IIT PALAKKAD

Nurturing Minds for a Better World

Research Admissions

Indian Institute of Technology Palakkad

January 2025

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1. Important Dates[1]

Advertisement to Appear	5th of October, 2024
Application Portal Opens	5th of October, 2024
Last date for submission of application online	25th of October, 2024
Shortlist to appear	On or before the 15th of November, 2024
Interview dates	Between the 7th and 13th of December, 2024 (Online Interviews may start from the 1st of December, 2024)
Selection list to appear	Before the 16th of December, 2024
Date of Joining	2nd of January, 2025

2. Important Guidelines for MS (by Research) and PhD Application

i	Please read the instructions given in the admission brochure carefully before filling up the application form.
ii	Online application form is available at the Institute website resap.iitpkd.ac.in. After filling the form, please take a printout and keep it for records.
iii	The application fee is as follows: GN/OBC-NCL/EWS Male candidates: Rs.100/- GN/OBC-NCL/EWS Female candidates: Rs.50/- SC/ST and PwD candidates: Rs.50/- APPLICATION FEE IS NON-REFUNDABLE
iv	OBC-NCL / EWS certificates in appropriate format as per the Government of India, issued / signed by the Competent Authority must be uploaded with the ONLINE application and the original shall be submitted at the time of admission. **The certificate must be issued on or after the 1st of April, 2024.**

[1] Any changes in dates will be notified only on the institute website.

v	The candidates should check the institute website for any important announcements and the results

3. The Institute

The Indian Institute of Technology Palakkad (IIT Palakkad) is an autonomous institute of national importance established in 2015 by the Government of India as one of the third generation IITs. IIT Palakkad conducts undergraduate academic programme of BTech, postgraduate course programmes of MTech and MSc and research programmes leading to MS (by Research) and PhD in various disciplines.

Main Entrance to the Nila campus

The new campus is named Sahyadri as a tribute to the Western Ghats that surround the campus on 504 acres, and has begun functioning in full swing. Classes are now fully functional from Nila and Sahyadri campuses. The permanent campus is about 7 km from Palakkad in the Palakkad-Coimbatore highway. The scenically charming sprawling permanent campus is now being developed into an excellent and modern technological campus. As of now, the Institute is proud of its fast growth in terms of very qualified and committed faculties and staff, well equipped laboratories, excellent computing infrastructure, well stacked library and a brilliant student community.

4. Departments/Centres and Research Areas at IIT Palakkad

BTech programmes in the four disciplines of Civil Engineering, Computer Science and Engineering, Electrical Engineering and Mechanical Engineering started in 2015. Research programmes leading to MS (by Research) and PhD commenced in August 2017. Major highlights of the different departments/centres, research areas and research facilities are given below.

Sahyadri Campus

4.1. Biological Sciences and Engineering

The Faculty

1. Prof. Jagadeesh Bayry, PhD (Sorbonne University Paris, France)
2. Dr. Prasanna Bhat, PhD (IISc, Bengaluru)
3. Dr. Abdul Rasheed P, PhD (NIT Calicut)
4. Dr. Bibhu Ranjan Sarangi, PhD (RRI Bengaluru)
5. Dr. Sushabhan Sadhukhan, PhD (Case Western Reserve University, USA)

Biological Sciences and Engineering (BSE) Department at Indian Institute of Technology Palakkad aims at interdisciplinary biomedical research and biotechnology to improve human and animal health under 'One Health' concept.

The current focus of the department is on

1. Human pathophysiology
2. Host-pathogen interaction
3. Virology
4. Diagnosis of diseases

5. Biophysics

The department will be expanded during the coming years with relevant expertise in diverse areas of biomedical research. Together, our aim is to develop a strong and dynamic scientific community that performs cutting edge research and educational activities through Academic-Industry-Health Care Systems partnerships to improve human and animal health.

Programmes

PhD and MS Programmes in Biological Sciences and Engineering: We are currently offering PhD/MS programmes. The members of the Department are engaged in cutting edge research in different domains of Biomedical Research as depicted above.

Research Areas Available for Admission in January 2025

- Immunology (fundamental, immunotherapy, host-pathogen interaction, autoimmunity) (PhD)
- Virology (PhD)
- Experimental Biophysics (PhD)
- Biomedical Applications of Nanomaterials (MS)
- Diagnostic Sensor Device Development (PhD)

Exceptional PhD/MS applicants meeting the appropriate criteria can be supported by PhD/MS fellowship from the following sponsored research projects funded by various agencies.

1. **Title of the project: Development of multifunctional MXene based drug delivery system for efficient delivery of cyclic AMP to the human dendritic cells towards the treatment of inflammatory diseases**

   Principal Investigator : Dr. Abdul Rasheed P

   Co PIs : Prof. Jagadeesh Bayry

   Project No : 2024-244-BSE-ARP-HEFA-SP

   Funding Agency : HEFA

   Position : 1 PhD student.

2. **Title of the project: Fabrication of low cost sensor devices for early detection of biomarkers related to neurological disorders using 2D nanomaterials**

   Principal Investigator : Dr. Abdul Rasheed P

Co PIs	: Prof. Jagadeesh Bayry
Project No	: 2021-086-BSE-ARP-DBT-SP
Funding Agency	: DBT
Position	: 1 MS student.

Facilities

Excellent state-of-the-art research facility is coming up at Sahyadri and Nila Campus of the Institute and we are in the process of acquiring several key instruments for the department. Other commonly used instruments like confocal microscope, fluorescence microscope, fluorescence spectrophotometer, UV spectrophotometer, liquid chromatography–mass spectrometry and others are already available either at the Institute central facility or in other departments. The Institute Ethics committee for the research involving humans is in the administrative process of obtaining the relevant permission.

The department hosts five PhD scholars and two postdoctoral fellows. One post-doc fellow is working on bioinformatics and in silico to understand the pathogenesis of virus diseases and to identify the drug target. Another post-doc is working on the development of sensors for the early diagnosis of chronic diseases.

The faculty members in the department have international and national recognitions and had academic training and work experience from reputed institutes in India and abroad. They serve as editors or editorial board members of various international journals, served as a member of the European Research Council, and featured in the top 2% scientists in the world. Several articles are tagged by Clarivate Analytics as highly cited articles.

4.2. Chemistry

The Faculty

1. Dr. Debarati Chatterjee, PhD (IISc, Bangalore)
2. Dr. Dinesh Jagadeesan, PhD (JNCASR, Bangalore)
3. Dr. Mintu Porel, PhD (University of Miami, USA)
4. Dr. Padmesh A, PhD (Massey University, New Zealand)
5. Dr. Supratik Sen Mojumdar, PhD (IACS, Kolkata)

6. Dr. Sushabhan Sadhukhan PhD (Case Western Reserve University, USA)
7. Dr. Shanmugaraju Sankarasekaran, PhD (IISc Bangalore)
8. Dr. Rositha Kuniyil, PhD (Institut Català d'Investigació Química (ICIQ), Spain)
9. Dr. Abdul Rasheed P (DBT Ramalingaswami Fellow), PhD (NIT Calicut)
10. Dr. Yugender Goud Kotagiri (Ramanujan Fellow), PhD (NIT Warangal)
11. Dr. Yuvaraj K., PhD (IIT Madras)
12. Prof. V. Haridas (Visiting faculty from IIT Delhi)
13. Prof. Viswanathan Kumar (Honorary Professor)

In the initial years from 2015, the Discipline of Chemistry was involved in instructional work of the BTech courses. In July 2017, the department took a leap to start its PhD program and in 2019 it started the MSc program. Currently, a total of 39 PhD scholars and 5 postdoctoral fellows are working in various areas of theoretical and experimental chemistry under the guidance of the highly motivated faculty of the department.

Research Areas

- Fundamentals studies on biophysical chemistry
- Molecular dynamics simulations
- Mechanochemistry
- Equilibrium and non-equilibrium statistical mechanics of soft matter
- Structure and dynamics of the biopolymers / macromolecules
- Materials chemistry and heterogeneous catalysis
- Organic macromolecules - design, synthesis and applications in material and biomedical sciences
- Self-assembly formation of discrete supramolecular ensembles and study of their functional applications
- Engineering mesoporous polymers for selective adsorption and sequestration of pollutants/ hazardous substances
- Fabrication of functional nano-structures for bio-medicine
- Design, synthesis and development of novel molecular entities for targeted therapy
- Bio-orthogonal chemistry in drug discovery
- Computational catalysis and small molecule activation
- In silico design of novel organo- and transition metal catalytic systems and artificial metalloenzymes
- Fluorescence spectroscopy to study bio-molecule metal interactions.
- Main group and Organometallic chemistry

- Wearable and Point of Care Sensing Devices - Towards Biomedical, Environmental, Agriculture, Quality control and Security Applications

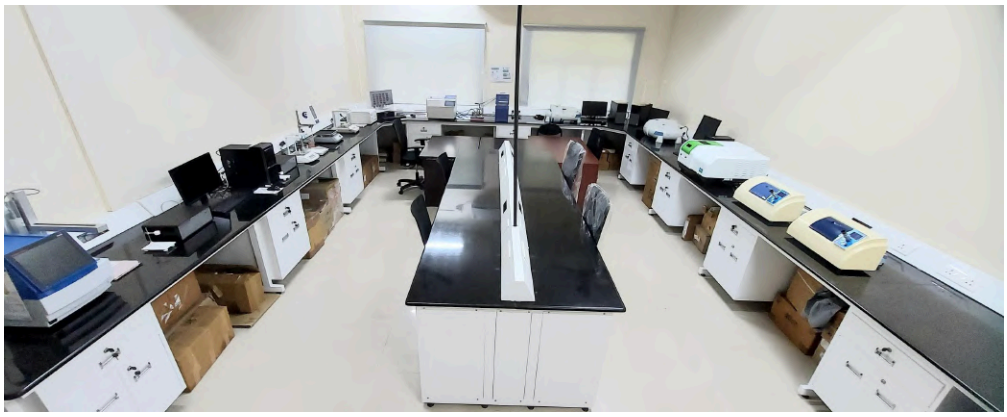
Research Areas Available for Admission in January 2025

- Theoretical Chemistry
- Fluorescence Spectroscopy
- Main Group Chemistry

Facilities

The Department of Chemistry has well equipped laboratories that have basic and sophisticated equipment to carry out high quality teaching and research. They include

- Work benches
- Analytical balances
- Benchtop conductivity meter
- Benchtop pH meter,
- Digital colorimeter with micro control and 8 filters
- Ice flake machine
- Melting point apparatus
- Spectrophotometer
- Ultrasonic bath
- UV-vis spectrophotometer
- Fluorescence spectrophotometer
- Microwave reactor
- Cyclic Voltammeters
- Physisorption
- Optical microscope
- Polarimeter
- Bomb Calorimeter
- Electrophoresis
- Ovens
- High temperature furnaces
- Chemical Vapour deposition system
- Glove box



In addition to this, IIT Palakkad has set up different central facilities for experimental and theoretical studies such as the Chandra High Performance Computing Cluster, Central Instrumentation Facility (CIF), and Central Micro-Nano Fabrication Facility (CMFF). As a part of central facilities, sophisticated instruments (relevant to the field of chemistry) such as High-performance liquid chromatography (HPLC), Liquid Chromatography-Mass Spectrometry (LC-MS), Thermal Gravimetry Analysis - Mass spectrometer (TG-MS), Gas Chromatograph, FT-IR, Raman, X-ray diffractometer, Chemisorption analyzer, NMR, UV-vis spectrophotometer, Scanning Electron Microscope, Confocal Microscope and Fluorescence spectrophotometers are available for the research.


