



भारतीय प्रौद्योगिकी संस्थान इन्दौर
सिमरोल, इन्दौर 453 552, भारत

Advertisement for JRF position under ANRF-PMECRG sponsored project

Date: 01/07/2025

Applications are invited from interested and motivated candidates for the post of **Junior Research Fellow (JRF)** in the research project funded by Anusandhan National Research Foundation (ANRF) under Prime Minister Early Career Research Grant (PMECRG) Program, Govt. of India.

Project Title: Development of Patient-Specific Organ-on-a-Chip Model for Atherosclerosis: Investigating Vascular Remodeling, Plaque Instability, and Immune Response.

Project Overview: This project focuses on developing a microfluidic organ-on-a-chip platform tailored to individual patient profiles for modeling atherosclerosis. The study aims to mimic physiological and pathological conditions of blood vessels to investigate the mechanisms of vascular remodeling, plaque progression, rupture, and immune system involvement in disease progression. This interdisciplinary project integrates microfluidics, bioengineering, tissue engineering, and immunopathology.

Essential Qualification:

Master's degree in mechanical engineering/ technology/ Thermal Engineering, Fluids & Thermal Engineering, Manufacturing Engineering, or **any other field of Engineering/Technology** with first division as defined by the awarding Institute/ University) and **Valid GATE qualification**.

OR

Four-year Bachelor's degree (B.E/B.Tech) in Mechanical Engineering, Manufacturing Engineering, Chemical Engineering, Biotechnology, Biomedical Engineering or any other field of Engineering/Technology (with first division as defined by the awarding Institute/ University) **AND valid GATE qualification** OR Five-year Integrated Degree in the Mechanical Engineering or any other field of Engineering/Technology (with first division as defined by the awarding Institute/ University), and a **Valid GATE qualification**.

Desirable Qualifications and Skills:

- Experience in microfluidic device design and fabrication (e.g., soft lithography)
- Knowledge of vascular biology and cell culture techniques
- Familiarity with 3D bioprinting or organ-on-chip systems
- Experience with fluorescence microscopy, confocal imaging, and cell-based assays
- Strong data analysis skills.

Duration: The appointment will be for *1 year initially, and based on the performance of the candidate, tenure can be extended up to three years*. (The selected candidate will be encouraged to register for the Ph.D. program at IIT Indore as per the institute norms)

Roles and Responsibilities:

The selected candidates will:

- Design and fabricate microfluidic devices simulating vascular structures.
- Develop 3D tissue-engineered vascular constructs using patient-derived cells.
- Integrate biosensing modules for real-time monitoring of plaque instability and inflammatory responses.
- Perform in vitro experiments to study vascular remodeling and immune cell interactions.
- Collaborate with clinicians to integrate patient-specific data for personalized models.
- Analyze data using image processing, bioinformatics, and statistical tools.
- Prepare reports, presentations, manuscripts, and assist with documentation for funding agencies.

Age Limit: Maximum age limit: 28 Years

Fellowship: *Rs. 37,000/- p.m. (for first two years) + HRA (as per norms)*
Rs. 42,000/- p.m. (for third year) + HRA (as per norms)

Interested candidates are requested to submit a detailed softcopy of their CV with all relevant educational certificates and GATE score card in a single pdf file to vijai.laxmi@iiti.ac.in with the subject line **JRF application for ANRF project** by **25/07/2025**. Tentative Date of Interview: **Last week of July 2025**.

Only shortlisted candidates will be informed about the interview (**online**) via email.