



中国科学院力学研究所

高温气体动力学国家重点实验室



学术报告: **Optical Combustion Studies Relevant to Gas Turbines Combustors and Automotive Engines**

报告人: **Yannis Hardalupas**
Mechanical Engineering Department,
Imperial College London, United Kingdom



时间: 2017年8月21日 (周一) 上午9:30

地点: 中国科学院力学研究所1号楼312会议室

摘要:

The talk will address combustion related issues that arise in gas turbine combustors for aeroengines or power generation applications and in-cylinder combustion in Spark or Compression Ignition automotive engines. The emphasis will be on experimental studies using optical diagnostics. Links of the research to industrial problems, theory and computational modelling will be explained. The development of novel optical diagnostics will be presented in order to measure quantities that are important for the underlying physics. The talk will address the following items: (i) quantification and importance of degree of premixedness between fuel and air in gas turbine combustors and spark ignition engines; (ii) velocity and flame characteristics during combustion oscillations; (iii) quantification of scalar dissipation and its influence on autoignition of unsteady fuel sprays relevant to Compression Ignition engines; (iv) liquid fuel atomisation, evaporation and ignition at critical pressure and temperature.

报告人介绍:

Prof. Y. Hardalupas, DIC, PhD, FInstP. Professor of Multiphase Flows, Imperial College London, Mechanical Engineering Department. He received Mechanical Engineering degree from National Technical University of Athens, Greece in 1984. After completing his PhD at Imperial College London, he was awarded an EPSRC Advanced Research Fellowship on experimental research on combustion of liquid and solid fuels in 1994. He joined the academic staff at Mechanical Engineering Department of Imperial College in 1997 and was promoted to Professor in 2009. He was awarded an industrial secondment to Ricardo Consulting Engineers in 1999, sponsored by the Royal Academy of Engineering, for development of computational models for atomization of liquid fuels in IC engines. Fellow of the Institute of Physics, Associate fellow and member of the technical committee of Propellants and Combustion of the American Institute of Aeronautics and Astronautics (AIAA). He chairs the Combustion Physics Group of the Institute of Physics and serves at the editorial board of *Experiments in Fluids*, *J. of Combustion* and *Int. J. of Spray and Combustion Dynamics* and at the advisory committees of several international conferences. Author of more than 250 peer reviewed papers. His research grant and industrial contract support have been from Engineering Physical Sciences Research Council (EPSRC), European Union, Ford, Honda, Shell, Nissan, BP, Rolls-Royce, Siemens, Mitsubishi, P&G, Unilever, AFOSR, Culham Centre Fusion Energy (CCFE), Continental GmbH, Delphi. In addition to his contributions in the areas of combustion, heat and mass transfer, liquid atomization and sprays, the development of novel optical techniques has led to patents for novel instruments on powder sizing, planar droplet sizing and nanoparticle sizing.

欢迎所内外科研究人员和研究生参加!