UG / PG Lab of the discipline of Chemistry

4.3. Civil Engineering

The Faculty

1. Dr. Anil Kumar M V, PhD (IIT Madras)
2. Dr. Ankesh Kumar, PhD (IIT Delhi)
3. Dr. Athira P, PhD (IIT Madras)
4. Dr. Athira Gopinath(BITS, Pilani)
5. Dr. Arun C. O, PhD (IIT Madras)

6. Dr. B K Bhavathrathan, PhD (IIT Bombay)
7. Dr. C V Veena Venudharan, PhD (IIT Kharagpur)
8. Dr. Deepak Jaiswal, PhD (Pennsylvania State University, USA)
9. Dr. Divya P V, PhD (IIT Bombay)
10. Dr. Gokulnath C, PhD (IIT Madras)
11. Dr. Madhu Karthik M, PhD (Texas A&M University, USA)
12. Dr. Praveena Gangadharan, PhD (IIT Madras)
13. Dr. Rakesh J Pillai, PhD (IIT Madras)
14. Dr. Sanjukta Chakraborty, PhD (IIT Kanpur)
15. Dr. Sarmistha Singh, PhD (Auburn University,USA)
16. Dr. Senthilkumar V, PhD (IIT Madras)
17. Dr. Subhasis Mitra, PhD (Auburn University, USA)
18. Dr. Sudheesh T K, PhD (The University of Florida, USA)
19. Dr. B. Sridharan(IIT Madras)
20. Dr. Subrat Kumar Mallick (IIT Guwahati)

Civil Engineering is one of the four BTech programmes that is being offered at IIT Palakkad since its inception in 2015. PhD and MS (by Research) programmes in Civil Engineering are offered with specializations in Construction Materials, Construction Management, Structural Engineering, Geotechnical Engineering, Water Resources Engineering, Transportation Engineering and Environmental Engineering. The Discipline of Civil Engineering started offering a two-year M.Tech. program with a specialisation in Geotechnical Engineering in the academic year 2019-20. In a short span of four years, the Civil Engineering stream has successfully set up all basic labs for the BTech program. In addition, several advanced labs have also been set up for use by the undergraduate and postgraduate students and to execute research projects.

The faculty members in Civil Engineering come with academic training and experience from various reputed institutes in India and abroad. The diverse background of the faculty helps to bring in different perspectives to teaching and research to the students in Civil Engineering.

Research Areas

- **Construction Materials:** Performance assessment and optimization of special concretes for structural systems such as RCC, FRC & SCC; Development of design methodologies for structural systems using high-performance concrete; Sustainable building materials; Alternative binders; Characterization of novel construction materials; Development of zero-cement/low-cement concrete

matrices.

- **Construction Engineering and Management:** IT Application in Construction Automation, Design Management, Lean Construction, Reality Modeling and BIM Applications in Construction Management, Policy Making in Infrastructure Project Delivery.
- **Environmental Engineering:** Water and wastewater treatment; microbial fuel cells; electrochemical treatment techniques
- **Geotechnical Engineering:** Experimental Geotechnics, Physical modelling in Geotechnical Engineering, Deep Foundations, Soil Stabilization and Ground Improvement Methods, Geosynthetics and Reinforced Earth, Geo-Environmental Engineering, Cyclic Behaviour of Soils, Computational Methods in Geotechnical Engineering, Landslides and slope stability, constitutive modeling in geomechanics, Petroleum Related Rock Mechanics, Underground Space Technology, Blast Resistant Design of Underground Structures, Geothermal Energy.
- **Structural Engineering:** Steel structures, Reinforced and prestressed concrete structures, Steel-concrete composite structures, Structural evaluation of deteriorated structures, adaptive passive control, optimal feedback control and related study on stability, robustness, time delay, testing protocol to reproduce the prototype behaviour, Constitutive modelling, Continuum mechanics, Experimental mechanics, Stochastic analysis, Computational structural mechanics, Structural reliability, Meshfree method, Fragility analysis
- **Transportation Engineering:** Transportation Planning; Traffic Flow Modelling and Simulation; Traffic Safety; Pavement Materials; Pavement Design; Pavement Evaluation; Pavement Management Systems
- **Water Resources Engineering:** Computational and experimental Open channel flow hydraulics; Urban flood modelling; Large scale coupled hydrological and hydraulic modelling; Coastal flood simulations induced by Cyclones and Tsunami; Impact of climate change and LULC changes in urban flooding; Optimization of multipurpose multiple reservoirs; Climate change and climate variability impacts on water resources and crop production; Study and forecasting of extreme events; Nonpoint source pollution analysis; Hydrologic and water quality modelling; Forecasting of water resources; Integrated water resources management.

Some basic laboratory equipment

The faculty members of Civil Engineering are also actively involved in sponsored and consultancy projects to provide working solutions to problems faced by industry and society. The sponsoring agencies include central and state departments and private organizations like Department of Science and Technology (DST), Vigilance and Forest Intelligence, Kerala Public Works Department, National Mission on Himalayan Studies, Kerala State Council for Science, Technology and Environment, Techfab India Industries Ltd. etc. The consultancy services are offered to different agencies like Military Engineering Services (MES), Palakkad Municipality, Fumace Fabrica India Ltd., Kerala PWD, Central PWD, Durafloor Concrete Solutions, Emad Engineering Enterprises, EKK Infrastructure Ltd., Flatworx Consulting, BPCL, IOCL, Kerala Water Authority, KIIFB, Airport Authority of India (AAI) etc.

Apart from the scholastic activities, the students, staff, and faculty members in Civil Engineering are actively involved in several outreach programmes such as Unnat Bharat Abhiyan, clean energy and clean water campaign, national science day, and Vigyan Jyothi to name a few.

Research Areas Available for Admission in January 2025

- Structural Engineering, Water Resources Engineering, Construction Engineering and Management, Construction Materials, Environmental Engineering, and Transportation Engineering

Exceptional MS/PhD applicants meeting the appropriate criteria can be supported by MS/PhD fellowship from the following sponsored research projects funded by various agencies.

1. **Title of the Project: Enhanced hydrological fluxes by using integrated hydrological model**

   PI/CoPI: Sarmistha Singh

   Project No: ISRO/RES/4/715/24-25

   Funding agency: ISRO
2. **Title of the Project: Durable and Sustainable Low-Carbon Cements using Local Clays and Biomass Ashes - A Local Approach to Future Cements**

   PI/CoPI: Athira Gopinath

   Project No: IGSTC/WISER 2024/AG-1883/43/2024-25/86

   Funding agency: IGSTC
3. **Title of the Project: Global Sanitation Center of Excellence, IIT Palakkad**

   PI/CoPI: Praveena Gangadharan

   Project No: 2022-116-CSE-VIC-BMG-SPCP

   Funding agency: BMGF
4. **Condition Assessment & Management Plan (CAMP) for Periyar River Basin**

   PI/CoPI: Subhasis Mitra

   Project No: 2024-216-CE-ATP-MOJS-SP

   Funding Agency: Ministry of Jal Shakti
5. **Condition Assessment & Management Plan (CAMP) for Periyar River Basin**

   PI/CoPI: Praveena Gangadharan

   Project No: 2024-216-CE-ATP-MOJS-SP

   Funding Agency: Ministry of Jal Shakti

Facilities

- **Structural Engineering**: 100 kN and 500 kN Servo Hydraulic Universal Testing Machines; Actuators:100 kN, 250 kN, and 500 kN; 2D and 3D testing frames; data acquisition systems, Load Controlled UTMs :300 kN and 3000 kN, Speed Control motor Material characterization: Servo hydraulic compression/flexural testing system 3000kN, 300 kN, 100 kN, 15 kN; SCC testing, Digital Image Correlation System.
- **General computational facilities**: Various analysis and design Software, Finite Element Method software, Spatial data analysis Software, and High-performance computing cluster of the Institute.
- **General workshop**: Lathe, milling, grinding and drilling machines, welding, power tools etc.
- **Transportation Systems:** PTV Vissim, PTV Visum, Cube Analyst, Synchronous video cum GPS logger, ArcGIS
- **Pavement Engineering:** (1) Conventional Bitumen Tests, (2) Aggregate Tests, (3) Bituminous Mix Design, & (4) Performance Characterization
- **Environmental Engineering:** (1) UV Spectrophotometer (2) TOC Analyzer (3) Multi-Channel Potentiostat.
- **Geotechnical Engineering:** (1) Fully automated static triaxial system, (2) Computerised cyclic triaxial system, (3) Computerised flexible wall permeability system (4) Automated consolidation test apparatus, (5) Computer controlled direct shear test setup, (6) Fully automated soil-geosynthetic interface shear resistance testing apparatus, (7) CBR Test apparatus, and (8) all the basic equipment for soil characterization.

Some advanced laboratory equipment

4.4. Computer Science and Engineering

The Faculty

1. Dr. Albert Sunny, PhD (IISc Bangalore)
2. Dr. Anish Hirwe, PhD (IIT Hyderabad)
3. Dr. Avirup Mandal, PhD (IIT Bombay)
4. Dr. Deepak Rajendraprasad, PhD (IISc Bangalore)
5. Dr. Jasine Babu, PhD (IISc Bangalore)
6. Dr. Krithika Ramaswamy, PhD (IIT Madras)
7. Dr. Krishnamoorthy Dinesh, PhD (IIT Madras)
8. Dr. Koninika Pal, PhD (Saarland University, Technical University Kaiserslautern)
9. Dr. Piyush P Kurur, PhD (IMSc Chennai)
10. Dr. Pratik Ghosal, PhD (University of Wroclaw, Poland)
11. Dr. Sahely Bhadra, PhD (IISc Bangalore)
12. Dr. Sandeep Chandran, PhD (IIT Delhi)
13. Dr. Satyajit Das, PhD (University of South Brittany, France, University of Bologna, Italy)
14. Dr. Srimanta Bhattacharya, PhD (Indian Statistical Institute, Kolkata)
15. Dr. Unnikrishnan Cheramangalath, PhD (IISc, Bangalore)
16. Dr. Vivek Chaturvedi, PhD (Florida International University, USA)

The Computer Science and Engineering (CSE) department at the Indian Institute of Technology Palakkad offers undergraduate, graduate, and doctoral programmes. The department envisions imparting knowledge across depth and breadth of computer science and engineering. Our programmes build a strong foundation in students and prepare them for both cutting-edge technology industry jobs and higher education. We witness a very high percentage of placements every year and many of our students are pursuing higher studies in reputed universities in India and Abroad.

Undergraduate Programme

Bachelor of Technology in Computer Science and Engineering

Graduate Programmes

1. Master of Science (by Research)
2. Master of Technology in Computing and Mathematics (MCaM), jointly with the Department of Mathematics.

3. Master of Technology in System on Chip Design (SoCD), jointly with the Department of Electrical Engineering
4. Doctor of Philosophy

Research

The core research areas and subareas of the CSE department are listed below.

1. **Theoretical Computer Science**: Algorithms, Complexity Theory, Probabilistic Computing, Graph Theory, Combinatorics, Discrete Mathematics, Computational Algebra, Cryptography.
2. **Programming Languages, Compilers, and Verification:** Programming Languages, Type Theory, Compilers, Programme Analysis, Proof Assistants, Formal Verification.
3. **Computer Systems:** Computer Architecture, Electronic Design Automation, Cyber Physical Systems, Reconfigurable Computing, Low power SoC, Systems for AI, High Performance Computing, Operating Systems, Database Systems, Computer Networks, Distributed and Interconnected Systems, Computer Graphics, Geometry Processing, Haptics

Other associated research areas are Probability Theory, Machine Learning, Natural Language Processing, Computer Vision, and Data Mining.

The CSE faculty members are active in research and continuously engage with industry and academia around the globe. They have active research collaborations with world class Universities such as Nanyang Technological University Singapore, University of Alberta Canada, Aalto University Finland, University of South Brittany France, and University of Bologna Italy to name a few.

Research Areas Available for Admission in January 2025

- **Computer and Communication Systems**
- **Software Engineering**
- **Computer Graphics and Geometry Processing**

Facilities

The facilities at CSE Department include the latest boards and software from ARM, Cadence, Xilinx necessary for developing modern Systems-On-Chip. The central facilities at the institute includes a HPC Cluster, and a micro-nano device fabrication facility with Class 1 lakh and 10000 clean room, and a characterization facility.

4.5. Data Science

The Faculty

1. Dr. Garima Shakya, PhD (IIT Kanpur)
2. Dr. Koninika Pal, PhD (Saarland University, Technical University Kaiserslautern)
3. Dr. Mrinal Kanti Das, PhD (IISc Bangalore)
4. Dr. Nikhil Krishnan M, PhD (IISc Bangalore)
5. Dr. Narayanan C K, PhD (Arizona State University)
6. Dr. Sahely Bhadra, PhD (IISc Bangalore)
7. Dr. Satyajit Das, PhD (University of South Brittany, France, University of Bologna, Italy)
8. Dr. Swapnil Hingmire, PhD (IIT Madras)

The Data Science (DS) department at the Indian Institute of Technology Palakkad began its journey in 2021 with a graduate and doctoral programmes. We started an undergraduate programme last year. We are engaged in a broad range of cutting-edge research in the area of Data Science by developing advanced algorithms and prototypes to tackle challenging real- world problems in various domains such as agriculture, healthcare, language processing, transportation, etc. We currently have thirteen research scholars associated with the DS department.

Research Areas

The core research areas and subareas are listed below.

