

Imperial College London

Department of Mechanical Engineering

PhD Studentship in Lubrication/Complex Fluid Structure and Rheology

Applications are invited for a research studentship in the field of Tribology, leading to the award of a PhD degree. The post is supported by a bursary and fees (at the UK/EU student rate) provided by a CASE award, which is co-funded by EPSRC and Shell. You will be an UK or EU candidate meeting the Research Council criterion of having been resident in the UK for the previous 3 years. Please check your suitability at the following web site:

<http://www.epsrc.ac.uk/skills/students/help/Pages/eligibility.aspx>

This experimental project looks into molecular behaviour of lubricants under high pressure and high shear, Elastohydrodynamic (EHD), conditions. It is multidisciplinary, combining tribology, rheology, fluids mechanics, chemistry, physics and materials science. It examines how fluid behaviour in the molecular level affects macroscopic response of engineering systems. The goal is to make machine greener, more efficient and more reliable through effective lubrication.

The behaviour of EHD lubricants is rich and complex. EHD lubricants can be Non-Newtonian. Local structure can develop depending on servicing conditions and these heterogeneities can form and break dynamically, affecting the lubricant effectiveness. The project will examine these phenomena; understand their molecular origins as well as their effects in tribology and lubrication with recently developed, in-situ fluorescence spectroscopic techniques.

You will be part of the Tribology Group, you will work closely with computational analysts, as well as Shell, the industrial sponsor of the project. You will be an enthusiastic and self-motivated person who meets the academic requirements for enrolment for the PhD degree at Imperial College London. You will have a background in Mechanical, Chemical or Aeronautical Engineering; Physics, Chemistry, or a related field. You have an enquiring and rigorous approach to research, together with a strong intellect and disciplined work habits. You should have a strong interest in experimental work. Training will be given in tribology and various investigative techniques. Good team-working, observational and communication skills are essential.

To find out more about research at Imperial College London in this area, go to:

<http://www3.imperial.ac.uk/mechanicalengineering>

For information on how to apply, go to:

<http://www3.imperial.ac.uk/mechanicalengineering/research/phdopportunities/>.

For further details of the post contact Dr Janet Wong j.wong@imperial.ac.uk. Interested applicants should send an up-to-date curriculum vitae to Dr Wong. Suitable candidates will be required to complete an electronic application form at Imperial College London in order for their qualifications to be addressed by College Registry.

Closing date: 30th April 2015

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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