<b>Dr. Tanwistha Ghosh, WISE                      Postdoctoral Research fellow,                      Mentor: Dr. A. Sujith, Professor,</b>	CHY	<a href="mailto:sujith@nitc.ac.in">sujith@nitc.ac.in</a>	Design and synthesis of photoactive materials for the application of transparent organic photovoltaics	DST (WISE)	40,46,160
38	<b>INSPIRE Fellow : Kavya Murali                      Supervisor: Dr. Parameswaran                      Pattiyil, Professor,</b>	CHY	<a href="mailto:param@nitc.ac.in">param@nitc.ac.in</a>	DST - INSPIRE Fellowship under INSPIRE Programme	DST – INSPIRE	29,32,000
39	<b>INSPIRE Fellow : Ms.Shameela P                      Supervisor: Dr. P Muhammed Shafi</b>	PHY	<a href="mailto:maneesh@nitc.ac.in">maneesh@nitc.ac.in</a>	DST- INSPIRE Fellowship under INSPIRE	DST – INSPIRE	27,16,000



# LIST OF SPONSORED PROJECTS SANCTIONED IN 2024



SI No	Principal Investigator	Department	Email ID	Name of the Project	Funding Agency	Project Amount
40	<b>INSPIRE Fellow : Ankita Sarma</b> <b>Supervisor : Dr.Anirban Sarkar, Asst. Professor</b>	PHY	<a href="mailto:anirban@nitc.ac.in">anirban@nitc.ac.in</a>	DST - INSPIRE Fellowship under INSPIRE Programme	Department of Science & Technology	<b>27,16,000</b>
41	<b>Dr. Nithin V Sabu (INSPIRE Faculty)</b> <b>Dr. Sameer S M ( Co-ordinating Faculty), Professor</b>	ECED	<a href="mailto:sameer@nitc.ac.in">sameer@nitc.ac.in</a>	DST INSPIRE Faculty Fellowship under Ministry of Science & Technology	Department of Science & Technology	<b>1,12,40,000</b>
42	<b>INSPIRE Fellow : Sreelakshmi M P,</b> <b>Supervisor : Dr. Deepesh K P, Assistant Professor</b>	MAT	<a href="mailto:deepeshkp@nitc.ac.in">deepeshkp@nitc.ac.in</a>	DST - INSPIRE Fellowship under INSPIRE Programme	DST - INSPIRE	<b>29,32,000</b>
43	<b>Dr. Neetu Garg, Assistant Professor,</b>	MAT	<a href="mailto:neetu@nitc.ac.in">neetu@nitc.ac.in</a>	CIMPA-ICTP Fellowships "Research in Pairs".	CIMPA-ICTP Fellowship	
44	Visvesvaraya Ph.D. Scheme for Electronics and IT: Phase-II			Visvesvaraya Ph.D.	Digital India Corporation	<b>1,08,92,400</b>



# RESEARCH AWARDS



**Dr. Santosh G Thampi**  
**Professor (HAG), CED**

- ❖ *Projects: Sponsored-11; Consultancy-47*
- ❖ *STTPs/ FDPs/ STCs Organised-14*
- ❖ *Publications: Journals-63; Conference-116; Book Chapters- 7*
- ❖ *PhD Thesis completed-16; PhD Ongoing-9; M.Tech/Msc. projects- 89, B.Tech projects- 32*
- ❖ *Responsibilities Held: Warden, Chief Warden, Registrar, HoD*
- ❖ *Member, State Committee on Dam Safety, Kerala since 2022*
- ❖ *Authorised Auditor for Ash Compliance Audit of Thermal Power Plants – CPCB – since 2023*



Institute Research and Development Award – 2024  
*Lifetime Achievement*



# RESEARCH AWARDS



**Dr. Kumaravel S**  
**Assoc. Professor, EED**

*Projects: 7 Funded Projects (180.48 Lakhs) -NAMPET, CSIR, MietY, FRG, SPARC, CPRI*

*Publications: 108; Q1 Indexed: 20, Q2 Indexed: 12, Q3 Indexed: 11, IEEE Conf: 65*

*Citations: 1895, h-index: 23, I10-index: 49*

*Guided 11 PhD Students*

*Technology transfer to KEL and Hykon*



**Institute Research and Development Award – 2024**  
*Mid Career*

# RESEARCH AWARDS



**Dr. Noel Jacob Kaleekkal**  
**Asst. Professor, CHED**

- ❖ **Projects:** SERB Startup Research Grant – 2019, MOE SPARC – 2019, DST TMD – 2020, SERB ITS - 2022
- ❖ **Publications:** 2 Books – CRC, Elsevier; 50 Peer-reviewed Articles, 7 Book Chapters, 6(1) Patents Granted
- ❖ **PhD Thesis** completed- 1; PhD Ongoing-1; M.Tech projects- 3, B.Tech projects- 6
- ❖ **Awards:** PACIFICHEM Early Career Chemist Grant 2021, INAE Young Engineer Award 2022, KSCSTE Young Scientist Award 2022, IEI Young Engineer Award 2023
- ❖ **National Responsibilities:** BIS – Member & Reviewer Drinking Water Quality Standards FAD 30, Indian Membrane Society – Treasurer 2023-26



Institute Research and Development Award – 2024  
*Early Career*



# RESEARCH AWARDS



**Dr. Basil Kuriachen**  
**Asst. Professor, MED**

- ❖ **Projects:** 11; Total worth: 323 Lakhs
- ❖ **Publications:** Journals-85; Conference-70; Patent-8, Books- 2
- ❖ **PhD Thesis** completed-4; PhD Ongoing-12; M.Tech projects- 22, B.Tech projects- 6
- ❖ **Awards:** SERB SIRE Fellowship 2022, IEI Young Engineer 2019-20; Best oral presentation



Institute Research and Development Award – 2024

*Young Investigator*



## PROPOSALS SUBMITTED FROM NITC

- ✓ A proposal was submitted to the Ministry of Education with a budget of 275 Crores to establish a **Research and Innovation Park at NIT Calicut**. The R&I park will focus on stimulating innovation, protect the environment, and promote a sustainable future with the help of modern technological advancements and AI.
- ✓ A proposal to establish RACs was submitted to ISRO.
- ✓ 446 proposals were submitted to different funding agencies by the faculty members, including 128 PMECRG proposals.

## NATIONAL MISSIONS

- ✓ Two multidisciplinary projects were submitted to MNRE under the National Green Hydrogen Mission
- ✓ One multidisciplinary project was submitted to DST under the National Quantum Mission
- ✓ One Proposal is submitted to the EV Mission program as lead institute and six Proposals as consortium partner
- ✓ Seven proposals were submitted to National Research and Education program in Design, Semiconductors, packaging and Systems (DSPS)



# STEPS TAKEN TO ENHANCE THE RESEARCH ACTIVITIES



✓ **BoG, in its 70<sup>th</sup> meeting held on 04/09/2024 has approved the revised PCF/DDF/RDF components from project overhead.**

- ❖ *Personal contingency Fund – 40%*
- ❖ *Department Development Fund – 10%*
- ❖ *Institute Research Development Fund – 50%*

✓ **BoG, in its 68<sup>th</sup> meeting held on 15/05/2024 has approved the revised the consultancy norms**

*For all consultancy related activities, the distribution norms shall be 70 (for consultant): 30 (for Institute). Departments that has not undertaken any consultancy for the last three years (2021, 2022 and 2023), the distribution shall be 90:10, only for the first two projects.*

✓ **R&D Support cell was formed to support the PI's for executing the projects.**

*"A dream becomes a goal when action is taken toward its achievement"*

*- Bo Bennett*

