

## **Postdoctoral Scientist – Development and implementation of optical diagnostics in two-phase reactive flows**

A position is available for 24 months at CORIA Lab. associated with a new collaborative initiative between INSA (National Institute of Applied Sciences) Rouen Normandie, France and the University of Cambridge, UK. The project is part of a multi-investigator team involving experimental and numerical investigations on the effect of fuel droplets on the flame speed and structure, and how these effects might affect combustion in devices such as gas turbines. This project is funded by the Région Normandie under the Grant “Chaire d’Excellence DOLFIN, DrOplet-Laden Flame Interactions”.

The post holder will be located in CORIA laboratory (Normandie, France) at INSA Rouen Normandie. The scientific work will be conducted under the supervision of Prof. Simone Hochgreb, in interaction with the technical staff of the laboratory and the members of the group (Dr. Armelle Cessou, Prof. Frédéric Grisch and Prof. Bruno Renou). Several monthly stays in France of Prof. Hochgreb (3/years) are planned and regular trips to Cambridge for the post-doc are supported by the project.

The role involves developing and implementing experimental techniques to measure scalars, droplet sizes and velocities, using a number of techniques, including laser induced fluorescence, Raman scattering, phase Doppler anemometry and particle image velocimetry. A PhD and other relevant experience in laser diagnostics applied to flow systems, including linear and non-linear spectroscopy and/or velocity and diffraction measurements (absorption, scattering, Raman, fluorescence, particle velocity and Doppler measurements) is desirable. A proven record of independent designing and building of lab-scale experimental equipment is needed, including optical and flow systems, and ideally, reacting flow systems. A demonstrated record of delivery of analysis of experimental results is required, including relevant understanding of statistical noise treatment and instrument calibration, as relevant to optical diagnostics. Excellent communication and interpersonal skills required,

including day-to-day interaction with technicians, scientists and PhD students as part of the team, as well as superior presentation and written communication in English and if possible, also in French.

The key responsibilities and duties are to plan, design and conduct experiments on spray flame, in communication with other researchers on the topic; to study the relevant literature, analyse results and prepare presentations for discussion with the group; to plan, prepare and write publications for journals and conferences, possibly jointly with the other members of the group; and to advise and train incoming PhD students on experimental and analytical methods, as well as safe working methods.

Appointment (net salary ~ 3200 – 3400 €/month).

Fixed-term: The funds for this post are available for 24 months, ideally from Jan. 2021 to Dec. 2022

- **APPLICATION DEADLINE**

31/12/2020 12:00 - Europe/Brussels

- **LOCATION**

France › Saint Etienne du Rouvray

How to apply? Send your detailed Curriculum Vitae (CV) and reference letters to Professor Simone Hochgreb ([sh372@cam.ac.uk](mailto:sh372@cam.ac.uk)). For any administrative questions about the application process, and about the organization of the project in France, please email Prof. Bruno Renou ([renou@coria.fr](mailto:renou@coria.fr)).