Imperial College London

Department of Mechanical Engineering

PhD Studentship in Additives for EV lubrications

Applications are invited for a research studentship in the field of Additives for EV lubrications leading to the award of a PhD degree. The post is supported by a bursary and fees (at the UK student rate) provided by Shell UTC. To be eligible for support, applicants must be "UK Residents" as defined by EPSRC. International students considered.

This project is a part of a large effort for our zero transition initiatives. Our goal is to design the best coolant and lubricant for EV through a fundamental understanding on how we may control the behaviour of additives under the influence of an electric field. This has a direct impact on the performance and reliability of EV. Ultimately, we aim to revolutionise lubricant technology by creating smart, responsive lubricants that can lubricate on demand!

In this experimental project, the PhD researcher will examine how an application of an electric field affects the behaviour of various additives. This will involve both fundamental and applied studies. The researcher will design experimental setup that allows various additives properties to be measured in situ and in real time during rubbing. This will allow a direct correlation between additive behaviour and tribological performance of a lubricant. The project will also be supplemented using other techniques, include advanced laser spectroscopies, and various surface and chemical characterisation techniques.

This project will be based at Imperial College with regular interaction with our project partners. The PhD researcher will be a part of the Shell UTC and the Tribology Group. It offers a vibrant, multidisciplinary and multicultural working environment. Laboratories were recently refurbished and are well equipped with an extensive range of instrumentation and extensive computer facilities.

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 hold, or be expected to achieve, a Master's degree or a 4-year undergraduate degree at 2:1 level (or above) in a relevant subject, e.g. Chemical or Mechanical Engineering, Materials, Chemistry, Physics or a related field. You will have an enquiring, rigorous and hands-on approach to research, together with a strong intellect and disciplined work habits. An interest in experimental work and development is essential, as are good team-working, observational and communication skills.

To find out more about research at Imperial College London in this area, go to:
https://www.imperial.ac.uk/mechanical-engineering/research/

For information on how to apply, go to:
http://www.imperial.ac.uk/mechanical-engineering/study/phd/how-to-apply/

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. 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: until post filled