राष्ट्रीय प्रौद्योगिकी संस्थान गोवा
NATIONAL INSTITUTE OF TECHNOLOGY GOA
कुंकोलिम, जिला दक्षिण गोवा, गोवा, पिन-403703
Cuncolim, South Goa District, Goa, Pin–403703

Advt. No: NITG/ANRF-PAIR/Manpower/2025/OW/01 **Dated: 18/12/2025**

Advertisement for the Position of Junior Research Fellow (JRF) and Project Associate-I under Partnerships for Accelerated Innovation and Research (PAIR), ANRF, GOI

Applications are invited from the interested candidates for the post of Junior Research Fellow (JRF) and Project Associate-I to work on the various R&D projects, sanctioned under the project entitled "ANRF PAIR IITB HUB (ANRF/PAIR/2025/000017/PAIR)" Partnerships for Accelerated Innovation and Research (PAIR) programme, ANRF, GOI.

Total duration of the project: 5 Years*

Project Number	Project Title	Name of Post (Nos)	Investigators	Department
Pr-1	Technologies for Digital Privacy and Security	JRF-Junior Research Fellow (02) Project Associate-I (01)	Dr. Chirag Modi Dr. Nithin Kumar Y B Dr. Ravi Prasad K J	CSE ECE APS
Pr-2	GaN based DC-DC converters for next-generation EV power electronic subsystems: Research Innovations and Educational resources	JRF-Junior Research Fellow (02)	Dr. Sreeraj E S Dr. Soumitra Das	EEE
Pr-3	Design of Bi-directional Converters for EV Charging Station and feasibility studies for their installation to Support V2G Services	JRF-Junior Research Fellow (02)	Dr. Suresh Mikkili Dr. C Vyjayanthi	EEE
Pr-4	AI powered sustainable distributed data center deployment through Environmental data	JRF-Junior Research Fellow (01)	Dr. Damodar Reddy Dr. Pravati Swain	CSE
Pr-5	Ultra-High Compressed Earthen Blocks integrated with bio-binders for Sustainable and Affordable Construction	JRF-Junior Research Fellow (01)	Dr. Harikumar M	CVE

***-** The position will be offered for 1 year initially, which can be further extended based on the performance review. In case of JRF, after the completion of 2 years, the position will be converted into SRF based on the performance review. The applicants will get a chance to enrol into PhD program at NIT Goa, as per the Institute norms.

Essential Qualification and Monthly Emolument

- B.Tech/B.E./M.Tech./M.E./equivalent in the relevant discipline with NET/GATE and at least 6.5 CGPA or 60 percent marks in aggregate from a recognized technical institute or university in a full-time program.
- Per month salary will be Rs. 37000 + 20% HRA with other allowances as per the Institute norms. In case of Project Associate-I position, if a candidate is not having NET/GATE qualification, per month salary will be Rs. 30000 + 20% HRA with other allowances as per the Institute norms.

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Project Details, Objectives and Desired Skills

Project Number	Objectives of the Projects	Desired Skills
Pr-1	• To develop a secured web authentication with the compliance of DPDPA 2025 • AI/ML enabled vulnerability assessment, malware detection and cyber kill chain for OT security	• Back end and front end development • JAVA and other programming • Basic knowledge of networking, AI/ML, Cryptography and Security
Pr-2	• Simulation, Design and Development of GaN based DC-DC converters	• Knowledge of simulating power electronics systems • Knowledge of programming microcontrollers, DSP kits, FPGA etc
Pr-3	• To design bidirectional converters for o Level-1 (Home/Residential) o Level-2 (workplaces/commercial buildings/malls etc.) and o Level-3 charging stations (public/outdoor) of 2W, 3W and 4W to support reactive power demand and peak load demand of the power network. • To analyze SoC and SoH by collecting the real-time data of a battery and converter during V2G reactive power support or voltage regulation. • To carry out analysis of an existing real-time distribution system(s) w.r.t. its power flows, voltage profile, phase balancing, losses, line and transformer loading, power quality, reliability, etc. • To carry out feasibility studies for identifying appropriate location and capacity for installing EV Charging Stations within a distribution network, for different EV demand predictions, ensuring reliability and power quality. • To provide recommendations to DISCOMs mainly w.r.t distribution system argumentation, captive power storage systems, reactive power requirements, etc.	• The design and development of Bi-directional Converters for EV Charging Station and feasibility studies for their installation to Support V2G Services. • Proficiency in controllers programming like DSP or FPGA programming, MATLAB and Simulink, charge controllers etc. Micro grid interconnection device, communication protocol IEEE 2030.5, Data Acquisition System and security management system • Perform simulation and then hardware implementation on the proposed system. • Assist in preparation of presentations, manuscripts and project related topics. • Knowledge of simulating power electronics systems/ and programming microprocessors/ controllers
Pr-4	• Deployment of cost effective, high-availability small data center, and high performance computing facilities in resource challenged environments. • Develop an AI/ML enabled command and control automate system to build a small world of collaboration between geospatial small data center	• Basic knowledge of Data Science and data collection using sensors

