COMBUSTION WEBINAR

Creative Uses for Optical Diagnostics

Speaker: Prof. Simone Hochgreb, University of Cambridge

Time: April 9th 2022

10:00 NYC; 16:00 Paris; 22:00 Beijing.

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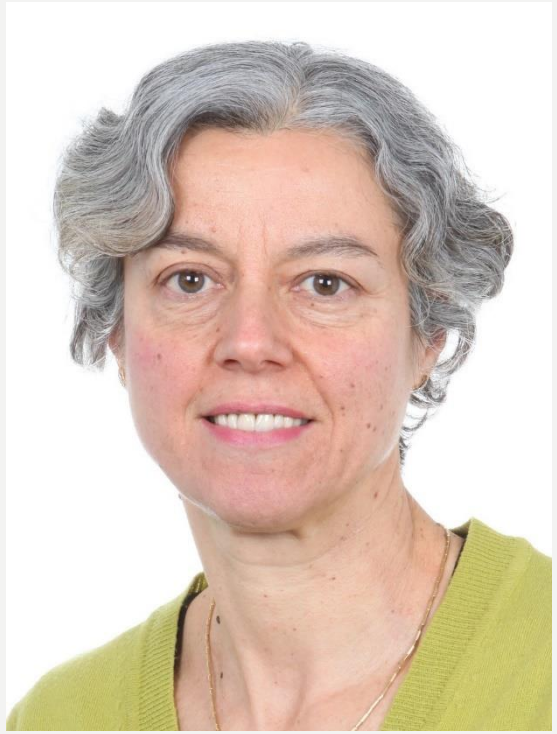
COMBUSTION WEBINAR



Abstract: In this talk we discuss the use of optical diagnostics for a number of different problems in reacting flows, not necessarily in the way they were designed for. We start with extending the use of a high speed particle-image velocimetry (PIV) lasers for (i) cross planar 3D flame surface measurements in turbulent flames, (ii) high frequency Raman measurements of entropy spots and (iii) in situ measurements of reactions in the process of synthesis of carbon nanotubes. We then turn our attention to the role of droplets in laminar stretched flames, and how the combined use of low speed PIV and particle image velocimetry can lead to understanding how the reaction rate is affected by the presence of reacting and non-reacting droplets.

Biography: Simone Hochgreb is Professor of Engineering at the University of Cambridge. Her research involves understanding processes in combustion and reacting flows, such as those relevant to internal combustion engines, gas turbines and furnaces. She has developed measurement methods for reacting flows for autoignition, spray, soot, coal and turbulent combustion in a range of devices. Her current work is in the application of optical diagnostics to understanding turbulent flames, combustion instabilities, and flame synthesis. Prior to Cambridge she held positions at MIT and Sandia National Labs. She holds PhD at Princeton University and a BSc from the University of São Paulo. She received the Wolfson Merit Award, and has been elected Fellow of the Royal Aeronautical Society.

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