Nanoscale Science and Technology Plenary Session (ALL-INVITED SESSION)

Room 320 - Session NSP-SuA

Nanoscale Science and Technology Plenary Session (ALL-INVITED SESSION)

Moderators: Deep Jariwala, University of Pennsylvania, **Marek Kolmer**, Ames National Laboratory

3:00pm **NSP-SuA-1 AFM – after 40 Years Still an Evolving Playground***,* ***Sidney R. Cohen***[1]*,* Weizmann Institute of Science, Israel **INVITED**

In 1986, a brief report in Physical Review Letters by Binnig, Quate and Gerber introduced the atomic force microscope (AFM). Although the original design was quickly modified and improved to exceed the 3 nm lateral and 0.1 nm vertical resolution shown there, the utility and versatility of the instrument were accurately predicted at the time, suggesting the capability to measure any kind of force with sensitivity of atto-Newtons, on both conductors and insulators. This, and subsequent developments turned AFM into the main engine driving the burgeoning field of nanoscience and associated technologies. In the ensuing years, the technique has accomplished feats which would have fit the realm of science-fiction before its invention. I entered the field 2 years after the first report, in 1988, as a post-doc studying nano-scale tribology. The exciting possibilities AFM provides kept me with it until now. In this talk, I will cover our own scientific work which exploited developments of the technique in several areas, including photovoltaics, nanolithography, nanomechanics, “nanoacrobatics”. and surface interactions.The talk will also emphasize the important role of image/data analysis and how that has evolved over the years.

3:30pm **NSP-SuA-3 NS Graduate Award Finalists Presentations**

4:00pm **NSP-SuA-5 NS Early Career Award Finalists Presentations**

4:45pm **NSP-SuA-8 Nanoscale Science and Technology Plenary Award Winner Announcement and Reception**

[1] **NSTD Nanotechnology Recognition Award**

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