

Imperial College London
Department of Mechanical Engineering
PhD Studentship in Thermofluids

High Efficiency Concepts for Advanced Combustion Engines

Applications are invited for a research studentship in the field of Thermofluids with focus on developing and understanding new combustion concepts for high-efficiency gasoline engines using advanced experimental techniques 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 Jaguar Land Rover (JLR). Candidates should be UK/EU nationals; please do not make enquiries or apply formally unless you fit this eligibility criterion.

Project Description

This experimentally focused project will investigate the fundamentals of fuel injection, mixture formation and combustion in an advanced gasoline single cylinder thermal research engine with focus on developing a new high-efficiency combustion system with ultra low emissions, utilising flexible valvetrain and boosting systems to investigate advanced combustion modes. The student will be expected to take responsibility for design of the test programmes and operation of the test facility to ensure the quality of results. Work may also be carried out in a single-cylinder optical research engine of the same geometry to that of the thermal engine in order to study in-cylinder spray formation and combustion phenomena using Laser-based optical diagnostic techniques. The project is in close collaboration with Jaguar Land Rover (JLR) and will be based in the JLR Centre of Excellence (CoE) for Spark-Ignition Engine Research established in the Thermofluids division of the Department of Mechanical Engineering at Imperial College London. The Thermofluids Division has an internationally leading record, established over several decades, in pure and applied research into multiphase flows and heat and mass transfer.

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. Given the strong experimental focus of the project, 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 first an up-to-date curriculum vitae to Prof Aleiferis. Suitable candidates will then be asked to complete an electronic application form at Imperial College London in order for their qualifications to be addressed by College Registry. The starting date for this PhD project is expected to be by September 2018.