Applications are invited for a fully funded EPSRC PhD studentship within the thermo-fluids group, University College London, to study in areas related to laser diagnostics applied to combustion. The candidate will join a well-established, vibrant research group of international standing, with excellent experimental and computing facilities.

Combustion instabilities represent one of the most challenging problems hindering the development of low-emission aero- and industrial- gas turbine combustors. These instabilities are characterised by strong pressure oscillations in the combustion chamber due to a complex interaction between thermo-acoustic and fluid-dynamic processes. These high amplitude oscillations can have a detrimental effect on combustor performance and may cause catastrophic failure of the system.

This project aims to study and compare mechanisms of such flame oscillations in a model gas turbine combustor and assess and understand the role of hydrogen addition in improving the dynamic stability and emission performance of the combustor, using simultaneous measurements of flow and heat release via advanced laser diagnostic techniques. The results from this research will aid the development of future low emission industrial combustors strategies.

Successful applicants are expected to have obtained a 1st class or upper 2:1 degree in engineering, chemistry, physics, or a related discipline with an interest in experimental work. EPSRC student eligibility criteria apply.

Value of award: Full funding including fees and maintenance is available. Up to £ 15, 000 p. a. tax free stipend is available. Full tuition fees will be paid at the UK rate.

Expected start date: August 2009

Contacts:
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