- **AI and Machine learning**: Kernel Learning, Multiview Learning, Robust Optimization and Convex Optimization for Large Data, Anomaly Detection in Time Series, Privacy-aware Learning, Bayesian Model.
- **Systems for AI**: Computer Vision, Architecture for Deep Learning, Energy-efficient and High-performance Systems for Multimedia Applications, Energy-aware Algorithms for Signal Processing to efficient architecture design, Low-power VLSI circuit implementation, Error-Correcting Codes for Distributed Data Storage, Low-Latency Communications, Straggler-Resilient Distributed Computing
- **Information Retrieval and Natural Language Processing**: Harvesting Knowledge from Text and Web Tables; Knowledge Base Curation,

Question-Answering, Text mining, Discourse analysis, Scientific document understanding, Building Smart Indices for Efficient Similarity Search.

- **Multi-agent systems**: Game theory and Mechanism design for social good, Fairness and welfare in multi-agent systems, collective decision making, Algorithms, Ethical AI, Multiagent Resource Allocation, Algorithms, and Computational Social Choice, Matching.

Research Areas Available for Admission in January 2025

- Artificial Intelligence
- Computer Architecture
- Computer Vision
- Cryptography
- Deep Learning
- Federated Learning
- Gradient Aggregation
- Information Retrieval
- Machine Learning
- Multi-agent systems
- Natural Language Processing

Candidates with an eligible degree (based on the minimum eligibility criteria mentioned in section 6.3) in Computer Science/Information Technology/Electronics & Communication Engineering/ Electrical Engineering /Mathematics /Statistics/ Data Science/allied disciplines will be considered for this cycle of PhD and MS (by Research) admission in the Data Science department.

Facilities

The department has lab facilities for conducting UG and PG courses and hosts a data processing lab with 10 small-scale GPU systems for research. Under the Central Infrastructure Facilities of the institute, we have two large -scale computational facilities:

- Chandra-High Performance Computing Cluster (HPC) [64 compute nodes, each with a dual 12-core Intel processor. Each core runs at 2.2 GHz and has 4 GB of RAM per core. 100TB Disk space]
- Bhavani-GPU Computing facility [six high-end NVIDIA A30 Tensor Core GPU cards]

4.6. Electrical Engineering

The Faculty

1. Dr. Anirudh Guha, PhD (IISc Bangalore)
2. Dr. Arun Rahul S, PhD (IISc Bangalore)
3. Dr. Arvind Ajoy, PhD (IIT Madras)
4. Dr. Jobin Francis, PhD (IISc Bangalore)
5. Dr. Manas Kumar Jena, PhD (IIT Delhi)
6. Dr. Naga Brahmendra Yadav Gorla, PhD (NUS, Singapore)
7. Dr. Nikhil Krishnan M (IISc Bangalore)
8. Dr. Revathy P, PhD (IISc Bangalore)
9. Dr. Sabarimalai Manikandan (IIT Guwahati)
10. Dr. Shaikshavali Chitraganti, PhD (University of Lorraine, France)
11. Dr. Sneha Gajbhiye, PhD (IIT Bombay)
12. Dr. Sreenath Vijayakumar, PhD (IIT Madras)
13. Dr. Subrahmanyam Mula, PhD (IIT Kharagpur)
14. Dr. Sukomal Dey, PhD (IIT Delhi)
15. Dr. Swaroop Sahoo, PhD (Colorado State University, USA)
16. Dr. Vijay Muralidharan, PhD (IIT Madras)

The Department of Electrical Engineering (EE) at IIT Palakkad offers a vibrant environment for undergraduate, post graduate education and research in many areas of Electrical Engineering. We are a team of 16 faculty members, 250 students and 6 staff members engaged in cutting edge research and teaching in several frontier areas of Electrical Engineering.

Research Areas

- **Biomedical Signal Processing and Imaging**: Research in Brain-Computer Interface Systems, ultrasound imaging, physiological sensing and monitoring, medical imaging.
- **Communication, Information Theory and signal processing**: Wireless communication, design and analysis of next generation cellular systems, cooperative communications, compressed sensing, statistical signal processing (detection and estimation theory), information and coding theory, machine learning for communication.
- **Control and Robotics**: Stability and control issues in networked control systems with/without constraints, Event triggered state estimation with noisy measurements, learning of dynamical systems. Design and development of

interesting problems with wheeled, legged, humanoid robots, medical devices, robot vision having a multidisciplinary approach. Stability analysis of Nonlinear Systems, Modeling, analysis, and control design of robotic/aerospace/mechanical systems like unmanned rolling vehicles, underwater vehicles, surface vehicles, aerial vehicles.

- **Digital VLSI Design**: VLSI architectures for real-time signal processing applications, Energy-efficient VLSI Systems for machine learning.
- **Measurements and Instrumentation**: Measurements, sensor design, signal conditioning circuits, embedded systems in instrumentation and measurement, direct digital converters for resistive, capacitive and inductive sensors. Building instruments for measurements on micro-nano electronic devices.
- **Microwave integrated circuits including Antennas, Radar systems, and signal processing**: Microwave remote sensing, remote sensing applications of radars, weather radar design and signal processing, phased array weather radar. Microwave and Millimetre wave integrated circuits including Antennas, Radio Frequency MEMS.
- **Nanoelectronics, Optoelectronics and Semiconductor Devices**: Research broadly in semiconductor devices and modeling, fabrication, and characterisation, nanoelectronics, plasmonics/optoelectronics, development of instruments for experiments in nanoelectronics.
- **Power Electronics**: Voltage Source Inverters (VSI), modulation and control of voltage source inverters, control of power electronic systems, HVDC and FACTS, Modular Multilevel Converters, Renewable Energy, Induction Motor Drives.
- **Power Systems**: Power system modelling, wide area monitoring, protection and control (WAMPAC), Renewable and Distributed generation, Big data analytics, machine learning and signal processing for smart grid.

Research Areas Available for Admission in January 2025

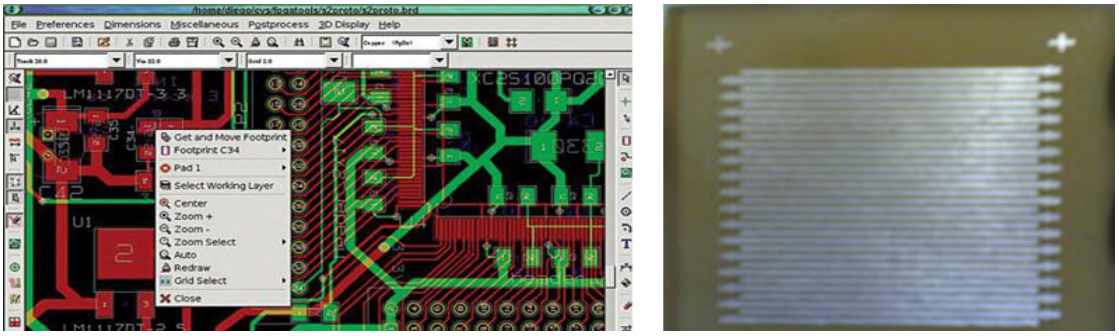
- The details can be found here.

Facilities

- **Electronics Technology Laboratory**: Electronics Technology Laboratory provides an integrated environment for students to understand the working of analog and digital circuits, microprocessors, microcontrollers, and the interplay between computational tools and electronics hardware. Each desk is equipped with digital storage oscilloscopes, arbitrary waveform generators, power supplies and various prototyping boards (Field Programmable Gate Arrays, Microcontrollers, etc.) and a desktop PC. In addition, it houses the set-ups for control systems

experiments such as ball and beam, rotary inverted pendulum, magnetic levitation and closed loop temperature controller. Digital Circuits, Analog Electronics, Computer Aided Design and Control Systems lab courses are also run in this laboratory.

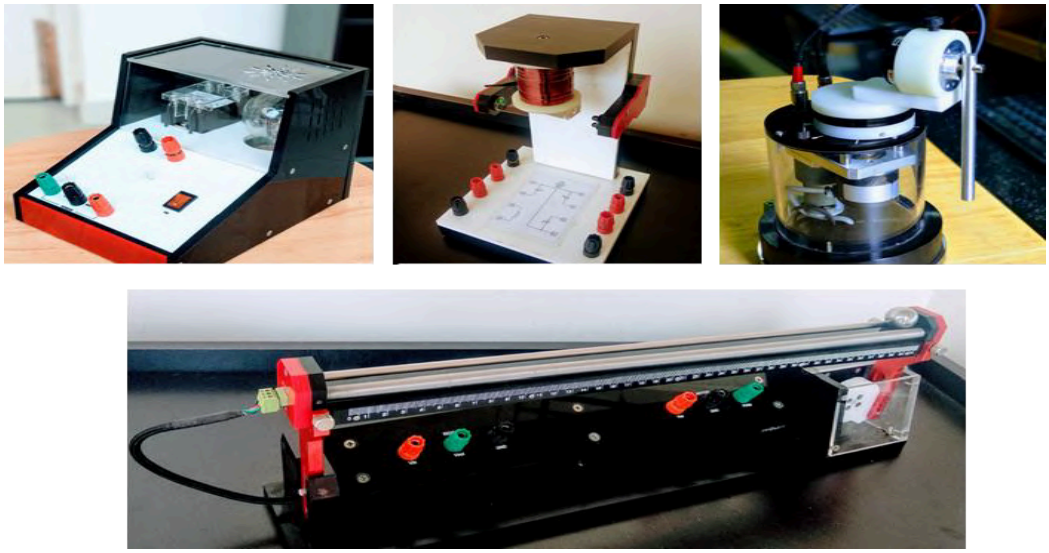
- **Communications and Microwave Laboratory**: Communications and Microwave Laboratory provide an environment for understanding and experiencing the signal chain of a typical analog and digital communication system and microwave systems. Typical facilities include optical fiber training kits that have a multi-channel multiplexing encoder and a corresponding decoder with demultiplexer, where one can perform various wired optical communication experiments. The laboratory also houses software defined radios - national instruments 2901 and 2920 which are very versatile and reconfigurable radios that can operate in the range 70MHz to 6GHz and can be used to prototype various communication systems and new technologies for applications such as 5G and IoT.
- **Electrical Machines Laboratory**: Electrical Machines Laboratory provides students with an opportunity to understand the working of various AC and DC machinery. Some of the facilities include: 14 machine beds each consisting of 2 DC machines coupled with induction machine and synchronous machine, fully isolated voltage and current measurement units, data acquisition systems for capturing real time data, a unique make your own electrical machines by integrating various parts and its testing facility, bidirectional power DC power supply, special machines like BLDC, SRM, single phase and 5 phase machines, single phase and three phase and multi winding transformers.



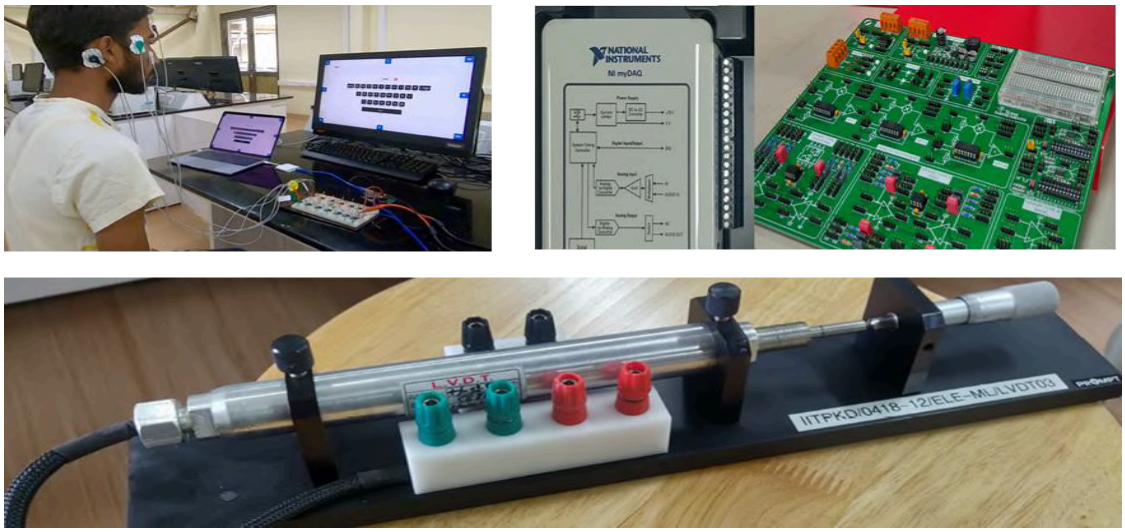
Computer Aided Design, Left: KiCAD for Layout, Right: Toner Transfer for PCB

- **Power Systems Laboratory**: Power Systems Laboratory provides students with an environment to experiment on various aspects of power systems including safety and quality. Some of the facilities include: Fault simulator for studying and analyzing various power systems faults, facility for studying parallel operation

of alternators, facility for studying earth fault protection, differential protection, over voltage and over current protection, solar simulator for studying PV array characteristics, air blast circuit breaker assembly with earth fault protection, earth resistance measurement unit, power quality analyzer, insulation testers and PSCAD/DSA Tools/Mipower for power system analysis.

