

In Partnership with:

16 Fully-funded PhD Studentships with Industrial Top-up

EPSRC Centre for Doctoral Training in Innovative Metal Processing (IMPACT)

Industry Need: The metals industry accounts for 46% of all EU manufacturing value and 11% of the EU's total GDP. This equates to an added value of about €1.3 trillion annually, or €3.5 billion per day in the EU. However, many companies in the UK find that the lack of well-trained metals engineers remains a major concern for high-value manufacturing industry, e.g. the aerospace, power generation, gas and oil, and offshore engineering sectors.

The Centre: IMPACT was created to train future leaders who are able to fully exploit and deploy innovative metal processing techniques in industry. It brings together world-class metals research teams from the universities of Leicester, Birmingham and Nottingham along with 14 industrial and international partners. The Centre has secured significant financial support from EPSRC, the universities and our industrial partners including Alstom Power, Doncasters Group, Rolls-Royce, STFC, Tata Steel, TWI and Welding Alloys.

Training: The studentships are for a 4-year integrated training programme. In the first year you undertake a range of Masters level training modules covering technical and transferable skills, involving all three universities and take work experience with our industrial partners. In the following three years, you will carry out research for a PhD in a particular topic, using appropriate research facilities in the three universities and spending time working with your industrial partners. IMPACT will provide the integrated experimental, analytical, modelling and transferable skills training which is required for innovation in industry. Beyond this, there will be an array of student-led events, e.g. mini-symposia, workshops and summer schools. Studying metal processing at IMPACT will be invigorating, challenging and rewarding. You will nurture friendships, forge new research directions, and develop the skills and expertise required for a fulfilling career leading the UK aerospace and energy sectors to new levels of innovation and added value.

Core Research Topics:

- 1 **Casting:** e.g. investment casting of Ni-base alloys for aerospace and power generation applications
- 2 **Welding:** including novel dissimilar welding & joining techniques for gas and oil transportation systems
- 3 **Surface Engineering:** e.g. advanced functional coating, surface modifications for turbine applications
- 4 **Near Net-Shape Forming:** including laser assisted metal forming, novel hot isostatic pressing
- 5 **Synthesis of Nanomaterials:** e.g. synthesis of nanoparticles for advanced materials and coatings
- 6 **Characterisation & Performance Evaluation** of power generation and aerospace materials and structures
- 7 **Modelling of Metal Processing:** e.g. multi-scale multi-physics modelling of 3D printing, casting, welding

Candidate requirements: We're looking for exceptional candidates, with or about to obtain at least a high 2:1 Honours degree, from across all engineering and science subjects.

Funding: Enhanced EPSRC studentships covering fees, travel expenses, and a minimum stipend of £13,726 plus industry top-up of up to £4,000 per annum for 4 years for UK students; funding is also available to a limited number of exceptional international students.

Start date: September 2014

How to apply: Please make an online application at www.impact.ac.uk.

For informal inquiry, please email: hd38@le.ac.uk

Deadline for application: 30th May 2014

