PhD studentship opening

Laboratoire Interdisciplinaire de Physique, Grenoble, France and University Heriot Watt, Edinburgh, Scotland

Starting October 2015 (Deadline for Application May 05, 2015)

« Adsorption-induced mechanical reinforcement of materials. Towards the design of blast tolerant hybrid materials »

The project is inspired by the observation that adsorbing a soft component inside the porosity of a solid host can quadruple the materials stiffness and significantly increase its strength. We envisage this to be a viable route to superior materials based on the interplay between soft and hard components that also lends biological materials their superior mechanical characteristics. To enable the *design* of these novel materials we will investigate the origin of the reinforcement effect and develop a theoretical framework to quantitatively predict the resulting material properties. To achieve this molecular simulation relying on Statistical Mechanics will be combined with poromechanics and the theory of fracturation.

The position : The PhD studentship (3 years) is funded by the French Army General Direction. The gross salary is 1760 €/month and support for travel is provided (the net salary is about 20% less). The student will be supervised by Dr. Benoit Coasne (Grenoble, France) and Dr. Henry Bock (Edinburgh, Scotland). The first half of the PhD thesis (18 months) will take place in France and the second half in Scotland. The anticipated starting date is Oct. 01, 2015 (Mar. 01, 2016 the latest).

The candidate : Considering the funding opportunity, potential candidates (1) must be citizen of the European Union or Switzerland, (2) must not have started a professional carrier, and (3) must (at the start of the project) have a Masters Degree (or equivalent). Applicants should provide a CV, a letter of motivation, and the names and e-mail addresses of 2 or 3 references.
For enquiries and applications please contact **Benoit Coasne**, coasne@mit.edu or **Henry Bock**, h.bock@hw.ac.uk.

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