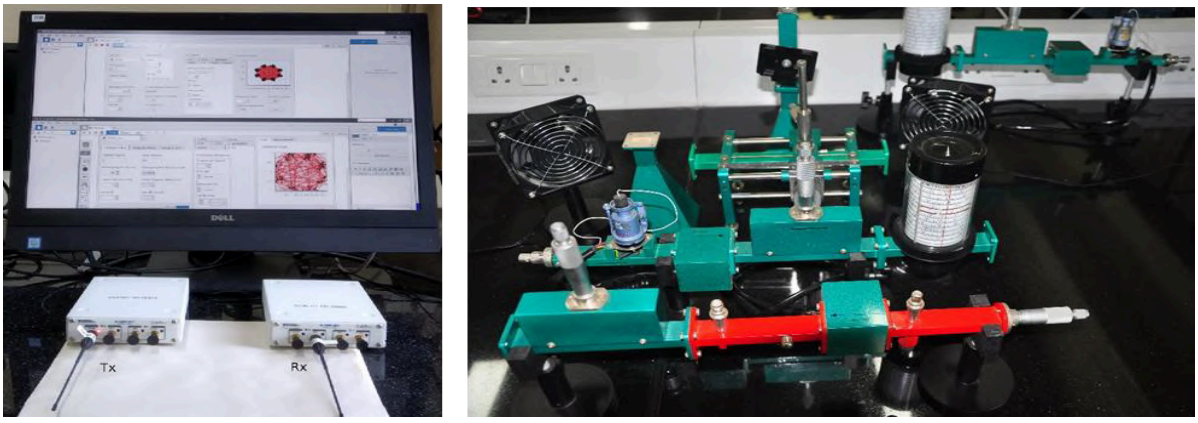


Control Systems Lab, In Clockwise Order from Top: Temperature Control, Magnetic Levitation, Inverted Pendulum and Ball and Beam Balancing



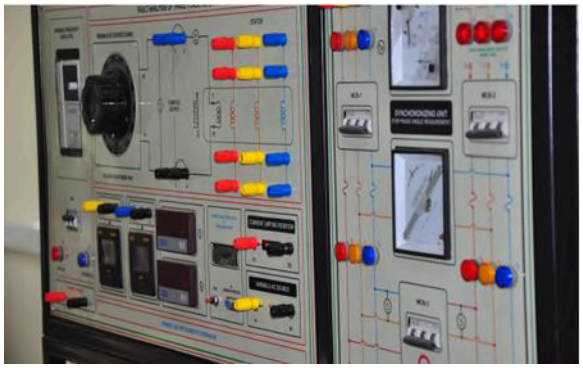
Measurements and Instrumentation Lab, In Clockwise Order from Top: Electro-oculogram EOG Data Acquisition, Analog Signal Conditioning (TI ASLK) and Data Acquisition (NI MyDAQ) and Linear Variable Differential Transformer (LVDT) setup

- **Power Electronics Laboratory**: Power Electronics Laboratory provides students with an exposure to latest trends in power electronics research and development. Facilities include: IGBT modules with isolated gate drive assembly45 kw Bidirectional DC power supply, TMS320f28379D controller boards, Spartan 6 FPGA cards, High end Oscilloscopes with differential probes for high voltage and high current measurement, Hall effect voltage and current sensors, Iron core and ferrite core inductors

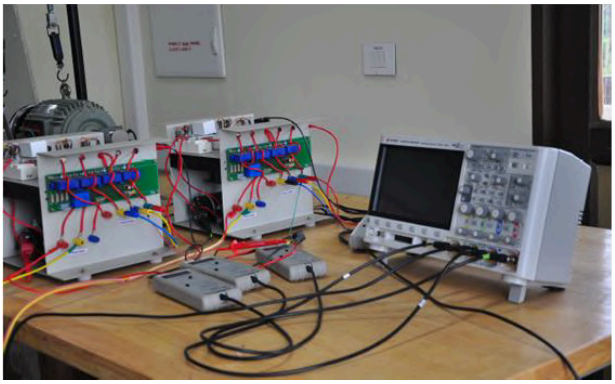
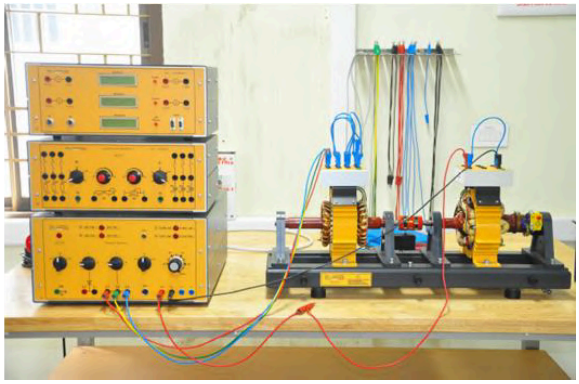


Communications and Microwave Lab, Left: Software Defined Radio (SDR) Kit, Right: Microwave Communication Set Up

Electrical Machines Lab, Left: Electrical Machines, Right: Advanced Human Machine Interface




Power Systems Lab, Left: Alternator Fault Simulator wWith Grid Synchronization Facility, Right: Solar Photo Voltaic Array Simulator

Power Electronics Lab, Left: IGBT based Inverter Modules, DSO and Differential Probes, Right: Facility to Assembling and Test Various Machines

4.7. Humanities and Social Sciences

The Faculty

1. Dr. Amrita Roy, PhD (Jawaharlal Nehru University)
2. Dr. Anoop George, PhD (IIT Bombay)
3. Dr Biswajit Sarmah, PhD (IIT Guwahati)
4. Dr. Manav Khaire, PhD (IIT Bombay)
5. Dr. Rahul Choragudi (Tata Institute of Social Sciences, Mumbai)
6. Dr. Reenu Punnoose, PhD (Newcastle University, U.K)
7. Dr. Senthilkumar V, PhD (IIT Madras)
8. Dr. Sudarshan R Kottai (IIT Hyderabad)
9. Dr. Sujatha G, PhD (University of Madras)

The Humanities and Social Sciences (HSS) at IIT Palakkad comprises a team of nine faculty members and fifteen PhD scholars who work on diverse research areas in Economics, Gender and Culture Studies, History, Linguistics, Philosophy, Political Science, Psychology and Sociology. We offer a range of elective courses for undergraduate and postgraduate engineering and science students as well as core PhD-level courses for our doctoral scholars which encourage critical thinking, create awareness of real world issues and enable a comprehensive understanding of topics from multiple perspectives. The courses on offer also include those that aim to hone the soft skills of students and initiate pertinent conversations on ethical practices in research, in the workplace and life in general. In the long run, we hope to launch postgraduate programmes within subject areas in the Humanities and Social Sciences and continue to engage in research at the intersection of subject areas within the HSS and between the HSS, science and technology.

Research Areas

- Economics: Development Economics
- Engineering Economics
- English: Gender and Culture Studies
- History: (History of Modern India, Environmental History, Agrarian History)
- Linguistics: Experimental Phonetics, Sociolinguistics, Phonological language acquisition
- Philosophy: Continental Philosophy, Phenomenology and Existentialism
- Political Science: Urban Studies, Urban Sociology, Public Policy, Social Policy Analysis, Housing Studies, Urban Planning
- Psychology: Mental Health among Marginalised Sections, Migration and Mental Health, Genders, Sexualities, Disabilities and Relationship Diversities, Public Health Ethics, Alternate Paradigms in Mental Health, Non-Humans and Mental Health, Community Mental Health, Qualitative Research
- Sociology: Economic Development and Social Change, Village Studies, Stratification/hierarchy, Sociology of Political Change, Caste and Public Policy, Ethnography

Research Areas Available for Admission in January 2025

- Phenomenology and Existentialism, Philosophy of Technology, Western Philosophy
- Experimental phonetics, Sociophonetics, Phonological acquisition
- History: (Environmental History, Agrarian History)

4.8. Mathematics

The Faculty

1. Dr. Arpan Kabiraj, PhD (IISc Bangalore)
2. Dr. Ashok Kumar M, PhD (IISc Bangalore)
3. Dr. G P Balakumar, PhD (IISc Bangalore)
4. Dr. Gopikrishnan Chirappurathu Remesan (IIT Bombay - Monash Research Academy)
5. Dr. Jaikrishnan Janardhanan , PhD (IISc Bangalore)
6. Dr. Jayanarayanan C R, PhD (ISI Bangalore)
7. Dr. Lakshmi Sankar K, PhD (Mississippi State University, USA)
8. Dr. Parangama Sarkar, PhD (IIT Bombay)
9. Dr. Rohith Varma PhD, (Chennai Mathematical Institute, Chennai)
10. Dr. Sarath Sasi, PhD (Mississippi State University, USA)
11. Dr. Srijan Sarkar, PhD (Indian Statistical Institute, Bangalore)
12. Prof. Varadharajan Muruganandam (IIT Kanpur)

The Department of Mathematics at IIT Palakkad is strongly committed to excellence in research and teaching. We envisage a period of fast growth leading to a strong and diverse Mathematics community at IIT Palakkad. A PhD programme in the Department of Mathematics was started in 2017. There are currently 23 PhD students and 03 MS (by Research) students working in the Department of Mathematics. Three PhD students have graduated.

Research Areas

- Functional Analysis
- Geometry of Banach spaces
- Operator theory
- Partial Differential Equations
- Nonlinear Analysis
- Several Complex Variables
- Algebraic Geometry
- Commutative Algebra
- Low-Dimensional Topology
- Numerical Analysis and Mathematical Biology
- Probability and Mathematical Statistics
- Information Theory and Statistics
- Harmonic Analysis

Research Areas Available for Admission in January 2025

- Nonlinear Analysis and Partial Differential Equations

4.9. Mechanical Engineering

The Faculty

1. Prof. A Seshadri Sekhar, PhD (IIT Madras)
2. Dr. Afzaal Ahmed, PhD (NUS Singapore)
3. Prof. Anand T. N. C., PhD (IISc Bangalore)
4. Dr. Anoop Akkoorath Mana, PhD (IISc Bangalore)
5. Dr. Arijit Hazra [SERB Ramanujam Fellow], PhD (University of Gottingen and Max Planck Institute for Biophysical Chemistry)
6. Dr. Buchibabu Vicharapu, PhD (IIT Bombay)
7. Dr. D. Chakradhar, PhD (NIT Warangal)
8. Dr. Dinesh Setti, PhD (IIT Delhi)
9. Dr. Ganesh Natarajan, PhD (IISc Bangalore)
10. Dr. Kanmani Subbu S., PhD (IIT Kanpur)
11. Dr. Kesavan D., PhD (IIT Madras)
12. Dr. Krishna Sesha Giri, PhD (IISc Bangalore)
13. Dr. K. V. N. Surendra, PhD (IISc Bangalore)
14. Dr. Nelson Muthu, PhD (IIT Bombay and Monash University)
15. Dr. Pramod Kuntikana, PhD (IIT Bombay)
16. Dr. Samarjeet Chanda, PhD (IIT Madras)
17. Prof. Santhakumar Mohan, PhD (IIT Madras)
18. Dr. Soumya Mukherjee, PhD (NIT Jamshedpur)
19. Prof. Sovan Lal Das, PhD (Cornell University, USA)
20. Prof. T Sundararajan, PhD (University of Pennsylvania, Philadelphia, USA)
21. Dr. Vineed Narayanan, PhD (IIT Madras)

The Department of Mechanical Engineering offers a 4-year undergraduate BTech. Programme, 2-year Masters' programme, and research (MS and PhD) programmes. The undergraduate curriculum of the stream mainly integrates fundamentals of mechanical sciences and engineering along with electives concerning allied and general topics including professional ethics. MTech at PG level is offered in Manufacturing and Materials Engineering emphasis on developing depth in both fundamental and applied aspects with inquisitiveness. The Mechanical Engineering department has three broad sub-disciplines – thermo-fluids, design and manufacturing. Research in the

thermo-fluids stream includes experimental and numerical heat transfer and combustion, laser diagnostics, thermal management for batteries and computational fluid dynamics. Faculty in the field of solid mechanics and design carry out research related to fracture mechanics, vibrations, robotics, granular mechanics and biophysics. Among the research areas in the manufacturing sub-stream are additive manufacturing, friction-stir welding and solid-state welding, tribology, super finishing and minimum quantity lubrication. Some of the current research projects include studies on soot modelling, studies of battery thermal management systems, modelling of adhesion in thin and soft structures, bio-inspired underwater vehicles, evaluation of cryogenic cooling for machining, rolling contact fatigue studies on bearing steels and micro electric discharge milling of metal matrix composites.

