



Advt. No.: IITJMU/R&C/RP0083/2023/A-17

Dated: 22-01-2023

### Advertisement for the Position of JRF

Applications are invited from the interested candidates for the post of **Junior Research Fellow (JRF)** to work on the project titled “**Numerical and experimental investigation on fatigue fracture analysis of CNT/Graphene reinforced composites for structural application in a thermo-mechanical environment**” sanctioned by Science and Engineering Research Board (SERB), India.

No. of Positions	Position	Area of Specialization	Duration	Consolidated Salary per Month
1	JRF	Computational Fracture Mechanics	Initially for 1 year, which may be extended upto, the duration of the project based on the satisfactory performance.	31,000/+16% HRA

#### \*Minimum Qualification:

- Essential Qualification:
  1. M.E./M.Tech. or B.E./B. Tech. with specialization in Mechanical Engineering or equivalent.
  2. GATE qualification in relevant disciplines is mandatory.
- Desired Qualification:
  1. Sound knowledge of fundamentals of Finite element method, Continuum mechanics, Fracture Mechanics
  2. Proficiency in MATLAB, ABAQUS
- Upper age limit: 32 years

#### Brief Objective of Project:

- Modeling of microcracks, voids, and reinforced CNT/Graphene particles in homogenous, multiphase materials and functionally graded materials.

- Multiscale modeling of CNT/Graphene reinforced composite to study the fracture behavior from a lower scale.
- Modeling of crack nucleation and propagation of in CNT/Graphene reinforced composite under thermo-mechanical loading for various engineering applications using multiscale phase field method.
- Total fatigue life (crack nucleation and propagation) estimation of CNT/Graphene reinforced composite subjected to cyclic loading.
- Validation of developed numerical model and obtained numerical results with the in-house performed experiments on the CNT/Graphene reinforced composite.

### **Job Description:**

The selected candidate is expected to write in-house FEM codes, set up an experimental facility for the fracture analysis of CNT/Graphene reinforced composite and other tasks for the successful completion of the project.

### **Application Process:**

Duly filled application form along with the requested details, scanned copies of certificates, other supporting documents, should be uploaded through the online portal (<https://apply.iitjammu.ac.in/#/home>) latest by February 20<sup>th</sup>, 2023. Please apply through the [contract/project staff/JRF/SRF] tab on the referred application portal. Candidates who are already employed should produce a relieving certificate from their employers if selected. The interview will be conducted for all shortlisted candidates.

### **Attention:**

1. The applicant will be responsible for the authenticity of the information, other documents, and photographs submitted.
2. Merely possessing the prescribed qualification does not ensure that the candidate would be called for an Interview. The candidates may be shortlisted based on merit and need for the project.
3. Shortlisted candidates will be informed by e-mail about the interview. So, the candidate must provide valid e-mail IDs, phone number information in their applications.
4. Shortlisted candidates must present themselves for the interview on the interview date with an updated CV and original and attested photocopies of mark sheets/certificates in support of their academic qualifications. Only shortlisted candidates will be called for the interview. The time of the interview will be informed to the shortlisted candidates by e-mail. The interview will be held by using the online platform.

5. Candidates who are already employed should produce a relieving certificate from their employers if selected.
6. The last date for receiving the duly filled in application is 20<sup>th</sup> February, 2023, through an online portal.
7. The date of interview will be informed to the shortlisted candidates through email.
8. The selected JRF may get an opportunity to peruse PhD at IIT Jammu as per institute norms.

**Address for Correspondence:**

**Dr. Roshan Udaram Patil**

Indian Institute of Technology Jammu

Department of Mechanical Engineering

Jagti, NH-44 Nagrota Bypass Jammu. 182211

Email: roshan.patil@iitjammu.ac.in