



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Advanced Metal Powder Production Techniques,
Faculty of Engineering



Salary: Grade 7 (£32,548 – 38,833)

Reference: ENGPE1118

Closing date: 01 January 2018

Fixed-term for 2 years

Research Fellow in Advanced Metal Powder Production Techniques

School of Chemical and Process Engineering

Are you an ambitious researcher looking for your next challenge? Do you have a background powder metallurgy or gas atomisation processes? Do you want to further your career in one of the UK's leading research intensive Universities?

We are seeking to appoint a talented and highly motivated Research Fellow to develop gas atomisation techniques with improved powder size distribution control and for the production of heterogeneous powders. This role is part of an EPSRC funded collaborative project the 'EPSRC Future Manufacturing Hub in Manufacture using Advanced Powder Processes' ([MAPP](#)). The project is a collaboration between the Universities of [Leeds](#), [Sheffield](#), [Oxford](#), [Manchester](#) and [Imperial College](#), together with 17 industrial partners and seven high value manufacturing [Catapult](#) centres. The project brings together modelling and experimental expertise to address the complex challenge manufacturing using advanced powder processes for additive manufacturing.

Your research will primarily involve developing an integrated experimental and computational programme of research to improve the stability and efficiency of the gas atomisation process leading to improved control of the powder product.

Holding a relevant PhD (or close to completion), in Materials Science, Physics, Chemical Engineering, Mechanical Engineering, or similar, you will have demonstrated expertise in the use of high speed video in process monitoring and control and a demonstrated understanding of powder metallurgy and the techniques used for the production of powder metals.

What does the role entail?

As a Research Fellow your main duties will include:

- Co-ordinating the high speed filming of gas atomisation processes in research and industrial settings;
- Development of novel image processing methodologies for the quantitative analysis of these videos;



- Benchmarking of computational fluid dynamics models of gas atomisation against experimental results;
- Operation of the Leeds 6.5 m drop-tube for metal powder production;
- Metallographic preparation of metal powders and analysis using optical and scanning electron microscopy;
- Working independently on a day to day basis, with the support of supervisors as appropriate, setting own direction and goals and taking accountability and responsibility for the successful, on time, delivery of the allocated project tasks and objectives;
- Contributing to overall project management and development of research objectives, suggesting revisions were necessary, to ensure that project objectives are met;
- Applying initiative, creativity and judgement to find solutions to meet the project aim and generate original research ideas;
- Actively collaborating with academic and industrial partners to maximise the success and impact of current and future research;
- Writing up results of the research for publication in leading international peer-reviewed journals, and presenting findings at consortium meetings and at international conferences;
- Contributing to the administration, support and development of a world class research group in Leeds;
- Contributing to the support, training and management of Masters, Doctoral and Summer students;
- Contributing to the research culture of the School.

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 relevant PhD (or close to completion), in Materials Science, Physics, Chemical Engineering, Mechanical Engineering, or similar;
- A proven track record of publication in leading internationally refereed journals;
- A demonstrated expertise in the use of high speed video in process monitoring and control;



- A demonstrated understanding of powder metallurgy and the techniques used for the production of powder metals;
- A demonstrated ability in the use of MATLAB, particularly for image analysis and signal processing;
- A proven ability to work well both individually and in a team;
- Demonstrated ability of contributing to administration, support, development and management of research team activities;
- Good time management and planning skills, with the ability to meet tight deadlines and work effectively under pressure, and the demonstrated ability to plan and execute research tasks and manage projects;
- Demonstrated ability to set your own direction and goals without close supervision, showing initiative, and creativity;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience of using computational fluid dynamics software such as Ansys Fluent and OpenFoam;
- Experience in the successful project supervision at undergraduate, Masters and/or PhD levels.

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 Andy Mullis](#), School of Chemical and Process Engineering

Tel: +44 (0)113 343 2568

Email: A.M.Mullis@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 the School of [School of Chemical and Process Engineering](#).

A diverse workforce

The Faculty of Engineering 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.

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.

