Indian Institute of Technology (Indian School of Mines), Dhanbad
The Office of Dean, Research & Development

Sanction No and Date: BT/PR64697/QTBT/176/13/ 2025 dated 16/04/2026	**IIT (ISM) Project No.** SRDP/1309/G	Date: 15th May, 2026

Recruitment for the position of "JRF" under DBT Project

Applications are invited from interested and motivated candidates for the position of JRF in a time bound sponsored project. The details of the project are as the following:

Position	**Junior Research Fellow (JRF)**
Number of Position (s)	01 (one)
Title of The Project	Single-Electron Transistor (SET)-based Biosensor using Functionalized Quantum Dots for Ultra-sensitive Detection of Biomarkers
Principal Investigator	Prof. Manodipan Sahoo, Department of Electronics Engineering
Tenure of Project	3 years
Job Description (in a maximum of 100 words)	The initial tenure will be of 01 (one) year. Upon completion of the first year the tenure may be extended based on annual performance evaluation and project requirement. The position may be converted to PhD at IIT (ISM) Dhanbad as per institute rules and performance. The JRF will work on computational modeling of nanogap–quantum dot biosensor devices for analyte detection. Responsibilities include device structure development, DFT-based interface studies, and NEGF transport simulations to analyze current modulation, sensitivity, and selectivity. He will assist PI in the timely and successful completion of the project.
Essential Qualification	• M. Tech. / M. E. in VLSI Design / Electronics / ECE / Microelectronics / Nanotechnology / Materials Science & Engineering, or related fields OR • B. Tech. / B. E. in ECE / Electrical / EEE / Instrumentation or related disciplines with valid GATE/ NET qualification

	• Strong fundamental knowledge of semiconductor devices. • Familiarity with Python / MATLAB / Linux environments. **Note: Candidates awaiting their M. Tech. degree results are eligible to apply.**
Desirable Qualification	• Experience in Computational Modeling, Nanoelectronics, Biosensors, or Materials Science. • Familiarity with DFT/NEGF simulation tools such as Quantum ESPRESSO, SIESTA, NanoTCAD ViDES, or equivalent. • Exposure to machine learning/ AI techniques. • Ability to work independently and in interdisciplinary research teams.
Age and Relaxation (if any)	Upper age limit is 28 years at the time of application. Age relaxation is applicable as per Government of India / IIT(ISM) norms for SC / ST / OBC / Women / PwD candidate.
Fellowship	Consolidated ₹ **37000/-** per month.
How to Apply	Interested candidates should **email** a single PDF (containing (i) CV, (ii) GATE/NET score card, (iii) self-attested copies of all marksheets and certificates, (iv) proof of work experience, if any) to the PI at **manodipansahoo@gmail.com,** with subject line "Application for JRF position"**.**
Last Date & Time	**7th June, 2026 at 5:00 pm**
Shortlisted candidates will be informed on the date of interview. Mere possession of minimum qualification does not guarantee an invitation to the interview. Candidates will be shortlisted based on their merit and as per the requirement of the project. All candidates should make their own arrangements for their stay at Dhanbad, if required. No TA/DA will be paid to attend the interview. Interview may be conducted via online mode or in-person (physical) mode.	

(Signature of PI)