



**Department of Mechanical Engineering**  
**NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL**

**Ref. No.** 36/NITK/MECH/DRDO/HK/2022-23/A9

27/01/2023

**Advertisement for Junior Research Fellow (JRF)**

Applications are invited for the position of Junior Research Fellow (JRF) in a research and development project [Sponsored by Aeronautics Research and Development Board (AR&DB), DRDO, Govt. of India] with following details:

**Title of the project:**

“Design of Shock Mounts for typical LRU of aircraft using conventional shock mounts and Magneto-Rheological Shock Mounts”

**Principal Investigator:**

Dr. Hemantha Kumar,  
Associate Professor, Department of Mechanical Engineering,  
National Institute of Technology Karnataka, Surathkal, Mangalore-575025,  
Ph: +918762709897  
Email: [hemantha@nitk.edu.in](mailto:hemantha@nitk.edu.in)

**Co-Principal Investigator:**

Dr. Arun M,  
Associate Professor,  
Department of Mechanical Engineering,  
National Institute of Technology Karnataka, Surathkal, Mangalore-575025,  
Email: m.arun1978@gmail.com

**Name of the position:** Junior Research Fellow (JRF)

**No. of Positions/Vacancies:** One

**Qualifications:**

**Essential Qualifications:-** BE/B.Tech in Mechanical Engineering or other allied disciplines in first division with valid GATE Qualification.

**(OR)**

M.Tech./M.E. in Machine design / Mechatronics / Control Engineering / Thermal Engineering/ Machine Dynamics and other allied areas with a first division at Graduate and Post graduate level.

**Desired Skills:-**

- Basic exposure to software such as MATLAB, ANSYS, CFD, Labview.
- Ability to work in a team, good communication skills and experience in experimental research for fabrication of setup.

**Age Limit:- 28 years** (The upper age limit is relaxable upto 05 years in case of candidates belonging to Scheduled Castes and Scheduled Tribes, and upto 03 years in case of candidates belonging to OBC.)

**Salary:-**

- **Rs. 31,000/month (for JRF) + HRA (16%)**

**Duration:** 01year (approx.) or up to the termination of project, subject to annual performance review.

**How to apply:** Interested candidates must apply with the following documents (1) Cover letter (2) Bio-data with passport-sized photograph, (3) Scanned copies of educational certificates and mark sheets, class XII onwards (4) GATE qualified certificate and (5) Scanned copies of Proof for research experience, special achievements and publications, if any.

The soft copies of all the above documents (pdf format) must be **emailed to the P.I., Dr. Hemantha kumar (hemantha@nitk.edu.in) by 15<sup>th</sup> Feb. 2023**. The email address for correspondence is given above. Only shortlisted candidates will be intimated by email and called for Offline interview. The position is available immediately. Interview is most likely to be held during Third week of Feb. 2023. The appointment will be on a purely temporary basis co-terminus with the project.

**About the project:**

**Total duration: 3 YEARS (2022-2025)**

**Funding Agency:** Aeronautics Research and Development Board (AR&DB), DRDO, Govt. of India

**Project summary:**

The vibration spectra reaching the Line Replaceable Unit (LRU) of an aircraft contain high frequency disturbances which may harm the system resulting in shorter span of LRU. Passive shock mounts are capable of reducing the high frequency vibration yet further optimization in the design is still a scope. Similarly, semi-active mounts are much more capable than passive mounts as proved in some of the literatures. Thus, a mount with magneto-rheological (MR) fluid as the damping medium will be considered for a high frequency application of LRU.