

*You are cordially invited to attend this seminar to be held on*

**Monday, June 12<sup>th</sup>, 15:00**

**Room 118, Wolfson Mechanical Engineering Building**

**Following Growth Processes of Nanomaterials:  
Designing Particles on the Atomic Scale**

**Prof. Maya Bar Sadan**

Associate Professor

Chemistry Department, Ben Gurion University of the Negev

*Abstract*

**N**anostructures are one of the most extensively researched systems in nanoscience. While reports on the optical properties of single particles are available, the quantitative characterization of atomic order on a single particle level and the growth mechanism that resulted in that specific rearrangement, are still generally missing. The majority of characterization procedures are performed on ensembles that average properties and may hinder the understanding of fundamental aspects in the colloidal synthesis.

Atomic resolution analysis, which has emerged with aberration corrected instruments, has mainly provided analysis of few particles per sample. It is now, due to the Cc correction that offers superior resolutions in low voltages that the atom locations can be achieved on a routine basis to deliver new statistical data. We use this state-of-the-art instrumentation to understand growth processes and to correlate the atomic structure with properties. Here, I will focus on the formation of ternary compounds and will present understanding the doping and alloying processes for the formation of functional materials.

*Biosketch*



*Prof. Bar Sadan* has graduated from the Weizmann Institute of Science in 2007 (Adviser: Prof. Reshef Tenne). In 2008-2011 she was a post-doc at the Ernst-Ruska Center for electron microscopy and spectroscopy with electrons, Juelich, Germany, with Prof. Knut Urban. Since 2011 she is a member of the Chemistry department of the Ben Gurion University.