Research Areas

- **Thermo-Fluids Engineering**: Combustion/Propulsion Research, Engine Modelling/Control, Combustion and Laser Diagnostics, Combustion Modeling, Novel Laser and Optical Diagnostic Techniques, Computational Fluid Dynamics - Immersed Boundary Methods, Turbulence, Sports Aerodynamics and Mathematical Modelling, Experimental and Numerical Heat Transfer and Energy Systems, Heat and Mass Transfer, Inverse Problems in Thermal-Fluid Sciences, Interferometry, and Optimization, Renewable Energy, Experimental Fluid Mechanics and Heat Transfer, Thermal Management, Flow Metering, Refrigeration and Cryogenics, Computational Wave Propagation, Computational Electrodynamics, Applied deep learning.

- **Solid Mechanics, Design and Dynamics**: Continuum Mechanics, Fracture Mechanics, Theoretical and Applied Mechanics, Mechanics of Composites, Contact Mechanics of Thin Structures, Fracture and Elasticity, Non-linear Elasticity, Viscoelasticity, Constitutive Modeling, Lipid Bilayer Membrane, Robotics Motion Control, Mechanism Design and Analysis, Service and Field Robots, Mobile Robots and Manipulators, Rehabilitation and Assistive Robots, Underwater Vehicles and Manipulator Systems, Vibro-acoustics, Underwater acoustics, Acoustic metamaterials, Rotor Dynamics, Fatigue Life Estimation, Condition Monitoring, Stochastic Vibration

- **Materials Science and Manufacturing Engineering**: Ultra-precision Machining, Diamond Turning, Hybrid Machining, Deep-Hole Drilling, Non-Conventional Machining, Conventional Machining, Advanced Materials, Micro Manufacturing, Laser Surface Treatment, Additive Manufacturing and Composite Fabrication and Machining, Surface Engineering, Welding

Technology, Process modeling of welding and metal additive manufacturing processes, Industrial Tribology, Grinding, Advanced Finishing Technologies, Sheet metal forming.

Research Areas Available for Admission in January 2025

- **Thermofluids Engineering:** Refrigeration, Thermodynamics, Heat Transfer, Experimental Thermofluids, Computational Mechanics, Data Driven Engineering.
- **Solid Mechanics Design and Dynamics:** Solid Mechanics, Non-linear elasticity, Viscoelasticity, Constitutive Modeling, Impact Studies of Composite structures, Granular Mechanics, Continuum Mechanics, Vibrations and Acoustics, Mechanics of Composites, Fracture and Elasticity, Rotor Dynamics.
- **Materials and Manufacturing Engineering**B Welding, Wire Arc Additive Manufacturing, Modeling of Manufacturing Processes, Advanced Finishing Processes, Abrasive Machining Processes, Additive Manufacturing, Laser surface treatment, Micro Machining, Contact Fatigue and Tribology.

Exceptional MS or PhD research applicants meeting the appropriate criteria can be supported by the research fellowship from the following sponsored research projects funded by various agencies.

1. **Project Title: Mitigation of surface distress in bearing steel**

   Duration: 2 years, Project Investigator(s): Dr. Kesavan

   Funding Agency: ISRO Respond Basket

   Position: 1 MS(R) student or PhD student.
2. **Project Title: A Comprehensive Investigation of low rotational speed performance of External Gear Pump (AZPS): Identifying leakage gaps, failure mechanism and optimization,**

   Duration: 2 years

   Project Investigator(s): Dr. Pramod

   Funding Agency: Bosch Rexroth

   Position: 1 MS(R) student.

Facilities

Mechanical Engineering Department labs are equipped with a wide range of advanced tools and machinery, supporting a broad spectrum of engineering and material science research.

The lab houses mechanical testing equipment such as the **Fatigue Testing Machine**, **Impact Testing Machine**, **Universal Testing Machine (100 kN)**, and **Rolling Contact Fatigue Testing Machine**, which are crucial for evaluating material properties under different conditions. Precision machining capabilities are represented by the **Wire Cut EDM**, **Die Sink EDM**, **CNC Hybrid Micro Machine**, **Ultra-Precision Lathe**, and **Precision Grinding Center**, alongside surface preparation tools like the **Belt Grinding Machine**, **Polishing Machine**, and **Shot Peening Machine**.

Additive manufacturing is supported by the **L-PBF System (3D metal printer), Clay/Ceramic** and **Polymer 3D Printer**. The lab is also equipped for heat treatment with several **Muffle Furnaces**, a **Stir Casting System with Ultrasonic Cavitation**, and a **Compression Moulding Machine**. Metrology and surface analysis are handled using the **Surface Profilometer**, **Metallurgical Microscope**, **Vickers Hardness Tester**, and **Contact Angle Measuring System**. In addition, the lab features **Modular Production Systems**, **Laser Marker**, **Dynamometers (for Macro and Micro machining)**, **Virtual Reality System**, **Assembly Control Gear**, **Hydrodynamic Journal Bearings**, and **Engineering Drawing Kits** for design and simulation. The **IR Thermometers**, **Temperature Calibrator**, and **Precision Weighing Balance** ensure accurate temperature and mass measurements, while **High Vacuum Pumps**, **Water Purifiers**, **High-Temperature Muffle Furnaces**, and **Programmable Muffle Furnaces** support various experimental setups.

Other specialized equipment includes the **Universal Tribometer**, **TIG/MIG Welding Setup**, **Mini Robotic Vehicle Fabrication tools**, **Rolling Mill**, **Linear Manipulator**, **Underwater Manipulator**, and **Cartesian Parallel Manipulator**, enhancing the lab's capabilities for manufacturing, testing, and automation. Additionally, the labs have **Metrology Kits**, **Nuts and Bolts Kits**, **Three Types Kits**, **Making Master Kits**, and various **Kinematic Models** (Ackermann Steering Mechanism, Four Joint Link, Slotted Link Apparatus) for educational and prototype development purposes. With tools like the **Vernier Height Gauge**, **Bench Top Digital Multimeter**, **Ultrasonic Flow Detector**, **Assembly Shaft with Journal Bearings**, and **Assembly of Lever Shears**, the lab provides a comprehensive environment for advanced research in mechanical systems, materials science, and manufacturing.

The state-of-the art **Battery Thermal Management Test Facility**, **Thermal Environment Test Chamber Setup** for varied environmental testings, **Thermo Vaccum Chamber** for simulating space conditions, **Computerised Internal Combustion Engine Setup** for

Combustion Analysis and Performance Assessment, the **Year-Round Air Conditioning Test Facility**, **Temperature and Pressure Calibration Setups, Flow Metering and Calibration Test Setups, PLIF/ PIV Test Facilities for Advanced Combustion Diagnostics**, **Thermal Contact Conductance Measurement Facility** and the **Thermal Property Measurement Test Setups** are to name a few of the Thermofluids research level equipments.

In addition to existing capabilities, the department will soon feature advanced **FIST** (Fund for Improvement of S&T Infrastructure) facilities, including a **Micro/Nano Indenter** for high-precision hardness and material property testing at small scales, a **Femtosecond Laser Micromachining Center** for **Micro/Nano Fabrication**, and specialized setups for **Surface Modification** and **Characterization of Materials**. These upcoming facilities will significantly expand the lab's capabilities in micro/nano-scale research and material engineering.

Environmental Chamber

Thermo Vacuum Chamber

Stir Casting Machine

Metal 3D Printer

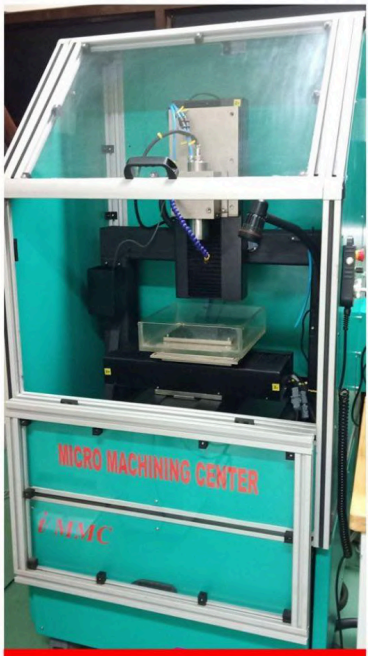
CNC Wire EDM

Wire Arc Additive Manufacturing

Hybrid Micromachining Center

Universal Tribometer

Precision Surface Grinding Machine



Micromachining Center

4.10. Physics

The Faculty

1. Dr Akshay Bhatnagar, PhD (IISc Bangalore)
2. Dr. Amit Kumar Pal, PhD (Bose Institute Kolkata)
3. Dr. Bibhu Ranjan Sarangi, PhD (RRI Bangalore)
4. Dr. Debarati Chatterjee (IISc Bangalore)
5. Dr. Jayakumar Balakrishnan, PhD (National University of Singapore)
6. Dr. Kusum Dhochak, PhD (TIFR, Mumbai)
7. Dr. Prithvi Narayan P, PhD (TIFR, Mumbai)
8. Dr. Projjwal Banerjee, PhD (University of Minnesota, Minneapolis, USA)
9. Dr. Soham Manni, PhD (Georg-August-Universitaet Goettingen, Germany)
10. Dr. Uma Divakaran, PhD (IIT Kanpur)
11. Dr. Vishwas V, PhD (JNCASR Bangalore)
12. Dr. Moumita Nandi, PhD (SINP Kolkata), Inspire Faculty
13. Prof Manoj Gopalakrishnan , Visiting Professor
14. Dr. Swaroop Sahoo, PhD (Colorado State University, USA)
15. Dr Mayarani M, PhD (IIT Madras), Inspire Faculty
16. Prof Vijayan, Honorary Professor

The Department of Physics, IIT Palakkad started functioning from August 2015, and has now grown into a vibrant part of the Institute with its creative and passionate teaching endeavours at the undergraduate and postgraduate level along with cutting-edge research components in the forefront of experimental and theoretical physics. There are currently 10 Faculty members, 2 Inspire Faculty, 1 Adjunct Professor, 1 Visiting Professor, 1 Honorary Professor and 2 Post-Doctoral Researcher in the Discipline, engaged in various research projects in several topical and multidisciplinary areas. In July 2017, the discipline started its dedicated PhD programme, and at present a total of 30 students are pursuing research. Besides its thriving research activities, the discipline also runs a two year M.Sc programme in Physics, and supports in training young Engineering undergraduate students in basic sciences.

Research Areas

- Theoretical Astrophysics
- Experimental Biophysics
- Experimental Condensed Matter Physics
- High Energy Physics and String Theory
- Statistical Physics

- Soft-Matter Physics
- Many-Body Physics
- Quantum Information Theory and Quantum Computation
- Non-Equilibrium Dynamics, Quantum Phase Transitions and Open Quantum systems

Research Areas Available for Admission in January 2025

- Theoretical & Computational Physics : Hydrodynamic Turbulence

Facilities

The discipline has at present a teaching Physics laboratory to cater the needs of UG and PG students and is equipped with state of the art experimental setups. The M.Sc. Physics laboratories are categorised by different themes, namely, Mechanics, Electromagnetism, Thermal Physics, Atomic Physics and Spectroscopy, and Electronics and Instrumentation. The M.Sc. Advanced Physics Laboratory has LN2 Cryostat, Scanning tunnelling microscope and Fluorescence Microscope which are used for teaching and research purposes. Different research equipment are installed in central facilities and individual labs.

