National Institute of Technology Silchar

Silchar – 788010, Assam.

Advertisement for IPDF admission for Summer Session 2026

No.: Dean (RC)/IPDF/02/2026-27 Date: 26.05.2026

Applications are invited for admission into **Institute Post-Doctoral Fellowship (IPDF) programme** in the following departments with the area / specializations as mentioned in the table for the Summer session 2026.

Department	Area of Research
Civil Engineering	• **Transportation Engineering:** Traffic Engineering, Transportation Planning, Travel Demand Forecasting, Concrete pavement, Volarization of waste materials, microstructural analysis, Asphalt mix, Waste materials, microstructural analysis. • **Structural Engineering / Structural Dynamics & Earthquake Engg:** New Concrete Materials for Sustainable Infrastructure, Nanomaterials, Recycled Aggregate Concrete, Fiber Reinforced Concrete, Hybrid soil modeling; Base Isolation; FE Modeling of Dam, etc; Liquefaction; Earthquake Early Warning; Machine Learning; Condition Assessment of Structure; App Development; Evaluation of relevant IS code; Geotechnical; Structure; Earthquake Engg., Risk and Resilience of Critical Infrastructure Systems , Physics informed Machine Learning in Structural Engineering, Structural Engineering, Composite Structures, GFRP Pultruded Profiles, Steel Structures, Lightweight structures, fire behaviour of structures, Timber and Bamboo-based Structures, Fracture Mechanics, Ground Response Analysis, Vibration Control of Structure using Passive system, Behaviour of Base Isolated building with new isolator, Risk and Reliability, Optimisation of Performance of Structure under uncertainty, Structural Health Monitoring, Vibration Control, Seismic Retrofit, Concrete technology, Structural Dynamics and Vibration Control, Functionally graded material and composite material, Machine learning in structural engineering, Turbulence modelling. • **Geotechnical Engineering:** Ground Improvement, Soil-Structure Interaction, Dynamics of Improved Soil, Transportation Geotechnics, Slope Stability Analysis, Analytical and Numerical Modeling, Application of Image Processing in Geotechnical Engineering. • **Water Resources Engineering / Environmental Engineering:** Hydrology & hydro-climatology, Homogeneous clustering, Climate change impact assessment, Downscaling of climate variables and Uncertainty quantification, Coastal Engineering, Remote Sensing and GIS applications, Offshore Engineering, Water and wastewater treatment, Industrial waste management, Adsorption, River health monitoring.
	• **Design**. Vibration and rotordynamics, vibration energy harvester, biomedical system design and analysis, design and control of micro and macro mechatronics systems, mechatronics systems and energy harvester, analysis, design, and control of mechatronics systems, additive manufacturing, powder fabrication, robotics and control, mechanism, parallel manipulator, compliant mechanism, sensor and actuator, 3d printing mechanism, lower limb rehabilitation robotic devices, underwater robotic manipulator, bionic prosthesis, mobile robotic manipulator, shape memory alloy based soft robotics, kinematics and dynamics of the robotic system, planar and spatial parallel manipulators. vehicle manipulator robotic system, bioscience/ biotechnology/ bio- mechanics, modelling and development of expert system for communicable and non-communicable diseases, augmented/ virtual reality, ai / ml based mechanical design & manufacturing, soft computing, vibration analysis, machine dynamics, condition monitoring of dynamic system, biomedical system design and analysis, energy harvesters designed for biomedical applications, tribology of bearings..

