



# Birla Institute of Technology and Science, Pilani

## Hyderabad Campus

### Junior Research Fellow Position

Date: 15<sup>th</sup> November 2021

Applications are invited for one Junior Research Fellow (JRF) position in a SERB-SRG funded project entitled "**Development of Tribologically Optimized Laser Cladded Friction Material for Automotive Brake Pad-Disc System**", under the supervision of Dr. Piyush Chandra Verma (PI, BITS Pilani Hyderabad campus).

Selected JRF may be considered for a PhD program of BITS-Pilani subjected to fulfilment of eligibility criteria.

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#### Project Description:

The research focuses on the development of the advanced tribologically optimized laser cladding friction material for the automotive brake pad-disc system, that has novel employability in supporting the wear reduction mechanism without compromising the mechanical-frictional performances and also reducing brake dust load. The candidate is therefore required:

- to organize the research project, bibliographic review and fabrication of next-generation tribo pair.
- to carry out tribological tests (Pin-On-Disc tribometer) under dry sliding conditions.
- characterization of wear products (fragments and worn surfaces) with X-ray diffraction techniques, optical microscopy and scanning electron microscopy.
- a transient thermo-mechanical finite element analysis (FEA) to determine the friction efficiency of the advanced tribo-pair.

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#### Required Qualifications:

- M.E./M.Tech. in Metallurgy / Material Science / Mechanical Engineering or any relevant areas.
- Experience in MATLAB/ANSYS simulation is essential.
- Strong background in friction and wear of materials under dry sliding conditions, problem-solving, analytical thinking and troubleshooting ability.
- Highly proficient in spoken and written English.
- Candidates with relevant publication(s) will be preferred and GATE will add advantage.

**Fellowship:** Rs. 31000 per month.

**Duration:** Two years.

**Place of work:** Department of Mechanical Engineering, BITS Pilani - Hyderabad Campus.

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#### How to Apply:

Interested candidates with the above-mentioned qualifications can send a soft copy (**single pdf**) of their applications via email with the subject "**Application for JRF Position\_001174**" with

1. Cover Letter (showing alignment and justification with the roles/responsibilities/requirements)
2. Detailed CV including educational qualifications (10th standard onwards), technical skills, research experience, project details and published papers (if applicable)
3. Details and soft copies of certificates.
4. GATE/NET score card (if applicable)

The applications should reach before **30th November 2021**, to the Principal Investigator, Dr Piyush Chandra Verma via email ([piyushchandraverma@hyderabad.bits-pilani.ac.in](mailto:piyushchandraverma@hyderabad.bits-pilani.ac.in)). The position will be filled as soon as suitable candidate is found and hence applicants are advised to apply at the earliest if interested. Shortlisted candidates will be called for the interview to be held using Google Meet.

For any query regarding the application for position, the applicant may contact the PI on email or office phone number.

Dr. Piyush Chandra Verma (Principal Investigator)

Contact Email (PI): [piyushchandraverma@hyderabad.bits-pilani.ac.in](mailto:piyushchandraverma@hyderabad.bits-pilani.ac.in)

Phone: +91 40 66303599

URL (PI): <https://universe.bits-pilani.ac.in/hyderabad/piyushev/Profile>