



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

**Advertisement for Junior Research Fellow**

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Applications are invited for the position of **Junior Research Fellow** in the GoI-DST ASEAN- India Collaborative R& D project (**File. No. IMRC/AISTDF/CRD/2019/000128**), SERB with the following details:

**Title of the project:**

**“Investigation on radiolucent composite sandwich materials for biomedical imaging systems under hygrothermal Environment”**

**Principal Investigator:**

**Dr. Subhaschandra Kattimani,**  
Associate Professor,  
Department of Mechanical Engineering,  
National Institute of Technology Karnataka, Surathkal  
Mangalore-575025,  
Karnataka.  
Ph: +91 9481413661  
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**Name of the Position: Junior Research Fellow**

**No. of Position/Vacancy: 01 (One)**

**Qualifications:**

**Essential Qualifications:** - B.E/B.Tech in Mechanical Engineering with a minimum of 60% aggregate score (6.5/10 CGPA) and M.Tech/M.E in Machine Design/ Mechanical Design/Design Engineering with a minimum of 60% aggregate score (6.5/10 CGPA). Candidates qualified in GATE exam with a high score will be given preference.

**Experience and Skills: -**

- 2 years' research/work experience related to the analysis of composite structures, Numerical modelling of composites/Experimental work on composite structures. Piezo/magneto elasticity problems, Medical Devices, etc.
- Analysis of structures using software such as MATLAB, COMSOL, ANSYS, etc.

**Age Limit: 28 years**

**Salary: Rs. 31,000/month**

**Duration:** Two years or up to the completion of the project, subject to satisfactory progress and annual performance review.

**Note:** *The candidate must be willing to visit universities in Vietnam and Malaysia for the research collaboration work for a one-month duration each year.*

The candidate is entitled to register for the Ph.D. programme at NITK- Surathkal through the selection process.

**How to apply:** Interested candidates must apply with the following documents; (1) Cover letter, (2) Detailed Bio-data with a 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. **Hard copies are not accepted.**

The soft copies of all the above documents (**Single file PDF format**) must be e-mailed to [subhaskatti@nitk.edu.in](mailto:subhaskatti@nitk.edu.in) (Dr. S. Kattimani) by **3<sup>rd</sup> August 2020**. Only shortlisted candidates will be intimated through e-mail and called for written test/interview in person/Online. The position is available immediately. The interview will be held during August/September 2020. The appointment will be on a purely temporary basis co-terminus with the project.

## **PROJECT DETAILS**

**PROJECT TITLE:** INVESTIGATION ON RADIOLUCENT COMPOSITE SANDWICH MATERIALS FOR BIOMEDICAL IMAGING SYSTEMS UNDER HYGROTHERMAL ENVIRONMENT

### **AISTDF-SERB- GoI**

**Scheme:** ASEAN- India Collaborative R& D project (AISTDF)-SERB

**File No.** IMRC/AISTDF/CRD/2019/000128

**Broad Area:** Engineering Sciences    **Sub Area:** Mechanical/Biomedical Devices

Duration In Month : 24

Total sanctioned amount (in Rs.) : 37,08,192=00

**Name of Principal Investigator:**    **Dr. Subhaschandra Kattimani**, Associate Professor,  
Dept. of Mechanical Engg. NITK-Surathkal

The proposal aims to carry out the experimental and numerical investigation of laminated composite sandwich beams which mimics the table of biomedical imaging systems in the hygrothermal environment in collaboration with Dr. Nguyen Thoi Trung, Ton Duc University, Vietnam and Dr. Mehdi Shariati, University Teknologi Malaysia, Malaysia. The objectives of the proposal are:

- Experimental investigation of the influence of variation of temperature and moisture on the behavior of laminated composite sandwich beams.
- To appreciate the effect of temperature and moisture on the damping behavior of laminated composite sandwich beams.
- To understand the influence of temperature and moisture loading on the behavior of biomedical imaging systems operating in a magnetic field.
- To develop an analytical/numerical model to characterize and analyze the behavior of sandwich beams and compare the obtained results with the experimental results.