Mechanical Engineering	• **Manufacturing Sciences**. Advanced (Non-traditional) machining, surface modification through thin films coating & heat treatment, tribology of bearing, laser welding, application of soft computing techniques in manufacturing, manufacturing process modelling & optimization, artificial intelligence (ai) and machine learning (ML) application in manufacturing, multi-criteria decision making (mcdm) techniques, welding technology, nontraditional optimization tools, vibration isolation using additive manufacturing, machine fault diagnosis and prognosis, machining, electro- deposition, product development, dissimilar welding of materials, welding for biodevices, corrosion science, thin film deposition, sheet metal joining and riveting, metal forming/joining, nano materials, unconventional machining, micromachining, hydrophobic films and filtration membranes, modeling of abrasive machining and finishing processes, digital manufacturing. • **Materials Engineering**. Hybrid multiscale laminated composites, bio-composites, self-healing composite materials and frp laminates, max phase synthesis, 2D nanomaterial synthesis and functionalization, material selection, material synthesis and characterization, metal matrix composites, surface coatings, hydrophobic/hydrophilic coating, Joining technology, Nanocomposites, FRP composites, functionally graded materials, smart, deployable structures, phase change materials, encapsulation technology, additive manufacturing, tribology, 4D printing of SMP, synthesis and characterization of metal matrix composites (MMC) through powder metallurgy (PM), molecular dynamics, uncertainty quantification, digital twin, metamaterials, development and synthesis of polymer nano composites, hybrid composite materials, energy materials and management, fatigue and fracture behaviour of materials, machining of composite materials, Smart Adhesives and their joining, Surface engineering and functionalization, 3R Composites and vitrimers. Energy- efficient building materials, Sustainable materials for coatings, Fabrication of Nanopowder for Additive manufacturing, Additive manufacturing of special structures and metal components, Graphene and coating-based sensors. • **Thermal Engineering**. IC engine combustion, computational fluid dynamics, bio fluid dynamics and heat transfer, magneto hydrodynamics, microchannel flow, porous media flows, droplet dynamics, microfluidics, fabrication of microfluidic devices, wettability, multiphase flow, non-newtonian fluid mechanics, instability analysis, natural convection, thermal protective clothing, passive cooling methods, boiling heat transfer, heat transfer, micro and macro scale heat transfer, phase change materials and encapsulation technology, atomization and spray, turbulence modeling in high-speed flows, shock-boundary layer interaction, computational combustion, drag and heat reduction problem of hypersonic re-entry vehicles, aerodynamics. • **Renewable Energy** Green hydrogen production, carbon capture and utilization (CCU),synthetic fuels (e-fuels), waste to energy, energy storage technologies, energy harvesting, biofuel, solar thermal energy, solar passive heating systems, machine learning based meta modeling of renewable energy systems solar passive systems for net-zero building, hvac and building information modeling (BIM) for thermal performance management, design and development of vertical axis wind turbines , site and application specific tailoring of hybrid renewable energy systems, , battery, fuel cell, micro/pico water turbines, ocean renewable energy, ocean thermal energy conversion, wind energy system, performance study of oscillating water column, supersonic combustion, scramjet.

Electronics and Communication Engineering	• **Semiconductor and Nano Technologies** Micro/Nanoelectronic Devices, Circuits & Systems Nanotechnology & Photonics Advanced Semiconductor Devices & Memory Technologies Analog, Digital & Mixed-Mode VLSI Design, Embedded Systems • **Intelligent Microsystems & Energy Technologies** MEMS/NEMS Solar Photovoltaics & Energy Harvesting Robotics & IoT • **Communication and Networking Technologies** 5G/6G & Beyond, RF, THz, and Millimetre-Wave Systems Antennas, Microwave Engineering & Metamaterials Wireless, Cognitive Radio & Sensor Networks Green, Optical & Massive/Cooperative MIMO Communications • **Intelligent Signal and Information Processing** Signal, Speech, Image & Video Processing Biomedical Signal and Image Processing Computer Vision & Medical Imaging Machine Learning & Soft Computing
Computer Science and Engineering	• Artificial Intelligence, Machine Learning, and NLP • Speech Processing • Image Processing • Mathematical Imaging • Digital Geometry • Wearable Sensor Data Analysis • Computer Network • Distributed Computing • Optimization • Security • Cellular Network (5G/6G). • Quantum Computing
Electronics and Instrumentation Engineering	• Process control, Automation, Control systems • Biomedical Systems/ Engineering/ Instrumentation-Control, Assistive technologies in healthcare, Gait analysis, Drug delivery process /technologies. • Sensor Development and Sensing Technology • Communication Systems and technology. • Signal and Image Processing for various applications • Renewable Energy Systems, Energy Storage technology, Material. • Systems Modelling, Identification and Estimation • Microelectronics, Nano Electronics and nano technology. • Drone Technology, Robotics. • Battery management systems, Diagnosis , Thermal analysis and management, Technology and material • Transportation electrification - Road, Rail, Air, Water. • Condition monitoring and fault diagnosis of various systems. • Semiconductor Device Modeling and Simulation- Bio Sensors, Wearable Electronics and Antennas, Thin Film Supercapacitors, • AI, ML, Analytics and Computation in Engineering. • Flow batteries for Renewable energy applications. • Transdermal Drug Delivery.

