Department of Mechanical Engineering
National Institute of Technology Karnataka Surathkal,
Mangalore – 575025, India

Date: 25/03/2021

Advertisement for Junior Research Fellow (JRF)

Ref. No: 1389/NITK/SERB/MECH/JP/2020-21/A9

Applications are invited from the interested candidates (Indian National) for the post of Junior Research Fellow (JRF) to work on the Research and Development (R&D) project titled "**Development of Biodegradable Microperforated Panel with non-uniform cross-section through 3D Printing for Sound Absorption Applications**" funded by Science and Engineering Research Board (**SERB**), New Delhi. The appointment will be **purely temporary** for a period maximum up to 29th February 2024. Details are given as below:

Sl. No.	Position	Area of Specialization	Maximum Duration	Consolidated Salary per month	Number of Positions
1	Junior Research Fellow (JRF)	Acoustics/ 3D Printing of Polymer Composites	Up to 29th February, 2024(up to the termination of the project)	Rs. 31,000/- + HRA*	One (01)

**HRA or hostel accommodation will be provided as per availability of fund/SERB rule/availability of hostel room*

Brief of the R&D project

Project Title	**Development of Biodegradable Microperforated Panel with non-uniform cross-section through 3D Printing for Sound Absorption Applications**
Funding Agency	Science and Engineering Research Board **(SERB),** New Delhi
Principal Investigator (PI)	**Dr. P. Jeyaraj, Dept. of Mechanical Engg., NITK Surathkal**
Co-Principal Investigator (Co-PI)	**Dr. Mrityunjay Doddamani, Dept. of Mechanical Engg., NITK Surathkal**

Detail of the Project	Environmental concern leads to the development of bio-degradable materials for various applications. Most of the materials currently being used for sound absorption (SA) and sound transmission loss (STL) applications such as Glass wool and foams are toxic and pose severe environmental and health issues. Hence, there is a need to develop biodegradable material for SA and STL applications. Most of the researchers used biodegradable resin and natural fibre in order to develop the environmentally friendly green material for SA and STL applications. Their main focus is to analyze the effect of different natural fibers and bio resin on acoustic performance of a material with and without micro perforation. Very few researchers analyzed effect of variation of perforation cross section and functionally graded porosity variation on acoustic performance of a green material. However, acoustic performance of a material can be improved by altering the porosity and its pattern through the thickness of a micro perforated panels (MPPs). However, most of the MPPs are made of perforation with constant circular/square cross section through the thickness of the panel. However, with the advancement in the additive manufacturing, it is possible to develop MPPs having perforation with varying cross section and functional gradation through the thickness. Hence, in this proposal it is planned to prepare biodegradable MPP with arbitrarily varying cross-sections and functionally graded porosity variations using natural fibre reinforced poly lactic acid (PLA) natural fibre composite (NFC) through 3D printing technique for SA and STL applications.

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Information for the Position of JRF

Essential Qualifications:	▪ B.E/B.Tech. (Mechanical Engineering) and M.E/M.Tech. in Machine Design/Manufacturing Engineering (or related areas). Candidates must have at least 60% (CGPA 6.5/10) marks in aggregate from a recognized technical institute or university as a full-time program. ▪ Candidate should have qualified GATE at least once in his academic career.
Desirable Qualification	Candidate must be able to work independently and flexibly. The following will be desirable qualities. (i) Experience of conducting tests or physical model tests in lab. (ii) Ability to carry out numerical simulation of acoustic analysis of materials (iii) Good communication and writing skills
Age Limit	32 Years or as per SERB rules (Age relaxation as per GOI rule).
Last date for receipt of the application	**15th April 2021**

Application Process:

Interested candidates may apply in the prescribed format along with CV, photo copies of relevant certificates, grade/mark sheets, publications etc. They need to send the scanned copy of below mentioned documents.

(i) Cover letter
(ii) Duly filled application form in the prescribed format with passport-size photograph,
(iii) Bio-data/Resume
(iv) Educational certificates and mark sheets (class X onwards)
(v) GATE qualified certificate and
(vi) Proof for research experience, publications, special achievements and patents, if any.

Interested candidates must fill the application form attached below and should send the **soft copies of all the documents along with duly filled application form in the prescribed format must be sent to the Principal Investigator as a single PDF file by email to the email ID: jeyaraj@nitk.edu.in on or before 15th April 2021** and hard copies of all the documents should be send to the address for correspondence (given below).

