



Department of Mechanical Engineering
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

Ref. No. CRG/2022/006131

May 04, 2023

Advertisement for Technical Assistant (TA)

Applications are invited for the position of Technical Assistant (TA) in a research and development project (**under Core Research Grant, SERB, New Delhi**) for the duration of **3 years (2023-2026)** with the following details:

Title of the project: Performance evaluation of HVOF sprayed NiAl intermetallic based composite coatings for aerospace repair and manufacturing applications

Principal Investigator:

Dr. Ramesh M R

Associate Professor, Department of Mechanical Engineering,
National Institute of Technology Karnataka, Surathkal, Mangalore-575025,
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Co-Principal Investigators:

Dr. Sharnappa J

Associate Professor, Department of Mechanical Engineering,
National Institute of Technology Karnataka, Surathkal, Mangalore-575025,
Ph: +91 8884555351
Email: sharnappaj@nitk.edu.in

Name of the Position: Technical Assistant (TA)

No. of Positions/Vacancies: One

Essential Qualification: 3 years Diploma or B.E/B.Tech in Mechanical Engineering and allied Engineering discipline with a minimum of 60% aggregate score (6.5/10 CGPA). Proof of Diploma/ B.Tech./ B.E certificate has to be provided during the interview.

Age Limit: Not more than 50 Years.

Salary:- Rs. 20,000/month + HRA (16%).

Duration: 03 year or up to the termination of the project, subject to annual performance review.

How to apply: Interested candidates must apply by filling out the attached application form along with the following documents (1) Cover letter (2) Bio-data with passport-sized photograph, (3) Scanned copies of educational certificates and mark sheets (class-X onwards) (4) Scanned copies of Proof for research experience, special achievements and publications, if any.

The soft copies of the application form and required documents (pdf format) must be **emailed to the Principal Investigator (rameshmr@nitk.edu.in) on or before 22nd May 2023**. Only

shortlisted candidates will be intimated by email/phone and invited for an interview. No TA/DA will be paid for attending the interview. The position is available immediately. Interview will be held during May/June 2023. The appointment will be on a purely temporary basis co-terminus with the project. Selection will be based on qualification, experience and the performance in the interview. NITK Surathkal reserves the right to reject any or all the application without assigning any reasons thereof.

Summary of the Project:

With increasing challenges due to surface degradation by wear, corrosion and oxidation, most of the engineering components used in the power plants or aircraft industries face problems such as reduced performance and product design life. The demand for novel material capable of addressing many issues in a single go is the need of the hour. If we speak of boilers or gas turbines, the coating needs to have high-temperature erosion, corrosion and oxidation resistance. This is mainly because addressing any one surface degradation type does not help challenge environments. It is well known that NiAl alloy possesses high-temperature properties. Still, the studies about their use as thermal spray coatings are not explored in detail, especially when NiAl is reinforced with hard phases like cBN and SiC. The NiAl, possesses an ordered crystal structure, low density, high melting point, high hardness, high mechanical strength, high-temperature corrosion and wear resistance. On the other hand, CBN and SiC particles are fundamental. They are known for their high melting point, low density, and extremely high hardness. They can exhibit high chemical resistance, good high-temperature strength, excellent thermal shock resistance, and excellent wear and abrasion resistance. These attributes are the perfect choice as a reinforcing phase for tackling surface degradation issues. So, this proposal focuses on developing novel NiAl composite coatings with CBN and SiC as reinforcing phases using HVAF and laser remelting techniques. The produced coatings could be used to protect boiler components in power plants or repair some aircraft components. The NiAl with CBN or SiC composite coatings will be using HVAF and laser remelting techniques. The main experiments that will be performed are hightemperature sliding wear, erosion and oxidation tests. How the addition of cBN and SiC will affect the high-temperature behaviour of NiAl composite coatings will be studied in detail.



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APPLICATION FOR THE POST OF TECHNICAL ASSISTANT (TA)

NAME		RECENT PHOTO		
ADDRESS				
EMAIL				
PHONE				
DATE OF BIRTH				
GENDER				
NATIONALITY				
EDUCATION QUALIFICATION				
DEGREE	SUBJECT/STREAM	COLLEGE/UNIVERSITY	MARKS/CGPA	YEAR OF PASSING
10TH				
12TH				
DIPLOMA				
BE/BTECH				
IF ANY OTHER				
WORK EXPERIENCE (IF ANY)				
DURATION	ORGANISATION	DESIGNATION	NATURE OF WORK	
DETAILS OF PUBLICATIONS (IF ANY)				
WORKSHOP/TRAINING PROGRAMS ATTENDED (IF ANY)				
ANY OTHER RELEVANT INFORMATION				
All the above information provided by me is true to the best of my knowledge and I understand that, if found incorrect, I may be disallowed to appear in the interview/test				
Place :				
Date:		Signature of the candidate		