Management Studies	• Finance • Marketing • Human Resource Management • Intellectual Property Rights(IPR) • Entrepreneurship
Humanities and Social Sciences	• Postcolonialism. • Critical Media • Digital Cultures • Economics, etc.

The Institute offers **Post-Doctoral Fellowship (PDF)** with a view to providing an opportunity for competent researchers to do independent research work in an appropriate area. Institute will admit young researchers, as Institute Postdoctoral Fellows (IPDFs) and Sponsored Postdoctoral Fellows (SPDFs).

Institute PDF: Those who are applying through advertisement of this institute, these PDFs are termed as Institute Post-Doctoral Fellows (IPDF). Their rules and regulation are governed by the Institute's policy. The total number of IPDF will be as per the sanctioned strength at any time in a department.

Sponsored PDF: Post-Doctoral Fellow from sponsored project/agency or awarded by R&D /Other Organizations like DST, SERB, ICSR, UGC, NBHM, INSPIRE, N-PDF, etc. These PDFs are termed Sponsored PDF (SPDF). These SPDFs should follow the rules and regulations (for fellowship, contingency, and duration) as stated by the sponsoring agency. NIT Silchar will offer mentor(s) and they are also broadly governed by the Institute's policy for other issues. The number of SPDFs supported by sponsored projects/agencies will be over and above the sanctioned number of IPDFs.

Eligibility:

The eligibility criterion of the applicant for IPDF are as follows:

1. The National Institute of Technology Silchar is offering Full Time IPDF program in the area of research/ specialization mentioned in above for the respective department.
2. Institute Post-Doctoral Fellowship is intended for persons normally below 35 years of age. However, for persons from teaching institutions recognized by AICTE/UGC/R&D organizations or persons sponsored by DSIR-recognized industrial organizations, the maximum age limit shall be 40 years.
3. Institute Post-Doctoral Fellowship will be offered to persons who have a Ph.D. degree in the mentioned branch of Engineering/ Science/ Social Sciences/ Management studies and has a minimum of 03 (Three) research publications in peer-reviewed SCI/SCIE/SSCI indexed journals.
4. All the degrees acquired by the candidate must be in first class, with at least one degree from IIT/NIT/Government Funded/CFTI/Centrally Funded Institutes and/or the institute NIRF rank within 100.
5. Candidate must apply within two years after completing his/her Ph.D. degree.
6. Reservations and relaxation will be followed as per Government of India norms.
7. Fellowship is available to Indian Nationals only.

Application procedure:

a) The applicant can apply for the IPDF program through the online application portal available at https://admission.nits.ac.in/ipdf (else, copy the link and paste in the browser)
b) A proposal must be submitted by the aspiring post-doctoral fellow with the consent of a faculty member of NIT Silchar as a mentor.
c) The proposal submitted by the fellow must not be a mere extension of the Ph.D. work.
d) The applicant is allowed to submit only one concept note/Research Proposal with respect to a single advertisement.
e) The expertise possessed by the applicant will be an important criteria in the selection process.
f) The concept note/Research Proposal must be submitted as per the format given in **Annexure – I** with filled up application form.
g) The candidate/ applicant will be allowed to pursue PDF only once at NIT Silchar.

The online submitted application form must be sent to the e-mail id **ipdf_nitsilchar@nits.ac.in** on or before 14.07.2026 by subject line ***"Application for the IPDF program – Name of the Department".*** **Candidates are advised not to send any hard copy of the application form.** The candidates are advised to give their latest contact numbers/e- mail ids in the application form. The Institute reserves the right to reject any or all applications or it may amend any of the clauses above as per orders of the competent authority/Government of India. Candidates are advised to visit the Institute website regularly for any updates.