Correspondence Address:

Dr. P. Jeyaraj
Associate Professor,
Department of Mechanical Engineering,
National Institute of Technology Karnataka (NITK), Surathkal,
P.O. Srinivasnagar, Mangalore – 575 025. Karnataka, India.
E-mail ID: jeyaraj@nitk.edu.in

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Additional Information:

1. **The shortlisted candidates will be informed by email/post/phone.** Most probably it will be an online interview. The online interview is most likely to be held during **last week of April 2021.** The position will be **available immediately.**
2. Selection will be based on qualification, interview and relevant experience.
3. Selected candidates will be required to join immediately or as soon as possible (on mutual consent between PI and candidate).
4. Candidates before appearing for the interview shall ensure that they are eligible for the position, they intend to apply. The date of interview (online interview) will be communicated to the shortlisted candidates by email/phone/post. Please note that no TA/DA is admissible for attending the interview. No any extra payment will be provided if the interview will be conducted in online mode.
5. Candidates who are already employed should produce relieving certificate from their employers, if selected.
6. The appointment will be on a purely temporary basis co-terminus with the project. The selection committee decision will be final. The duration of the post is up to 29th February 2024 or up to the termination of project, subjected to performance review time to time.
7. Merely fulfilling the eligibility requirement does not guarantee shortlisting for interview; additional criteria may be imposed for shortlisting. NITK Surathkal reserves the right to reject any or all the application without assigning any reasons thereof.
8. In future, JRF may get PhD admission in fulfilling admission criteria of NITK Surathkal. However, PhD position is not guaranteed.
9. For any further information and clarification, candidates can contact Principal Investigator on the address given for correspondence.

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APPLICATION FOR THE POST OF JUNIOR RESEARCH FELLOW (JRF)

For Office Use:	Paste your recent Passport size photo
Serial Number: ……	
Eligible for Written exam/Interview: Yes / No	
Verified the Certificates: ……..	

Post Applied for	***Junior Research Fellow (JRF)***

1. Name of the Candidate: (Block Letters)			
2(a). Father's Name:			
2(a). Mother's Name:			
3(a). Date of Birth:		**3(b). Nationality:**	
3(c). Sex: Male/Female/other		**3(d). Marital Status: Married/Single**	
3(e). Category (Open/OBC/SC/ST/PWD):			
3(f) Age on 01.01.2021(in Years):			

4. Address for Communication:

(i) Address for communication:	
(ii) Mobile No:	
(iii) Email ID:	

5(a). Educational Qualifications (Attach self-attested copies of all certificates)

Name of Exam Passed	**Discipline/ Specialization**	**Board/ University/**	**Name of Institute/ College**	**Marks/ CGPA**	**Year of Passing**
X					
XII					
B.E./B.Tech					
M.E/M.Tech					
PhD					
Other					

Exam	Qualified	Marks obtained/Total marks	Rank	Year
GATE	Yes / No			

***Attach self-attested copies of all certificates.**

5(b). B.Tech/M.Tech Project Titles

B. Tech Project Titles	
M. Tech Project Titles	

6. Work/Research Experience (if yes, describe it in 200 words in a additional sheet)

Organization	Designation	Duration (Year)	Responsibilities

7. Number of Publications (Attach a separate list of publications with full details, if required):

National	International

8. Workshop/Training programs attended (Attach a separate sheet, if required):

S. No.	Details

9. Other Achievements (Attach a separate sheet, if required):

S. No.	Details

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10. Contact Details of Two Referees:

Particulars	**Referee I**	**Referee II**
Name		
Designation :		
Organization:		
Office Address :		
Contact Number:		
Email ID:		

11. Declaration: I hereby declare that I have carefully read the instructions and particulars supplied to me and that the entries made in this application form are correct to the best of my knowledge and belief. I understand that, if the provided information will be found incorrect, I may be disallowed to appear in the interview/test or terminated at any stage even after selection. If selected for the post, I promise to abide by the rules and discipline of the Institute and SERB. I note that the decision of the Institute is final in regard to selection for the post and assignment to a particular Department and field of study. The Institute shall have the right to expel me from the Institute at any time after my admission, provided it is satisfied that I was admitted on false particulars furnished by me or my antecedents prove that my continuance in the Institute is not desirable. Further, if my performance is found not satisfactory, my service can be terminated at any stage. Moreover, my service can be terminated at any stage due to shortage of fund or any other reason(s). I agree that I shall abide by the decision of the Institute, which shall be final.

Date:
Place:

Signature of the Candidate

Note: Attach the list of enclosures along with the application.

NOTE: *The envelope containing the application should be super scribed as,*

"**Application for the position of JRF under SERB project in the Dept. of Mechanical Engineering**"on
"**Development of Biodegradable Microperforated Panel with non-uniform cross-section through 3D printing for Sound Absorption**