

SPRING 2023

MSE 690 SEMINAR SERIES

MONDAY, FEBRUARY 27TH | 3:45PM SEMINAR

ARMS 1010

“From High Temperature Ceramics to Biominerals: Using MircoRaman to Understand Inorganic Materials Evolution”

Abstract: Over the last several decades, Raman spectroscopy has gained increasing popularity in the evaluation of inorganic and structural materials. This is because, unlike x-ray diffraction, which focuses on the cation lattice, Raman spectroscopy reveals information about changes on the far more mobile anion lattice of oxide-based materials. This provides us with a very powerful tool to understand the phase transformations, lattice ordering, strain, and crystallographic orientation changes in these materials. In this talk the basics of Raman spectroscopy and Raman spectrometers will be reviewed along with a series of real-world applications for the use of Raman in the evaluation of industrially relevant materials.

Biography: Dr. Molly O’Connor is an Expert Scientist in the Advanced Materials Research and Development group at Praxair Surface Technologies with a focus on the development of new materials chemistries and coatings for use in hot and harsh environments. She received her BS in metallurgical and materials engineering from Illinois Institute of Technology (2001) and a PhD in materials from University of California, Santa Barbara (2006). In addition to her work at Praxair, she also worked as a materials scientist at GE Research and as a faculty member at both Texas A&M University and Stony Brook University. She has been awarded 16 patents in the area of coatings for turbine engines and currently sits on the executive board of the ASM International, Thermal Spray Society Board of Directors.



MOLLY O’CONNOR

Expert Scientist in the Advanced Materials Research and Development group at Praxair Surface Technologies



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