Experimental Material Research Facilities

- Single crystal growth Facilities (High Temperature Programmable Chamber, tube and Gradient Furnaces, Quartz Tube sealing station, Centrifuge etc.)
- Thin Film Growth Facilities (Sputtering, Lithography, Glovebox inside class 100000 and class 10000 cleanrooms)
- Closed-Cycle Cryostat (Tmin = 300 mK, Bmax = 12 Tesla): Oxford VTI
- Rigaku X-ray Diffractometer
- SEM-EDS
- Raman Spectrometer (90 K - 600 K)

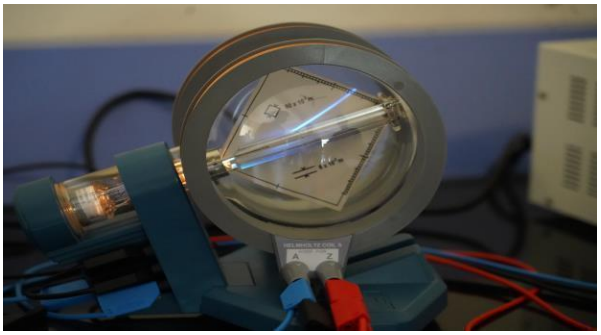
More details can be found here: https://cif.iitpkd.ac.in/

Computational Facilities

- Chandra-High Performance Computing Cluster (HPC) [64 compute nodes, each with a dual 12-core Intel processor. Each core runs at 2.2 GHz and has 4 GB of RAM per core. 100TB Disk space. The HPC is one of the first systems in India to use a 100 Gbps high-speed OmniPath interconnect from Intel.

Experimental Biophysics

- Epi-fluorescence microscope (Fully motorized microscope with Zero drift compensation stage, Phase contrast imaging)
- Confocal Imaging Facility (CIF).(with Hybrid Scanner, four Laser lines in the visible region, High sensitive Detectors, live cell imaging facility)



UG/ PG Lab of the discipline of Physics

4.11. Environmental Sciences and Sustainable Engineering Centre (ESSENCE)

Major themes

Vision:

Bring science, technology, and policymaking together to develop and demonstrate sustainable solutions for pressing socio-enviro-technical problems.

Mission:

1. Develop sustainable technologies and innovations using locally available resources in the areas of energy, water, food, agriculture, ecology, waste management, and pollution mitigation.
2. Evaluate the nature of technology and its social/environmental impacts concerning the human modification of the natural world.
3. Build and deploy computational resources to assess the impact of scaling up or developing new technologies on the three dimensions (economic, social, and environmental) of sustainability to appraise policy.
4. Facilitate skill development and entrepreneurship to aid the deployment and scaling up of sustainable technologies.
5. Collaborate with local communities to integrate and help sustain indigenous knowledge practices through language maintenance and revitalization.
6. Become a credible nodal centre for exchanging scientific ideas, research, and innovation and evaluating the impact of deploying sustainable technologies at the local, regional, and national levels.

The Faculty

Dr. Athira P.	Dr.Dinesh Jagadeesan	Dr. P Gangadharan	Dr. Sunitha Nayar
Dr. Arun Rahul S	Dr. Divya P.V.	Dr. M Sabarimalai Manikandan	Dr. Veena Venudharan
Dr. Deepak Jaiswal	Dr. Mintu Porel	Dr. Sarmistha Singh	Dr. R Venkataraghavan

Research Areas

ESSENCE is an interdisciplinary research centre and works in collaboration with other departments and centres at IIT Palakkad. At present, ESSENCE's thrust areas are sustainability assessment, agriculture, bioenergy, and water/wastewater management. You can learn more about the centre by visiting the webpage: https://essence.iitpkd.ac.in/

Research Areas Available for Admission in January 2025

- Carbon and Nutrient Recycling in Miyawaki Forest Stand
- Plant Physiology
- Geoinformatics
- Earth and climate science

Exceptional MS/PhD applicants meeting the appropriate criteria can be supported by MS/PhD fellowship from the following sponsored research projects funded by various agencies.

1. **Title of the project: Condition Assessment and River Basin Management Plan for Periyar**

   PI/CoPI: Dr. Deepak Jaswal (Co-PI)

   Project No :2024-216-CE-ATP-MOJS-SP

   Funding Agency : NRCD, Ministry of Jal shakti

2. **Title of the Project: Enhanced hydrological fluxes by using integrated hydrological model**
   PI/CoPI: Sarmistha Singh (PI)
   Project No: ISRO/RES/4/715/24-25
   Funding agency: ISRO

3. **Title of the project: Condition Assessment and River Basin Management Plan for Periyar**

   PI/CoPI: Dr. Subhasis Mitra (Co-PI)

   Project No :2024-216-CE-ATP-MOJS-SP

   Funding Agency : NRCD, Ministry of Jal shakti

Facilities

All the central research facilities (high performance computing cluster, central instrumentation facility, smart farming site, etc.) available at IIT Palakkad are used on the need basis. Additionally, ESSENCE houses instruments for measuring leaf gas exchange rates, soil carbon respiration, and plant canopy structure.

Academic Programme:

ESSENCE currently offers PhD/MS (by Research) programmes.

Website:

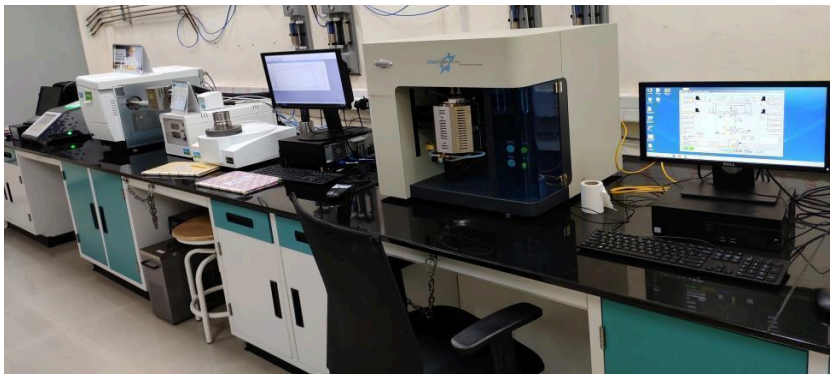
For further information, please visit https://essence.iitpkd.ac.in/

5. Central Research Facilities

5.1. Central Instrumentation Facility (CIF)

In 2019-2020, IIT Palakkad established the Central Instrumentation Facility (CIF) and the Central Micro-Nano Fabrication Facility (CMFF) to support high- quality research in design and development of functional molecules, materials and devices. These facilities maintain a high operational standard of sophisticated equipment. Functionally, the facilities in CIF & CMFF are grouped under the themes of Synthesis, Characterization and Fabrication. CIF houses sophisticated equipment for synthesis and characterization, while CMFF maintains a clean room and other facilities needed for the fabrication of devices at the micro and nanoscale.

The CIF houses a range of sophisticated analytical equipment capable of studying the physical, chemical, electrical, mechanical and magnetic properties of molecules as well as materials. The equipment are installed. Some of the characterization equipment in CIF are: Semiconductor Parameter Analyser, Vector Network Analyzer, Signal Analyzer, Analog, Microwave Signal Generator, Wire Bonder, Mixed signal digital storage oscilloscope, 64- channel Electroencephalograph (EEG) Data Acquisition System, High Performance Liquid Chromatography, Liquid Chromatography Mass Spectroscopy, Nuclear Magnetic Resonance Spectrometer, Raman spectrophotometer, X-ray diffractometer, Scanning Electron Microscope, Confocal Microscopy, PCB prototyping machine, Infrared spectrophotometer. CIF has also set up a high end unit for Materials Synthesis and Processing (MSP under CIF) where a range of sophisticated high temperature furnaces, arc melting furnace, ball mill, quartz tube sealing station are housed and maintained.



Sophisticated equipment of CIF in Ahalia Campus.

5.2. Central Micro-Nano Fabrication Facility (CMFF)

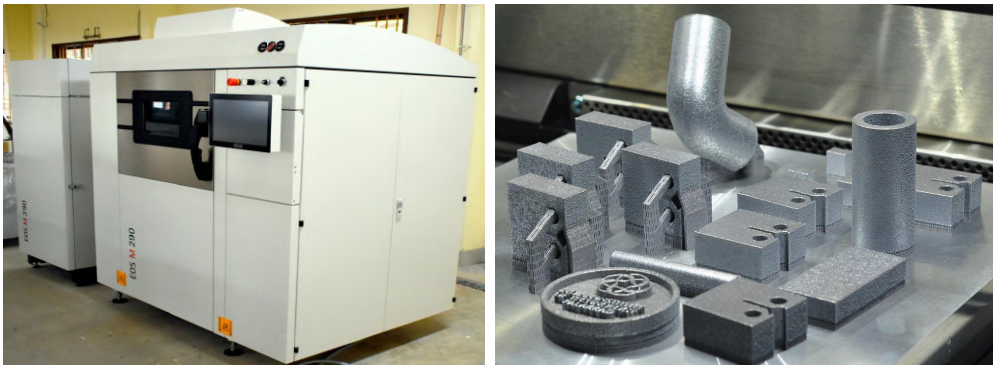
The Central Micro-Nano Fabrication Facility (CMFF) has class 100000 and class 10000 cleanrooms, well-equipped for fabrication of devices. The cleanroom houses two class 100 polypropylene fume hoods, a deionized water plant, an RF sputtering system, and a mask aligner. The RF sputtering system can deposit thin layers of metals and non-metals onto a substrate. The mask aligner can demarcate micrometer-scale patterns onto the substrate using photolithography. This system is capable of performing multilevel photolithography on top and bottom side of substrates, with minimum features in the sub-micron range. Realization of microstructures is possible using wet-chemical methods performed inside the fume hoods. The deionized water plant provides the high-resistivity water needed during the processing. Recently, we have also added an optical microscope, a three-port glove box, and a critical point dryer (CPD) to this facility.

Broadly, research is proposed in the areas including (but not limited to): (i) Design, fabrication and characterization of 2D spin devices (including GMR devices), heterostructures of 2D materials and perovskites; (ii) Design, fabrication and characterization of CMOS-compatible photodetectors; (iii) Fabrication and characterization of RRAMS, non-linear selector devices for RRAMS, and one-time programmable memories; (iv) 2D material-based MEMS sensors, and new strategies for design of MEMS-based structures that incorporate negative capacitance; (v) Design and characterization of GaN-based mmwave devices and circuits; (vi) Fabrication and characterization of Perovskite solar cells.

Central Micro-Nano Fabrication Facility

5.3. Central Facility for Materials and Manufacturing Engineering (CFMM)

CFMM houses advanced materials processing, testing and manufacturing processing facilities to support basic and applied research activities in various streams of engineering. It is an essential platform not only to compete intellectually with the rest of the world but also enables us to make ingenuine contributions relevant to our country in the growing field of materials processing, manufacturing of engineering components and products. This supports the research on materials processing that includes development of alloys and composites, manufacturing of components includes turbine & compressor parts, aerofoils, medical implants, actuators, medical scaffolds, machine tools, energy components, etc., and manufacturing of products includes robots, devices, unconventional machines, energy efficient vehicles, etc.



3D Metal additive manufacturing facility

5.4. High Performance Computing Cluster

The Chandra High performance computing cluster (HPC) provides a powerful computing platform for research in engineering and physical sciences. This system has been operational since June 2017. The HPC consists of 64 compute nodes, each with a dual 12-core Intel processor. Each core runs at 2.2 GHz and has 4 GB of RAM per core. The HPC is one of the first systems in India to use a 100 Gbps high-speed Omni Path interconnect from Intel. The system provides about 50 TFlops of computing power.

Chandra also accesses 100 TB of disk space setup as a parallel file system running Lustre from Intel.

The HPC is used by faculty, research staff and students at IIT Palakkad to investigate complex research problems in science and engineering. Some of the problems currently being studied are:

- Understanding and designing materials with novel physical properties by performing atomistic quantum mechanical simulations.
- Design of nanoscale transistors for next generation electronic applications.
- Design of novel bio-molecules with applications in medicine.
- Design of large structures such as bridges and buildings.
- Performing computational fluid dynamic simulations.
- Understanding the process of heat transfer in complex systems such as engines.
- Solving non-equilibrium dynamics in quantum Hamiltonians.

6. MS (by Research) and PhD admissions

6.1. Application

A candidate has to apply to a Department through the application portal.

6.2. Financial Assistance

Assistance will be as per Ministry of Education, Government of India norms. Fulltime Scholars admitted to MS (by Research) and PhD programme are eligible for the Half-time Teaching/Research Assistantship (HTRA) for which:

1. They should work for 8-10 hours per week for the Institute to earn this assistantship. The work would normally involve assistance in teaching/research, and will be assigned by the Institute.
2. Renewal of assistantship every semester will be contingent on enrolment, satisfactory progress in research work and good performance during the preceding semester in the discharge of responsibility as teaching/ research assistant.