Important Dates:

Sl. No.	Details	Tentative Dates
01.	Last date of receipt of applications	14.07.2026
02.	Publication of shortlisted candidates for interview	03.08.2026
03.	Tentative date of interview	31.08.2026
04.	List of selected candidates to be uploaded in the institute website	04.09.2026

A Processing Fee of **Rs. 1000**/-(for Open/OBC) **OR Rs**. **500/-** (for SC/ST/ PwD/EWS) must be paid via online payment and steps for online payment are as follows:

1. onlinesbi.com
2. State Bank Collect (SB Collect).
3. Accept and proceed.
4. State of Institute>Assam.
5. Type of Institute> Educational institute> Go.
6. Educational Institutions Name>Select online fee collection account NIT Silchar>Submit.
7. Select payment category as "Processing fee for IPDF Admission Summer 2026".
8. Fill the required information and submit.

The payment reference number and date of the payment to be mentioned in the application form,

Otherwise, the application form will be treated as cancelled. The applicant must enclose all relevant documents, self-attested, in connection with the credentials claimed by the applicant at the time of submission of application form.

GENERAL TERMS AND CONDITIONS

1. The Institute reserves the right to cancel the candidature without assigning any reason thereof.
2. The prescribed qualification are minimum and mere possession of the same does not entitle candidates to be called for in person interview.
3. No correspondence will be entertained with the candidates, who are not called for interview.
4. Canvassing in any form will result in disqualification of candidature.
5. Legal disputes, if any, will be restricted within the jurisdiction of Silchar Court only.
6. Candidates should submit one set of application form along with all supporting documents duly self-attested at the time of interview.
7. All reserved category candidates shall be required to submit self-attested copies of the latest Caste certificate issued by competent authority.
8. Candidates must produce original mark sheets and certificates during verification, if called for.
9. Selected candidates shall have to sign an agreement at the time of joining.
10. **The fellowship is Rs. 50000/- per month. Moreover, a contingency grant of Rs. 50,000 per annum towards purchasing consumables items and registration fee of conference and travelling allowance attending conferences (within India), data collection, data procurement, meeting publication charges etc., will be made available to the fellow. If the candidate leaves the Institute within one year of joining the fellowship, he/she must return the contingency grant availed by him/her.**
11. **Initial appointment of the fellow is for a period of one year extended up to one more year.**

Sd/-
Dean (R&C)

Annexure I

Research Proposal/ Concept Note Format

The complete format for research proposal consisting of the following contents/sections is a part of the Application Form. No research proposal or a section thereof needs to be submitted separately. All the proposal to be signed by the applicant as well as Mentor and Co-Mentor (if any).
The research proposal shall comprise of the following sections:

i. **Title of the Research Proposal**: The research proposal should have a clear, meaningful and confirmed topic reflecting the scope of the study.

ii. **Abstract** of the proposed research proposal should be given (in about 250 words).

iii. **Introduction**: The introduction should clearly state the research problem to be investigated in the light of its theoretical and/or empirical context in the relevant area (in about 400 words),

iv. **Major Research Works Reviewed**: (National and International): Reviews of at least 15 to 20 significant national and international research works related to the proposed theme of research is to be given in this section (in about 300 words).

v. **Identification of Research Gaps**: The applicant should summarize the current status of research in the area and major findings, including the researcher's own work in the area. Existing empirical findings may also be discussed. The overview should clearly demonstrate the research gap and its relevance (in about 300 words).

vi. **Objectives of the Study**: The general aim of the study along with the specific objectives to be accomplished, should be clearly stated in bullet form (in about 250 words).

vii. **Methodology**: The researcher must describe in detail (a) the scope and coverage of his/her study; and (b) approach and methodology with adequate justification to conduct the research. The details of the methodology may include research design, data to be collected and empirical and analytical methods to be used. The description of the methodology must be clearly linked to the aims of the research and the research questions/hypotheses of the study (in about 300 words).

viii. **Expected outcomes**: A brief note on the proposed plan of publications, during the course of research and after its completion, must be provided in bullet form. The section should enlist the proposed outputs from the study in terms of publications in the form of research papers/articles in journals/books/ monographs, etc.) (In about 200 words).

ix. **References:** The reference style must adhere to standard journal.