



## Department of Civil Engineering Seminar

# Nanoengineering of Stimuli Responsive Materials for Biomedical and Environmental Applications

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**Friday September 27, 2019, 12:45-1:45PM @ Bingham 103**

**Lunch and discussion at 12:00PM at Bingham 102 (Vose Room)**

### Abstract

This talk will center on the chemical design of stimuli responsive nanostructures, and in particular cover aspects of their development as anti-biofilm agents and as tracers for an emerging biomedical imaging technology known as magnetic particle imaging (MPI). Moreover, the talk will provide a general overview of the different approaches that have been adopted to improve the performance of nanostructured metal and metal oxide sensors for environmental applications. The performance of the stimuli responsive materials is improved by tailoring the properties of the metal/metal oxide nanostructures through engineering of morphology, composition, and nanocomposite design.

### About the speaker:



Anna Cristina S. Samia is an Associate Professor of Chemistry at Case Western Reserve University in Cleveland, OH. She received her PhD degree in Chemistry from Georgia Institute of Technology and her Postdoctoral training at the Center for Nanoscale Materials at Argonne National Laboratory in Chicago, IL. She also worked as a Research Fellow at the School of Medicine at CWRU. Dr. Samia's research interests center around the synthesis and study of the magneto-opto-electronic properties of intermetallic and metal oxide nanostructures with emphasis on chemical design to achieve desired properties and function. The

main applications are in the areas of magnetic imaging and therapy, nanosensor development, and environmental nanotechnology. Dr. Samia also serves as the Director of the Women in Chemistry@CWRU Professional Development program and the Chemistry LEAD (Leadership, Enrichment, and Academic Development) Scholars program at CWRU.