Imperial College London
Department of Materials

PhD studentship on Novel Crystal-inspired Hierarchical Lattice Design by 3D Printing

Supervisor: Dr Minh-Son (Son) Pham

Duration: 36 months

We are seeking a motivated candidate for EPSRC-funded PhD studentship in the exciting field of novel lattice design by 3D printing. The studentship includes fees and a stipend of £16,553 for UK home students for the duration of 3 years.

Additive manufacture (AM) via 3D printing holds great potential for manufacturing high-end bespoke products in aerospace, automobile and medical applications. However, there are challenges in making high performance and reliable products by AM. At Imperial College London, we currently pursue a novel approach inspired by strengthening mechanisms in crystals to manufacture strong lightweight but damage tolerant components by 3D printing. We have successfully developed novel CAD models that include crystal microstructure-like features in lattice cellular structures. The qualified candidate will simulate and predict the deformation hardening behaviour of multi-scale hierarchical lattices by using designed CAD models in combination with advanced crystal plasticity-based modelling to guide the lattice design of extraordinary lightweight and tough components. Subsequently, s/he will team up with other team members to fabricate lattice components by plastic and metal 3D printers, and effectively collaborate with our key academic and industrial partners in UK and USA.

The qualified candidates will join a dynamic research team with a research focus on additive manufacturing and microstructures in the department of Materials at Imperial College London. Applicants should have knowledge in one or more of: 3D printing, computational modelling and microstructures of metallic alloys. 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 20 7594 9529. 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