Title: Chemical Micro and Nanomachines

Abstract: Chemistry can be used to tailor materials and devices so that they react with their environment to enable smart and autonomous responses of potential application in electronics, optics and medicine. In this talk, I will discuss strategies to create materials composed of inorganics, polymers, hydrogels and biomolecules such as DNA which can be photopatterned in specific geometries to create complex, functional devices. These devices can be used to create miniaturized mechanized devices that are chemically responsive and move autonomously, curve, bend and fold to enable important tasks at small size scales.

BIO: David Gracias is a Professor at the Johns Hopkins University in Baltimore, USA. He did his undergraduate at IIT Kharagpur, received his PhD from UC Berkeley (1999) and did post-doctoral research at Harvard University all in chemistry or related fields. His research interests are in interfacial/thin film/smart materials science, biosensing, miniature robots, and 3D/hybrid fabrication with about 150 technical publications and 28 issued US / international patents in these areas.