Applications are invited for a research studentship in the field of Thermofluids/Internal Combustion Engines 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 an EPSRC CASE award with BP. Candidates should fulfil the eligibility criteria for the award. Please check your suitability at the following web site:

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

Please do not make enquiries or apply formally unless you fit the eligibility criteria.

Project Description

There is increasing focus on lubricant transport through the engine ring pack into the combustion chamber due to concerns over its impact on low-speed ignition, particle emissions as well as oil consumption. In addition the friction in this region accounts for the largest proportion of total mechanical loss. This project aims to develop the ability to measure inter-ring pressures simultaneously with lubricant film thickness and flow patterns to study lubricant transfer mechanisms. Specifically, advanced experimental techniques (including Laser-based optical diagnostics) will be used to quantify the interaction of ring dynamics with lubricant and gas flows leading to propensity for local cavitation and transport mechanisms into the engine’s combustion chamber. The ultimate goal is to develop understanding of lubricant formulation parameters that can influence directly the studied phenomena and offer validation data for CFD modellers. A single-cylinder spark-ignition research engine with purposely designed optical access will be used to enable development and application of all necessary diagnostic techniques. The project is in close collaboration with BP's research and innovation group on fuels and lubricants in the UK.

You will be an enthusiastic and self-motivated person who meets the academic requirements for enrolment for the PhD degree at Imperial College London. Ideally you will have a 1st class honours degree in mechanical engineering or a related subject, and an enquiring and rigorous approach to research together with a strong intellect and disciplined work habits. A keen interest in experimentation and engine systems is essential. Good team-working, flexibility, observational, practical and communication skills are all essential for this post.

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://www.imperial.ac.uk/mechanical-engineering/study/phd/how-to-apply/

For further details of the post contact Prof Pavlos Aleiferis p.aleiferis@imperial.ac.uk +44 (0)20 7594 7032. Interested applicants should send an up-to-date curriculum vitae to Prof Aleiferis. 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. The starting date is expected to be in late October/early November 2016.

Closing date: until post filled

*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.