



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

**Research Fellow in Continuum Modelling,
Faculty of Engineering and Physical Sciences**



Salary: Grade 7 (£37,099 – £44,263 p.a.) Due to funding restrictions, an appointment will not be made higher than £39,347 p.a.

Reference: EPSMA1100

Closing date: Sunday 31 December 2023

Fixed term until 14 October 2024, available from 01 January 2024

We are open to discussing flexible working arrangements

Research Fellow in Continuum Modelling, School of Mathematics.

Are you an ambitious researcher looking for development of your research profile in an exciting new area of continuum mechanics? Do you want to further your career in one of the UK's leading research-intensive Universities?

We are looking for a Research Fellow to join our project developing continuum modelling approaches in a new direction of continuum mechanics addressing the fluid dynamics of polycrystalline materials.

The project is funded by the [Engineering and Physical Sciences Research Council](#). You will work with the lead Investigator, Dr Sam Pegler, on developing a new continuum approach in an exciting new area in modelling the dynamics of polycrystalline materials using continuum mathematics. The aim is to develop and explore new mathematical models describing the flow and evolution of polycrystalline materials. Such materials are ubiquitous, forming the majority of the rocks and minerals of the Solid Earth, as well as ice, a material fundamental to our natural environment. The role will require formulating a new general modelling framework and solution methods by coupling partial differential equations describing the evolution of the material's crystal microstructure to those describing its macroscopic viscous flow.

You will have a PhD in Mathematics, Physics, or a related discipline, with a strong background in continuum mechanics, including mathematical and/or numerical simulation approaches in continuum mechanics. Familiarity with non-Newtonian fluid mechanics would be helpful but not required. You will have the ability to conduct independent research and develop a track record of publications in international journals. In addition, you will have good communication and team-working skills.

What does the role entail?

As a Research Fellow, your main duties will include:

- Developing a general mathematical framework for modelling polycrystalline materials;
- Applying mathematical, numerical and/or asymptotic methods of solution in fundamental configurations;



- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals, and contributing to setting the creative direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals and by presentation at national and international meetings;
- Working independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own research;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

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 have submitted your thesis before taking up the role) in Mathematics, Physics or a closely allied discipline;
- A strong background in any area of continuum mechanics;
- The ability to develop expertise in newly developing area of fluid mechanics;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively without close support;
- A developing track record of peer-reviewed publications in international journals;
- Excellent communication skills both written and verbal, and the ability to communicate your research at national and international conferences;
- A proven ability to work well both individually and in a team;



- A strong commitment to your own continuous professional development.

You may also have:

- Experience of pursuing external funding to support research;
- Expertise in the dynamics of non-Newtonian flows, numerical simulation and mathematical methods.

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:

[Dr Sam Pegler](#), Lecturer, School of Mathematics

Email: S.Pegler@leeds.ac.uk

Additional information

Faculty and School Information

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

A diverse workforce

As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Engineering and Physical Sciences we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.



The Faculty of Engineering and Physical Sciences are 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

We are a campus-based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at hr@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.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

