



Ref: ME/2020/NRB

Date: 11th September 2020

JRF Recruitment in DRDO-NRB Sponsored Project (NRB-471/MAR/2020-21)

Applications are invited from eligible candidates to work as a Junior Research Fellow (JRF) in a Naval Research Board (NRB) sponsored project at Mechanical Engineering Department, BITS-Pilani, (Pilani campus), Rajasthan. The details are as follows:

Project Title	Design and development of MEMS gyroscopes for naval applications
Project Duration	3 years
Principal Investigator (PI)	Dr. Venkatesh Kadbur Prabhakar rao
Project Description	The main Gyros presently used on Naval Ships and aircraft for navigation are Ring Laser Gyros (RLGs) which are primarily Inertial Navigation Systems (INS). The RLGs on ships provide gyro data for Navigation and ship's heading, roll, pitch, yaw and the rates for other consumers like sensors and weapon systems. The RLGs are expensive (approx Rs 3 - 4 Crores per set) and require very stringent environment control to provide accurate data. Onboard non-weapon platforms, pure Navigation Gyros are used (like Anschutz Std 22M). In addition, all ships are mandated to have a Magnetic Compass to meet the SOLAS requirements, which are supposed to provide ship's heading in case of total power failures. In addition, for localized requirements like antenna stabilization, data for FCS antenna, etc. Fibre Optic Gyros are also used. The ship's boats and landing crafts rely on GPS sets (fixed or handheld) for display of heading. This project aims to design and manufacture a MEMS based Gyro that meets the technical specifications for each of the Naval applications. The aim is to develop a Gyro that is much cheaper, smaller, lighter, generates less heat and consumes less power so that there can be significant savings in costs for Indian Navy. With the cost of MEMS Gyro being lesser and smaller in size and weight, ships can have more numbers installed for higher redundancy and it can reduce the maintenance costs also.
Fellowship	Rs. 31,000/- per month for 2 years and Rs. 35,000/- per month in 3 rd year.
Essential Qualifications	M.E./M.Tech with at least 60% marks in Mechanical Engineering/ Aerospace Engineering.
Desirable Qualification:	GATE-qualified and good knowledge of fundamentals in Mechanics, Vibrations and FEM and a strong desire to work in interdisciplinary subjects.

Application Procedure:

- Candidates should email bio-data to the PI (venkateshkp.rao@pilani.bits-pilani.ac.in) by **30th September 2020**.
- Shortlisted candidates will be informed through email and called for interview to be held at Mechanical Engineering Department, BITS-Pilani, (Pilani Campus), Rajasthan.

Notes:

1. For any queries regarding the position, please feel free to email the PI.
2. The position mentioned is temporary and for the period of duration of the project (3 years).
3. Selected candidate will be encouraged to join the Ph.D. program of BITS-Pilani as per institute rules.





Birla Institute of Technology & Science, Pilani

Pilani Campus

4. If performance of candidate is found unsatisfactory, the position can be terminated with 1-month notice.
5. No TA/DA will be paid for attending the interview.

Dr. Venkatesh Kadbur Prabhakar Rao (PI)

