INDIAN INSTITUTE OF TECHNOLOGY PATNA
BIHTA PATNA-801106
RESEARCH & DEVELOPMENT UNIT

ADVERTISEMENT NO: R&D/956/HFA/334 **DATED: 03.01 2024**

Project No. R&D/SP/ME/HFA/2023-24/956

Applications are invited in the prescribed format only for the following assignment in a purely time bound research project undertaken in this institute.

1. (a) Name of the temporary assignment : Junior Research Fellow (JRF)

   (b) Number of Post : 01 (One)

   (c) Duration of the Post : 1 year initially followed by extension subject to satisfactory performance

2. Name of the temporary research project : Hygrothermal Fracture Analysis of CFRP Composites for Aerospace Applications

3. Name of the sponsoring Agency : Science and Engineering Research Board (SERB)

4. Consolidated Fellowship/Salary : 31000 + HRA (as per GoI rules)

5. Minimum Eligibility for Qualifications & Experience :

   a) For candidates with M.Tech./ME/MS as qualifying degree in an Engineering/Technology in Mechanical, Aerospace, Applied Mechanics, or, relevant branches with a minimum CPI of 6.5 or, 60% of marks, and GATE/NET qualification.

   b) For candidates with B. Tech./BE as a qualifying degree in Engineering/Technology in Mechanical, Applied Mechanics, Aerospace, Computational Mechanics or, relevant branches, 70% marks or 7.5 CPI in B.Tech/BE from institutes other than IITs/IISc with valid GATE score and 8.0 CPI in B.Tech./BE from IITs and IISc.

   c) The age should not exceed 28 years for a candidate with BE/B.Tech/M.Sc. degree as the highest qualification and 32 years for a candidate with ME/M.Tech/MS degree as the highest qualification.

   d) Relaxations for SC/ST/OBC/women/PD will be given as per the GOI norms.

Candidates with relevant work and/or prior research experience in the fields of **Computational Mechanics, Composite Materials, Finite Element Method, Fracture Mechanics and Isogeometric Analysis** are encouraged to apply.

6. Description of the OFFLINE MODE of the selection process:

Application procedure:

1. Candidates interested in this position and satisfying the qualification criteria with experience in the relevant field of research should write an email to the project investigator Dr. Sunil Kumar Singh, Department of Mechanical Engineering, IIT Patna (Email IDs: sunils@iitp.ac.in and singh.sunil943@gmail.com).

2. The **subject of the email** should read as "*JRF Position HFA-956*". The last date for receiving this email is **25th Jan 2024**.
3. The email MUST include the **scanned/pdf copy of the duly filled application form** (see attached Word document) with the applicant's signature.
4. The email MUST include self-attested scanned **pdf copy of all supporting documents** (degree certificates, mark-sheets, GATE scorecard (if any), and category certificate, if applicable).
5. Copy of all (if any) Scopus-indexed **journal papers** should be attached with the email.
6. The application should additionally include a **500-word statement of purpose (SOP)**. This document should elaborate on your interest in the broad area of this project and any relevant prior experience/skills which would help you in solving the assigned research problem.
7. The application should also include a brief **Academic CV** not exceeding two pages.

This project is specialized, time-bound, and target orientated. The qualification and experience given above in this advertisement are at the minimum requirement level and do not guarantee an interview call if other candidates with higher qualifications and/or experience desirable and commensurate with project objectives are available. Further, IIT Patna reserves the right to not shortlist any candidate in case the application email does not contain complete information backed up by supporting documents as listed above. All candidates who apply via email by **25th Jan 2024** (**deadline**) and are shortlisted will be informed regarding further details including date of Interview by **30th Jan 2024**. The tentative date of the interview in ONLINE mode will be **6th Feb 2024**.

8. **About the Project:** This project aims to develop an XIGA framework for fracture analysis of CFRP composite under hydrothermal conditions. In XIGA, NURBS basis functions, in conjunction with suitable enrichment functions, are utilized to model cracks in the CFRP composites domain. Further, experimental studies will be performed to characterises the material parameters required for XIGA model. The developed model would be useful to understand the failure mechanism of CFRP composite for its efficient use in aerospace application. Applicants may also contact Dr. Sunil Kumar Singh for further details on the research project.

Deputy Registrar

Copy to:
1. Associate Dean, R&D, IIT Patna
2. Advertisement file
3. Project file

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FORMAT OF APPLICATION FOR JRF

Name & Address **Including email id and Phone no. (for Correspondence)**	**Category** (GEN/OBC/SC/ST/PD)	**DOB** dd/ mm/yy	**Professional Exam. (GATE/CSIR-NET, etc) & Validity**
NAME IN CAPITAL Address: Phone: Email:			

Educational Qualification

Institute/ Board	**Exam Passed**	**Year of Passing**	**% of Marks/CPI**
	10th Class		
	12th Class		
	Bachelors (B.Sc/B.Tech/B.E./BCA) or equivalent		
	Masters (M.Sc/M.Tech/M.E/MCA/ MA) or equivalent		

Qualifying degree	**Degree/ major/Specialization**
(B.Sc/B.Tech/B.E./BCA)	
(M.Sc/M.Tech/M.E/MA/MCA)	
Others	

Signature of applicant

Date:
Place: