



UNIVERSITY OF LEEDS

## CANDIDATE BRIEF

Research Fellow in Tribology as an Enabling Technology,  
Faculty of Engineering & Physical Sciences



**Salary: Grade 7 (£33,797– £40,322 p.a.)**

**Reference: EPSME1005**

**Fixed-term for up to 24 months**

**We will consider flexible working arrangements**

## Research Fellow, Tribology as an Enabling Technology, School of Mechanical Engineering

**Are you an ambitious researcher looking for your next challenge? Are you able to think outside the box to find innovative solutions for bringing tribology forward as a useful enabling technology? Do you have a background in tribology, surfaces or interfaces? Have you got skills in 3D nanomanufacturing? Do you want to join a world-leading team of functional surface researchers? And do you want to further your career in one of the UK's leading research intensive Universities?**

We are looking for a proactive individual to join our Institute of Functional Surfaces ([IFS](#)), bringing with you your excitement for ground breaking collaborative research. You will join this vibrant research institute and be part of several projects investigating Tribology (as an enabling technology).

Tribology is an enabling technology and in this new EPSRC grant awarded through the International Centre-to-Centre Scheme, we will be progressing the understanding of grasping as a limitation in robotic systems and developing tribo-based manufacturing techniques. You will undertake a highly collaborative academic research position, as defined in the work plan developed between leading researchers at the University of Leeds and the University of Sheffield.

This is in partnership with our world-leading nano-manufacturing and robotics partners in Europe and the United States. Holding a PhD degree (or close to completion) in numerical methods related to Tribology and/or experience of small scale fabrication research. You will have experience of developing experimental validation of numerical models and an understanding of the challenges associated with modelling tribological systems. This together with a positive approach to collaborative research.

Approximately, 3 x three month periods of overseas secondment work are required for this 2 year post at our research partners' sites (Norway, Germany and USA).



## What does the role entail?

As a Research Fellow your main duties will include:

- Experimental/numerical role to develop means to fabricate nanostructured surfaces using tribo-based techniques;
- To manufacture nanocomposites and tribofilms with well-defined properties;
- To assess stress-induced tribochemical reactions at the sliding interface during relative movement;
- To further deliver the programme of research in the field of tribology as an enabling technology as set out by the lead investigators;
- To take responsibility to deliver the programme objectives defined in the work plan which will involve developing your own research objectives in line with the project aim and objectives;
- To liaise with the industrial partners and appropriately present the required results to a high standard;
- Perform and attend regular impact, exploitation and outreach activities;
- To supervise PhD students associated with the programme;
- To prepare reports for the EPSRC funders on the progress of the research;
- To write up the results of the research for publication in peer reviewed journals in order to maximise the external impact of the research;
- To continually update your knowledge and understanding in the field and specialism.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

## What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or close to completion) in numerical methods, and/or experimental micro/nanotribology;
- Good laboratory skills (i.e. working methodically and accurately, maintaining lab notebooks, adhering to Health & Safety regulations and taking part in general lab care duties);
- Experience of developing experimental validation of numerical models;



- An understanding of the challenges associated with modelling tribological systems;
- Ability to organise own research activities, collaborations and resources to deadline and quality standards;
- Experience of advanced surface analysis with scanning probe microscopy techniques (e.g. AFM);
- Ability to develop and understanding of complex processes and apply in-depth multi-disciplinary knowledge to solve research problems;
- Experience of research analysis;
- Experience of working collaboratively with industry or experience in industry;
- Good time management and planning skills with a track record of successful and timely delivery in an academic environment;
- Ability to work effectively in a team;
- Strong written and verbal communication skills;
- Experience of writing reports and research papers;
- Good record of publishing research work.

You may also have:

- Ability to work and travel internationally to Norway, Germany and USA;
- Substantial experience of international conference presentations;
- Experience of public engagement and partnership;
- Experience of supervision of PhD and undergraduate students.

## How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

## Contact information

To explore the post further or for any queries you may have, please contact:

[Professor Ardian Morina](#), School of Mechanical Engineering

Tel: +44 (0)113 343 36965

Email: [a.morina@leeds.ac.uk](mailto:a.morina@leeds.ac.uk)



## Additional information

### Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering and Physical Sciences](#) and the School of Mechanical Engineering.

### A diverse workforce

The Faculty of Engineering and Physical Sciences is proud to have been awarded the [Athena Swan Silver Award](#) from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

### Working at Leeds

Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our [Working at Leeds](#) information page.

### Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at [disclosure@leeds.ac.uk](mailto:disclosure@leeds.ac.uk).

## Criminal record information

### Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

