Imperial College London

Department of Materials

PhD Studentships in Next-generation Aircraft Propulsion Materials

Duration: 36 months

We are seeking two motivated candidates for fully-funded PhD studentship in the exciting field of high performance alloys for next-generation aero-engines. The studentships include fees and a stipend of £16,553 for suitable candidates ordinary resident in the UK or EU nationals for the duration of 3 years.

New and improved alloys are providing the opportunity to reduce weight and increase operating temperatures, thus improving flight efficiencies whilst reducing polluting emissions. Understanding the behaviour and performance of these materials are crucial to optimise their design and hence minimise damaging effects to our environment. Successful applicants will join Imperial's BIAM Centre for Materials Characterisation, Processing and Modelling in which we integrate experiment, characterisation and modelling for materials optimisation. Two key projects are currently available with strong industrial linkage:

i) Understand the role of microstructure on high temperature mechanical behaviour of superalloys. S/he will need to establish the relationships between long-term response and microstructural evolution based on macro/micro-mechanical testing and scanning/transmission electron microscope (S/TEM) and electron backscattered diffraction, together with subsequent modelling.

ii) Establish new computational modelling methods at the appropriate linked scales from molecular dynamics, discrete dislocation and crystal-level approaches in order to aid mechanistic understanding and provide quantitative predictive tools for materials design.

The qualified candidates will join a dynamic research team with a research focus on materials performance, additive manufacturing, microstructures and modelling of high performance alloys in the department of Materials at Imperial College London. Applicants should have knowledge in one or more of: microstructure of metallic alloys, electron microscopy, mechanical testing, computational modelling. Good teamwork and communication skills are essential. In addition, the candidates should have (or be expecting to obtain) a first degree (1st class or upper second class) in materials, mechanical engineering or a relevant subject.

How to apply:

The prospectus, entry requirements and application form (under 'how to apply') are available at: http://www.imperial.ac.uk/pgprospectus

For further details of the posts, please contact Dr Minh-Son (Son) Pham at son.pham@imperial.ac.uk, phone: +44 (0)20 7594 9529 for post (i), or Prof Fionn Dunne at fionn.dunne@imperial.ac.uk for post (ii). Applicants should send a CV and covering letter and will be required to complete an electronic application form. It is expected that the studentship will begin by 1 October 2017.

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Closing date: one month from placement

Imperial Managers lead by example.

Committed to equality and valuing diversity. We are also an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Two Ticks Employer, and are working in partnership with GIRES to promote respect for trans people