



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY POWAI, MUMBAI 400076.

Advertisement No.: IRCC/EXT064/2024

Job Title

Junior Research Fellow

Job Reference Number

50569066

Application End Date

26.04.2024

Type of Employment

Proj. Staff Contract

No. of Position(s)

1

IITB Project Recruitment:

Project title: Development of GUI based on single board level computer for data acquisition and real time display of cerebral blood flow images in an in-house developed small animal imaging platform.

About the project: We are delighted to announce the successful development of an innovative Optical Cerebral Blood Flow Imaging Platform tailored for small animals such as mice and rats. This cutting-edge system incorporates advanced laser and scanning optics, coupled with a high-resolution camera for precise blood flow detection. Additionally, sophisticated algorithms have been meticulously integrated for real-time image processing to accurately measure blood flow dynamics.

The project's success hinges on the meticulous optimization of optical design, mechanical components, and electronic hardware.

This platform offers a broad spectrum of applications, ranging from functional neuroimaging studies using animals to drug testing with animal models, and contributing to educational initiatives in laboratories.

We are currently inviting applications for an exciting opportunity for a Junior Research Fellow position within our team, focusing on the recently developed Optical Cerebral Blood Flow Imaging Platform designed for small animals like mice and rats. This role presents a distinctive opportunity to contribute to a pioneering project positioned at the forefront of optics and neuroimaging. As a Junior Research Fellow, you will play an active role in enhancing the platform's optical design, refining mechanical components, and optimizing electronic hardware. Additionally, you will play a crucial role in optimizing associated imaging and image processing algorithms. This multifaceted role provides a unique opportunity to immerse yourself in the comprehensive development and improvement of the imaging system, contributing to advancements in both hardware and software components.

While prior experience in optical system design is preferred, it is not mandatory for this Junior Research Fellow (JRF) position.

We highly appreciate and welcome individuals with diverse backgrounds and skills. Nevertheless, for success in this JRF role, strong coding proficiency in Python, MATLAB, or C is essential. Additionally, an understanding of basic electronic hardware, data acquisition (DAQ), and familiarity with single board computer platforms like Arduino or Raspberry Pi will be preferable. It is important to note that the handling of animals is not required for this project. Your primary focus will be on contributing to the enhancement of the Optical Cerebral Blood Flow Imaging Platform, with an emphasis on optical design, mechanical components, and electronic hardware optimization.

Essential Qualifications & Experience:

(i) M.Tech./M.E. or equivalent degree in Biomedical Engineering, Computer Science & Engineering, Electrical Engineering, Electronics/Telecommunications Engineering, Instrumentation Engineering, Mechanical Engineering and Engineering Physics.

Or

(ii) M.Tech. Photonics/optics

Or

(iii) B.Tech./B.E. or equivalent degree in Biomedical Engineering, Computer Science & Engineering, Electrical Engineering, Electronics/Telecommunications Engineering, Instrumentation Engineering, Mechanical Engineering and Engineering Physics.

Or

(iv) M.Sc. or equivalent degree in photonics, optics, Electronics, Physics.

selected through a process described through any one of the following:

a. Scholars who are selected through National Eligibility Tests - CSIR-UGC NET including lectureship (Assistant Professorship) and GATE.

b. The selection process through National level examinations conducted by Central Government Departments and their Agencies and Institutions such as DST, DBT, DAE, DOS, DRDO, MHRD, ICAR, ICMR, IIT, IISc, IISER etc.

Job Profile:

Design and development of an Optical Cerebral Blood Flow Imaging Platform. To optimize platforms optical and mechanical design, electronic hardware and imaging algorithm.

Pay Details:

Consolidated salary Rs.37000/- p.m. + HRA

General information:

The position is temporary for a period of 1 year and tenable only for the duration of the project. The appointment is for time bound project and the candidate is required to work mainly for the successful completion of the project. The selection committee may offer lower or higher designation and lower or higher salary depending upon the experience and performance of the candidate in the interview.

Candidates called for interview will be required to attend at his/ her own expenses.

For any queries/clarification please contact: recruit@ircc.iitb.ac.in