Other scholarships like UGC- JRF, CSIR-JRF, ICMR, ICAR & AICTE etc. may also be available for those who have qualified for these schemes and get admission and the amount of fellowship will be as per the norms of the funding agency.

6.3. Minimum Eligibility

6.3.1. MS (by Research)

The minimum educational qualifications for admission to the MS (by Research) degree are as follows:

1. Candidates with a four year Bachelor's degree in Engineering/Technology/Sciences or a Master's degree in sciences with a valid GATE score in relevant discipline.
2. Candidates with a good academic record, having memberships in professional bodies, approved by the MoE/UGC/AICTE, are also eligible for admission to theMS (by Research) programme of their parent discipline provided they have a valid GATE score and have passed both part A and part B of the membership examinations.
3. Candidates who have qualified for the award of four year Bachelor's degree in Engineering/Technology/Sciences from a Centrally Funded Technical Institute (CFTI) with an exceptionally good academic record in an eligible discipline provided he/she has a minimum CGPA of 8.0 (7.5 for OBC- NCL and 7.0 for SC/ST/PwD) on a 10.0 point scale.
4. Candidates with a four year Bachelor's degree in Engineering/Technology/Sciences or a Master's degree in sciences are eligible to apply forMS (by Research) "Project-NHTRA" category and will be funded by a project administered via ICSR. The candidate applying under this category does not need to have a valid GATE score to pursue MS, provided the funding agency for the project has no requirement of GATE for hiring of staff under the project. Such candidates are not eligible for HTRA funding under any circumstance.

Research Areas Available for Admissions in January 2025 under "Project-NHTRA" category

Exceptional applicants meeting the appropriate criteria are eligible to apply for MS (by Research) admission under "Project-NHTRA" category in the following department/centre only.

- Electrical Engineering (Area: Signal Processing and Imaging and Control and Robotics)
- Biological Sciences and Engineering (Area: Diagnostic Sensor Device Development)
- Mechanical Engineering (Area: Thermo-fluids Engineering)

6.3.2. PhD

The minimum educational qualifications for admission to the PhD programme of the Institute are as follows:

PhD in Engineering

1. Candidates with a Master's degree in Engineering/Technology or a Master's degree by Research in Engineering/Technology with a good academic record.
2. Candidates with Master's degree in Sciences with a good academic record and of exceptional merit are eligible for the relevant Engineering discipline. They should have a valid GATE score or UGC / CSIR-LS & JRF/ NBHM or equivalent qualification in the relevant area tenable for the year of registration.
3. Candidates who have qualified for the award of four year Bachelor's degree in Engineering/Technology/Sciences with an exceptionally good academic record and valid GATE score in an eligible discipline will be considered for direct admission to PhD
4. Candidates who have qualified for the award of four year Bachelor's or integrated Master's degree in Engineering/Technology/Sciences from a Centrally Funded Technical Institute (CFTI) or 2 year MSc from CFTIs (entry through JAM only) with an exceptionally good academic record in an eligible discipline provided he/she has a minimum CGPA of 8 (7.5 for OBC- NCL and 7.0 for SC/ST/PwD) on a 10.0 point scale.

PhD in Sciences

1. Master's degree in Engineering/Technology/Sciences/Medical /Pharma/Veterinary Sciences/Allied Health Sciences with good academic record and valid GATE score or UGC/CSIR-LS&JRF /NBHM/INSPIRE/ICMR/JEST or other similar National Level Fellowships or equivalent qualification tenable for the current financial year in the relevant area.
2. Candidates who have qualified for the award of four year Bachelor's degree in Engineering/Technology/Sciences with an exceptionally good academic record and valid GATE score in an eligible discipline will be considered for direct admission to PhD
3. Candidates who have qualified for the award of four year Bachelor's or integrated Master's degree in Engineering/Technology/Sciences from a Centrally Funded Technical Institute (CFTI) or 2 year MSc from CFTIs (entry through JAM only) with an exceptionally good academic record in an eligible discipline provided he/she has a minimum CGPA of 8 (7.5 for OBC- NCL and 7.0 for SC/ST/PwD) on a 10.0 point scale.

PhD in Humanities and Social Sciences

1. Master's degree in Humanities with good academic record and valid GATE score or UGC-NET/JRF or other similar National Level Fellowships or equivalent qualification tenable for the current financial year in the relevant area.
2. Master's degree in Engineering/Technology/Sciences with exceptionally good academic record with a valid GATE score.
3. Candidates who have qualified for the award of four year Bachelor' degree in Engineering/Technology/Sciences with an exceptionally good academic record and a valid GATE score will be considered for direct admission to PhD
4. Candidates who have qualified for the award of four year Bachelor's or integrated Master's degree in Engineering/Technology/Sciences from a Centrally Funded Technical Institute (CFTI) or 2 year MSc from CFTIs (entry through JAM only) with an exceptionally good academic record in an eligible discipline provided he/she has a minimum CGPA of 8 (7.5 for OBC- NCL and 7.0 for SC/ST/PwD) on a 10.0 point scale.

6.3.3. Institute staff members or Research Scholars under External Registration

For MS/PhD Research Scholars in these categories, the minimum educational qualifications are the same as prescribed for full time research scholars. However, a valid GATE score or CSIR / UGC JRF or Lectureship / NBHM or equivalent qualification as applicable for regular full time research scholars shall not be required in these cases.

Candidates who are **sponsored by and employed in the parent industry/organisation having R&D facilities and recognized by DSIR (or IIT Palakkad, or from national laboratories and CFTIs** are only eligible for MS (by Research)/PhD under external registration category. List of Scientific and Industrial Research Organizations (SIROs) Recognized by DSIR is available in this link.

List of institutions other than CFTIs, DSIR recognized organizations and National Laboratories, recognized by IIT Palakkad for external registration are available in Appendix - 5.

Research scholars under the category will normally carry out part or all of his/her research work in the industry / organization / national laboratory employing the scholar under the supervision of a co-guide employed in the same organization and a guide at IIT Palakkad. The co-guide should have a PhD degree in

Engineering/Technology, in the absence of which a research coordinator belonging to the parent organisation should be designated.

6.4. Selection Procedure

Eligible candidates possessing the minimum educational qualifications (as given in section 6.3) and satisfying additional and stiffer criteria set from time to time, will be called for an interview and/or test by the Selection Committee.

All applicants are required to upload a statement of purpose (SOP) in support of their application in pdf format in the research admission portal.

1. SOP should list research areas in the order of preference.
2. SOP should not exceed 500 words.
3. SOP should be submitted in pdf format.

The applications of foreign nationals may be considered with or without a personal interview / test.

Based on the academic record and the performance of the candidates in the interview and/or test, the Selection Committee will recommend to the Chairman, Senate the names of candidates found suitable for admission.

6.5. Interview

Departments will communicate the details about the interviews and written test, if any, to the shortlisted candidates.

6.6. Reservation of Seats

Reservations are applicable to SC/ST/OBC-NCL/EWS/PwD candidates as per Govt. of India rules.

6.7. Verification of certificates

Candidates joining MS/PhD programme in July-December/January-June session have to submit their original mark/grade sheets along with provisional certificates at the time of admission. They should also produce their required degree certificate for having passed the qualifying examination on or before the academic year 2023-24 for January 2025 Admission.

The candidate should submit the following original documents for verification at the time of interview/admission:

1. Printed copy of application submitted.
2. Offer of admission.
3. Aadhar No.
4. First page of SSLC/SSC/Matriculation certificate
5. Degree certificate/Provisional/Course completion certificate / Grade Cards/Mark sheets of all semesters beginning from first degree towards proof of qualification.
6. Original GATE Score Card/UGC-JRF/NET/CSIR-JRF/DAE-JEST or other fellowship award letter.
7. Copy of GATE score or UGC - JRF/NET/CSIR/ DAE-JEST or other fellowship award.
8. Project coordinators certificate in the prescribed format and a copy of project appointment letter in the case of Project Associate if already appointed.
9. SC/ST/OBC-NCL community certificate for the candidate belonging to SC/ST/ OBC- NCL category issued by the respective State Government. OBC-NCL scholars have to bring a Non-creamy layer community certificate valid at the time of admission.
10. Certificate proving EWS category, if applicable.
11. Authorized Doctor's Certificate with disability descriptions in the case of the candidates under the Person with Disability (PwD) category.
12. Relieving order/Resignation acceptance letter from the employer in the case of the full time candidates, if employed, except the candidates selected under IITPKD Staff scheme.

In addition to the above documents, the External Registration candidates need to produce the following from their employer:

1. Research Coordinator/Co-guide's Consent letter
2. Copy of Research Coordinator's Degree certificate
3. NoC/Relief from the present employer

The above documents have to be submitted in the prescribed format as given in the Appendices at the end of the Brochure.

Second class TA for journey by train from the station nearest to residence to Palakkad and back will be paid to candidates who appear for test/interview. Please bring the

ticket for claiming it. The candidate will also need to give a bank account number to which the payment can be made.

Institute has limited hostel facilities (only cots and no beddings) on campus for applicants, **which will be allotted on first-request first-serve basis**.

7. Fees, Deposits and Refund Policy

7.1 Fees and Deposits(For Even Semester 2024-25)

S. No.	Particulars	MS	PhD
A. ONE TIME FEES			
1	Admission Fee	300	300
2	Grade Card / Thesis Fee	500	1,000
3	Provisional Certificate	150	150
4	Alumni Life Membership Fee	1,500	1,500
5	Modernization Fee	300	300
6	Student Welfare Fund	700	700
7	Publication Fee	250	250
8	Institute Caution Deposit	1,000	1,000
9	Library Caution Deposit	1,000	1,000
10	Convocation Fee	2,000	2,000
	Sub-Total	**7,700**	**8,200**
B. INSTITUTE FEES			
1	Tuition Fee #	2,500	2,500
2	Examination Fee	500	500
3	Registration - Enrollment Fee	300	300

4	Hostel Seat Rent *	6,500	6,500
5	Electricity, Water and SWD Charges *	1,200	1,200
	Sub-Total (for day scholars)	**3,300**	**3,300**
	Sub-Total (for hostellers)	**11,000**	**11,000**
C. ONE-TIME HOSTEL FEES			
1	Hostel Caution Deposit *	**3,500**	**3,500**
D. STUDENTS' SECTOR FEES & ADVANCE DINING CHARGES			
1	Medical Insurance (revised every semester, exact amount may vary)	1,000	1,000
2	Wellness Fees (revised every semester as per the actuals)	1,200	1,200
3	Gymkhana Fee (revised every year)	1,600	1,600
4	Establishment A	5,500	5,500
5	Hostel Admission Fee *	200	200
6	Establishment B *	1,500	1,500
7	Advance Dining Charges *	28,500	28,500
	Sub-Total (for day-scholars)	**9,300**	**9,300**
	Sub-Total (for hostellers)	**39,500**	**39,500**

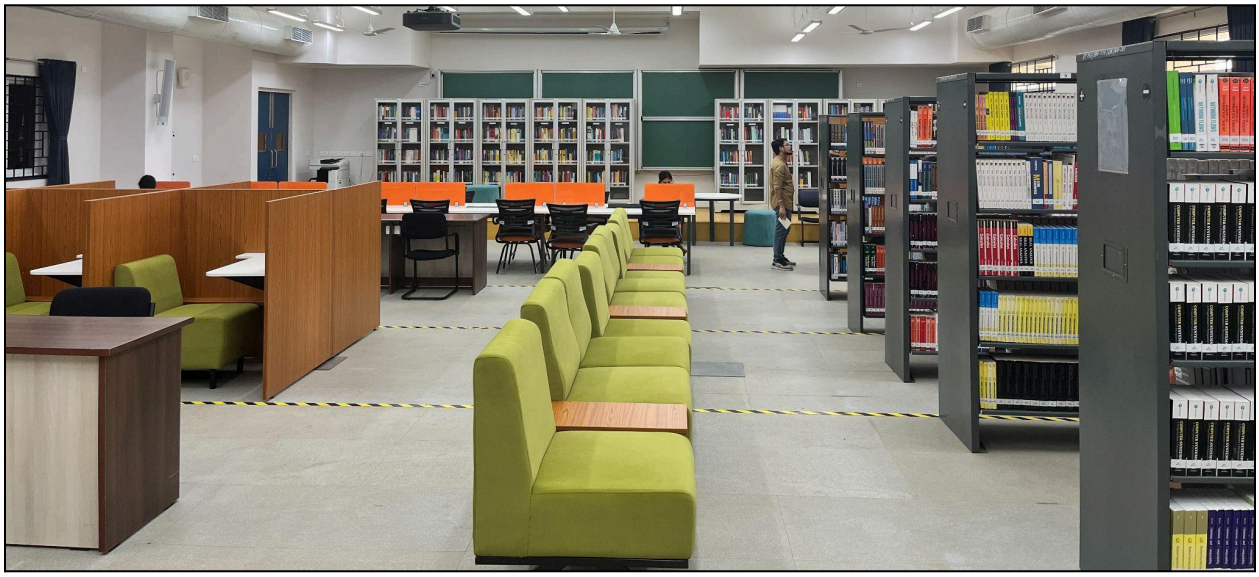
** For hostellers only* **# Tuition fee is waived for SC/ST students**

Hostel rooms are allotted only on a shared, first come first serve basis, **subject to availability**. If the candidate wishes to be a day scholar, he / she should register his or her name in the Office of the Dean Students and obtain a day scholar certificate immediately after the admission.