	to a potentially large service provider. It improves information and resource sharing between the small data centers. • By using AI and Deep neural networks, reduce the ecological impact of data centers while maintaining high performance. By integrating real-time environmental metrics (e.g., temperature, humidity, energy sources, and carbon footprint), these data centers optimize operations to align with sustainability goals. Also, find innovative ways by incorporating renewable energy sources to reduce the energy consumption of the data center. • In the view of emerging security and privacy challenges, implement an efficient federated learning in a distributed data center by taking care of heterogeneity in data distribution and computation devices.	
Pr-5	• To design and manufacture high strength, durable and sustainable earthen blocks using ultrahigh compression techniques • To explore and integrate eco-friendly bio-binders such as starch, lignin, and plant-based resins into the building block. • To characterize the building blocks by determination of its physical, mechanical, and thermal properties, paving way for standardization in manufacture and its usage. • To promote the use of locally available soil and biodegradable binders for sustainable and low-cost construction. • To perform life cycle analysis on the building block and critically compare it with the conventional brick/concrete blocks used in construction • To design and manufacture high-strength, durable and sustainable earthen blocks using ultrahigh compression techniques and eco-friendly bio-binders such as starch, lignin, and plant-based resins for application in affordable housing.	• Soil/material characterization, compaction & strength testing • Familiarity with bio-based binders or sustainable materials • Data analysis (Excel/MATLAB/Python) • Preferable exposure to MICP/bio-binders, microstructure techniques (SEM/XRD), LCA or sustainability assessment. • Strong scientific documentation skills

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Important Instructions:

1. Candidate possessing the requisite qualification and experience should apply in the attached format along with their updated CV latest. The applicant will be responsible for the authenticity of information, other documents and photographs submitted.
2. For each of the mentioned post, a separate application needs to be submitted.
3. Mere, possessing the prescribed qualification does not ensure that the candidate would be called for Interview. The Candidates will be shortlisted on the basis of merit and need of the project.
4. Applicants in employment (private, government or any other organization) are required to submit a "No Objection Certificate" from the employer at the time of interview.
5. Application form (as given below) giving all the details along with the self-attested copies of certificates, supporting documents and experience in soft copy should be submitted at Google Form link https://forms.gle/KRLrJRoX4kUJnom19 by 5th **January 2026.**
6. The Shortlisted Candidates will be informed by e-mail (apart from NIT Goa website "www.nitgoa.ac.in") along with the date and time of the written test and/or interview. No other letter will be sent to the correspondence address.
7. Shortlisted candidates have to present themselves for the written test and/or interview with the updated CV, application form, original and attested photocopies of mark sheets/certificates in support of their academic qualifications.
8. No TA/DA shall be paid to candidates for attending the Interview and/or joining the position.
9. The appointment is for a time bound project and the candidate is required to work dedicatedly for the successful completion of the project. Selected candidate has to join immediately.
10. Incomplete application forms and forms received after due date will be summarily rejected.
11. All the Terms and Conditions for this recruitment will be as per guidelines of ANRF, Govt. of India.

For any query, please contact at below address:

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Application for the Position of JRF (Junior Research Fellow) or Project Associate-I under ANRF-PAIR, ANRF, GOI

Title of Project: ANRF PAIR IITB HUB

Paste here a recent passport size photograph

1. Post Applied for: JRF/Project Associate-I (tick mark as appropriate)
2. Project No: Pr-1/ Pr-2/ Pr-3/ Pr-4/ Pr-5 (tick mark as appropriate)
3. Title of the Project and Number:
4. Name of the Candidate (BLOCKLETTER):_____
5. Father's Name (BLOCKLETTER): _____
6. Mother's Name (BLOCKLETTER): _____
7. (a) Date of Birth: (DD/MM/YYYY)_____

   (b) Sex (Male/Female/Other):_____

   (c) Marital Status (Married/Single):_____

   (d) Category (SC/ST/OBC/PWD/GEN):_____
8. Previous Research experience: (use additional sheet if required)_____
9. Publication(s), if any: (use additional sheet if required)_____
10. GATE/ NET: Score:_____Rank:_ _____Specialization: _____Year: _____
11. Academic Qualification: (Starting from Standard 10 or equivalent Examination)

Name of Exam Passed	Name of the School/College/Institute/ University	Year of Passing	Discipline/ Specialization	Percentage of Marks/ CGPA

10. (a) Address for Communication: (BLOCKLETTER)

(b) Contact No. (Mobile)

(c) E-mail ID :

11. Contact Details of two referees:

	Referee I	Referee II
Name:		
Designation:		
Organization:		
Office Address:		
Office Phone Number:		
Email ID:		

12. Areas of Expertise:

13. Experience details:

I do here by declare that the information furnished in this application is true to the best of my knowledge and belief. If selected, I promise to abide by the rules and regulations of the Institute.

Date:

Place: Signature of the candidate