

COMBUSTION WEBINAR

Probing Fast High Temperature Transformation in Nanoparticles for Energetic Materials

Speaker: Prof. Michael Zachariah, University of California, Riverside

Time: 13:00 PST, Feb 10th 2023
16:00 NYC; 22:00 Paris

Zoom Meeting ID: 944 6464 8294

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for other details directly contact pzhao12@utk.edu.



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Biography: Professor Michael Zachariah is Distinguished Professor of Chemical Engineering and Material Science at University of California Riverside. He has expertise in synthesis of nanomaterials and characterization of their reactive properties. He has worked extensively on aerosol generated materials and the metrology of nanoparticles in both the liquid and gas phases. This includes the development of new mass spectrometry and ion mobility methods to characterize nanoparticles and their reactivity. His primary research focus now is directed towards exploring the thermochemistry and kinetics of energy dense materials and methods for their temporal spatial reactivity. He is a recipient of the University of Maryland Outstanding Researcher Award, and the Sinclair Award for Sustained Excellence in Aerosol Research awarded by the American Association for Aerosol Research.

Abstract: The high temperature reactivity of metal/metal oxides are important in a wide variety of industrial applications including solar-thermal hydrogen generation, CO₂ sequestering, chemical-looping combustion, and energetic materials, among others. In this seminar I will discuss probing the reactivity of nanometals and metal oxides, towards developing a conceptual picture of rate limiting and phenomenological processes, in particular for application to energetic materials. This discussion will naturally lead to what makes nanoscale materials attractive for these applications, as well as some of their limitations.



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