



Post-doc in modelling turbulent multi-phase reacting flows

Never Stand Still

Engineering

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The School of Mechanical and Manufacturing Engineering at the University of New South Wales (UNSW), Australia, is seeking an outstanding candidate to fill a post-doctoral research position in computational reacting flows.

The research will involve direct numerical simulations and large-eddy simulations focussing on the interactions of turbulence, chemistry, particles, and/or radiation. More than one research project is available at this time, so there is some flexibility in the position. One project involves modelling of combustion and soot formation in low-temperature combustion engines, while another project involves modelling of flows relevant to high flux solar furnaces, where concentrated solar radiation drives endothermic reactions in particle-laden flows.

The post-doc will be responsible for development of modelling capabilities, demonstration of these capabilities in a series of test cases using cutting edge super-computing resources, and analysis of the test cases to expose the fundamentals of the interactions involved. The post-doc will also be responsible for day to day supervision of 2-3 PhD students working on the projects.

Expertise required for this appointment include: an extremely strong understanding of at least one of the areas of turbulent combustion, turbulent multi-phase flows, or turbulence-radiation interactions; very strong and demonstrated experience of code development and high performance computing; strong written and oral communication skills; a commitment to excellence and an ambition to succeed in a career in research.

The successful applicant will join a thriving research group, now 13 strong, working on combustion and some areas of solar energy. There will also be significant interactions with the Computational Science group at the National Renewable Energy Laboratory, Colorado, USA, and with an experimental team at the Centre for Energy Technology at the University of Adelaide, Australia.

UNSW is recognised as one of Australia's leading research-focussed universities, and is ranked consistently among the top universities in engineering and technology worldwide. It is located in Sydney, very close to several beautiful beaches.

The appointment will initially be for one year but the project covers three years of a post-doctoral fellow's salary and the appointment can be extended up to three years on a year by year basis, subject to satisfactory progress. The salary for the position will be commensurate with experience and qualifications but is expected to be in the vicinity of AUD 84,000. The position is available immediately if desired, and ideally the applicant would start before late 2015.

Contact: Associate Professor Evatt Hawkes, evatt.hawkes@unsw.edu.au