7.2 Refund Policy

If a candidate withdraws his/her admission before the official joining, the amount paid by him/her will be refunded after deducting the administrative charges of Rs.2,000/-. Once the student is admitted, only the caution deposits will be refunded.

8. Institute Library



As the informatics centre of the Institute, the Central Library provides an enjoyable learning experience with a carefully developed collection of books, journals, standards, magazines, newspapers, and a wide range of online resources. The library also stores collections of audio-visual materials such as CD-ROMs, scientific kits, etc. The library opened its doors to students, faculty, and staff in August 2015 with a collection of 700 printed books (textbooks, references, popular sciences, and literature), which has grown to more than 8300+, and a number of e-books have also been added in the past nine years. Based on the requirements of researchers, the library has subscribed to about 8900+ e-resources for its users. The library also has the support of the national consortium E-Shodh Sindhu (INFLIBNET) to fulfil the maximum journal requirements. The operations of the library are fully computerised and enabled by the RFID system to ensure fast and secure circulation activities. The RFID-based kiosk provides self-check-in and self-check-out of books. The library is under a 24x7 CCTV surveillance system for security. The library is also equipped with Wi-Fi and a LAN facility for unlimited high-speed internet access. Online facilities of the library are available 24x7x365 days for its registered users. Users can renew and reserve books through the Online Public Access Catalog (OPAC) at any time and from anywhere. The library also renders services such as reference and consultation, as well as updating users with current awareness services. The users of the Central Library of IIT Palakkad are also registered with the National Digital Library, sponsored by the Ministry of Education (MoE) and coordinated by IIT Kharagpur. To learn more about library, please visit https://lib.iitpkd.ac.in/.

9. Career Development Centre

The Career Development Centre (CDC) of IIT Palakkad employs significant efforts to refine the capabilities, personality and work readiness of students with the help of placement training and career preparation workshops. In order to facilitate better career opportunities, CDC constantly engages with industry through internships, industry visits, Industry-Academia conclave and also by hosting industry experts at the campus. A combination of rigorous yet sufficiently flexible curriculum prepares the students for the challenges in a competitive industrial environment.

IIT Palakkad witnessed a perfect culmination of the campus placement year after year in which several offers were received from coveted MNC's with excellent profiles, as desired by the students. The CDC at IIT Palakkad dominated the peer IITs on account of the highest percentage of job offers received by students. In addition to these, several PSUs visit the campus for recruitment each year.

The statistics given below give a quick glimpse of the campus placement

Batch	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Batch Size	106	163	251	293	325
No. of students registered in the CDC portal for placement	82	115	193	211	204
No. of offers	87	120	208	206	183
No. of students placed	74	97	176	190	152
No. of Companies participated in the campus process	70	110	215	158	162
Placement percentage (based on No. of Students Placed)	90	84.34	91.19	90.05	74.51
No. of PPO's (pre-placement offers)	15	6	26	38	22
Average CTC INR (in Lakhs)	9.93	11.42	13.93	13.95	13.89

Salary range INR (in lakhs) per annum	5.04 - 21.3	3.3 - 31.59	3.6 to 120	6.0 - 46.15	6.0 - 47.12

Key Placement Highlights(2023-24):

- 6 international offers received to 6 B.Tech Computer science students
- Highest CTC of INR 47.12 lakh
- The average CTC is 13.89 LPA
- Turing has offered the maximum number of offers which is 13
- 22 Pre-Placement offers.

Some notable companies which offered employment and internship are Turing, MathWorks, AMD, Texas Instruments, Arista Networks, Strand Life Sciences, Accenture Japan, Achnet Inc, Air India, Manappuram, HCL, L&T, ZS Associates, HPE, Maruti Suzuki, Sprinklr, MAQ Software, Infosys, Itron, Intel, Synopsis, Nation with Namo, SEDEMAC Mechatronics, Indexnine, Versa Networks, Wabtec, William O'Neil, etc.
The centre is functional under a Professor's In-Charge, the Training and Placement officer (TPO) and the assistant Training and Placement officer (ATPO) is dedicated to grooming the students.

10. Hostel Facilities

IIT Palakkad houses six hostels: four in the tranquil Nila Campus and two in the serene Sahyadri Campus. Students are provided with double/triple sharing accommodation in Nila Campus, while rooms at Sahyadri Campus are either single or triple occupancy rooms. Both cases, rooms are allotted subject to availability.
Our hostels are equipped with well-appointed rooms, water heaters, RO-based drinking water systems, heavy-duty washing machines, and both WiFi and LAN network connections, ensuring convenience and connectivity. Additionally, a spacious dining hall, a well-equipped recreational area, an indoor games area, and a fitness centre are readily available for leisure and physical activities. Each room is equipped with either WiFi or LAN connectivity, offering seamless online access. Additionally, common rooms in every hostel provide a space for relaxation, equipped with a television, newspapers, and a selection of magazines chosen by the student body.

11. Wellness Hub

Institute Counselling services: A professional counselling service (Mitra) has been set up in order to ensure that the students receive help when they face social/emotional issues that require a professional approach.
The services of three counsellors (2 Female & 1 Male) who are experienced Clinical Psychologists, are available to the students all the time. Apart from this,YourDost- the online counselling services are also made available to the students. There are trained student volunteers on campus to provide peer support as well.

Life skill classes: Students are given a course in life skills to help them cope with stress, improve communication skills and manage conflicting objectives. This outbound training, conducted by experts, provides the students with a platform to discover new friends and develop new bonds. It enables them to come out of their shells and mingle with others. They are also taught the art of forming well-knit teams on whom they can lean when in need, without hesitation. This course is mainly aimed at developing interpersonal relationships, building confidence, and making the students comfortable while facing the public, interview boards and so on.

Health care: IIT Palakkad has an outpatient clinic with a medical officer, staff nurse and 24 hours ambulance services. The students are covered by a comprehensive medical insurance scheme for a nominal yearly subscription. IIT Palakkad has MOUs with Ahalia Diabetes Hospital, Athani Hospital, Malabar Hospital, Manomitra, Avitis, Palakkad Institute of Medical Sciences, Lakshmi Hospital, Trinity Eye Hospital and Thangam Hospital for cashless medical attention. Students can also go to the hospitals of the Ahalia Foundation for treatment as outpatients. Institute Clinic is operational in the Nila campus.

Sports facilities: IIT Palakkad is continuously improving its sports and games facilities. Good facilities exist for football, volleyball, basketball, table tennis, badminton and cricket. There is a resident Physical Training Instructor in the campus, who trains students in different games, physical fitness, weight lifting, etc. and takes care of the Institute gym. Other coaches are hired as and when needed.

Anti-ragging measures: The motto of the Institute is zero tolerance to ragging. The students and parents are sensitised to this aspect through written documents and posters. A structured mechanism has been put in place to monitor ragging related issues and meet out the most stringent punishment to the wrong-doers, and enforce the anti-ragging regulations in letter and spirit.

APPENDICES

Appendix – 1

[To be submitted at the time of Admission]

Admission to PhD/MS programme under External Registration Scheme at IIT Palakkad

Proforma for Relieving Certificate

Shri/Smt/Kumari employed as…… …….. ……. is granted leave for 20 weeks (140 days) commencing from…… to ……. and is relieved of his/her duties with effect from…… to ……..… to enable him/her to pursue MS/PhD Research programme under External Registration Scheme in August /January semester at the Indian Institute of Technology Palakkad, Kerala – 678623 as per their offer of admission letter No…….Dated ……..

Date :

Signature of the Officer with name and address of the Organization

Office Seal

Appendix – 2

[To be submitted at the time of Interview]

Certificate from the Employing Organization for external registration of their employees in PhD/MS programme of IIT Palakkad

The application of…..…….……working as…..... .....in…..... since …..…….. is herewith recommended and forwarded for admission under External Registration Scheme of the Indian Institute of Technology Palakkad for PhD/MS Research programme in the Department of ……

1. This organization has adequate facilities for carrying out the research indicated by the applicant and if he/she is selected, these will be made available to him/her till the completion of the programme.

2. The applicant will be deputed/given leave for the duration of his/her residence period at IIT Palakkad.

3. Facilities will be made available to the Co-guide to supervise the work of the applicant and to attend the meetings at IIT Palakkad when necessary.

4. Till the completion of his/her research programme, the applicant will not ordinarily be transferred to another unit or place which may impede his/her work under the scheme.

   If such a transfer is necessary, IIT Palakkad will be informed within a month of such transfer. We understand that continuing registration will depend on IIT‟s decision in this regard, taking into account all the relevant factors.

5. We note that the facilities of the Institute will be made available to him/her for carrying out the work and that there will be no separate charge (other than tuition fees payable by the candidate) for the use of laboratory, library and other facilities.

6. No part of the work carried out in fulfilment of the Research programme will be utilized commercially or for applying for a Patent without the approval of Indian Institute of Technology Palakkad and other than on terms mutually agreed to by IIT Palakkad and this organization.

Date:

Signature of the Officer :

Name and Designation:

Postal address of the Organization :

Seal of the organization/Institution

Appendix - 3

Particulars of Research Co-ordinator for students under External Registration Scheme

In addition to being in a position to ensure technical and logistic support to the scholar in his/her research work in the organization, the Research Co-ordinator must have a PhD degree and adequate professional experience in the relevant field. He/She will be an invitee to the Doctoral Committee/General Test Committee meetings at IIT Palakkad.

Details of the Research Co-ordinator

1. Name (in block letters) :

2. Designation :

3. Academic qualifications :

4. Membership of Professional Societies :

(Please attach a detailed CV, with qualifications, work experience, and list of publications of the Resesarch Co-ordinator) Certificate from the Research Co-ordinator

This is to state that in the event of Mr. /Ms._____ of this organization being selected for PhD /MS (by Research) programme in the Department of under the External Registration Scheme of IIT Palakkad, I agree to be the Research Co-ordinator and I shall extend all possible facilities to enable him/her to carry out his/her research towards the completion of the programme.

Date: Signature of Research Co-ordinator

Appendix - 4

List of CFTI Institutions

1. INDIAN INSTITUTES OF TECHNOLOGY (All IITs)
2. INDIAN INSTITUTES OF MANAGEMENT (All IIMs)
3. INDIAN INSTITUTE OF SCIENCE (IISc), BANGALORE
4. INDIAN INSTITUTES OF SCIENCE EDUCATION AND RESEARCH (IISERs)
5. INDIAN INSTITUTES OF INFORMATION TECHNOLOGY (IIITs):
6. NATIONAL INSTITUTES OF TECHNICAL TEACHERS "TRAINING AND RESEARCH (NITTTRs)
7. NATIONAL INSTITUTES OF TECHNOLOGY (All NITs)
8. OTHER CENTRAL INSTITUTIONS
    a. National Institute of Advanced Manufacturing Technology (NIAMT), Ranchi
    b. School of Planning & Architecture (SPA), New Delhi
    c. School of Planning & Architecture (SPA), Bhopal
    d. School of Planning & Architecture (SPA), Vijayawada
    e. Indian Institute of Engineering Science and Technology (IIEST), Shibpur
    f. Central Institute of Technology, Kokrajhar
    g. Sant Longowal Institute of Engineering & Technology (SLIET), Longowal, Punjab
    h. North Eastern Regional Institute of Science & Technology (NERIST), Itanagar
    i. Ghani Khan Choudhury Institute of Engineering & Technology(GKCIET), Malda

Appendix - 5

List of institutions other than CFTIs, National Laboratories, recognized by IIT Palakkad for external registration

1. CWRDM (Centre for Water Resources Development and Management)
2. National Transportation Planning and Research Centre (NATPAC)
3. Maccaferri Middle East LLC, UAE
4. GE India Industrial Private Limited (GE Research), Bangalore