Enhancing Research by Making Measurements at Atomistic Scale

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ABSTRACT: Atomic Force Microscopy (AFM), invented in 1980s, has become one of the main surface characterization tools for micro- and nano-scale measurements. AFM is not only capable of capturing topographical information of the surface but also characterizing mechanical, electrical and even magnetic properties. During the recent years, dynamic AFM modes have enabled nano-scale experiments to measure topographical and material composition in a so-called single pass measurement. It is due to this capability that AFM has become a major characterization tool for vast variety of fields such as bio-inspired materials, soft matter or energy related polymers. In this talk, the fundamental modes of AFM imaging are discussed. The new advancement in dynamic AFM, especially multifrequency AFM, is introduced. The goal of this presentation is to introduce the researchers in Mechanical Engineering department to the capabilities of the available AFM system.

BIO: Babak Eslami received his B.S. and M.S. in Mechanical Engineering from University of Maryland, College Park in 2010 and 2012 respectively. He received his PhD at The George Washington University under supervision of Dr. Santiago Solares. During his PhD, Babak has worked on developing and optimizing multifrequency atomic force microscopy technique to measure and characterize mechanical properties of soft matter in different environmental conditions.

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