



## Nano Seminar

### **From Biomineralization to Bio-Inspired Routes for Controlling the Structure and Properties of Materials: Reusing proven tricks on new materials**

**Boaz Pokroy**

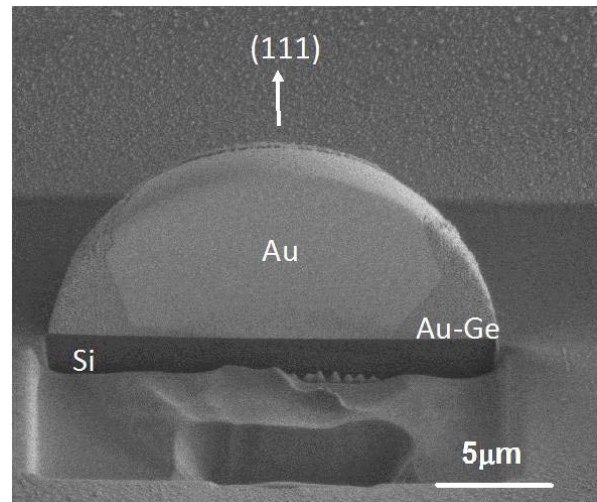
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#### **Abstract:**

In the course of biomineralization, organisms produce a large variety of functional biogenic crystals that exhibit fascinating mechanical, optical, magnetic and other characteristics. More specifically, when living organisms grow crystals they can effectively control polymorph selection as well as the crystal morphology, shape, and even atomic structure. Materials existing in nature have extraordinary and specific functions, yet the materials employed in nature are quite different from those engineers would select.

I will show how we have emulated specific strategies used by organisms in forming structural biogenic crystals, and have applied these strategies biomimetically so as to form new structural materials with new properties and characteristics. This bio-inspired approach involves the adoption of three specific biological strategies:

- (i) Control the short-range order of amorphous materials.
- (ii) Control the morphology of single crystals of various functional materials so that they can have intricate and curved surfaces and yet maintain their single-crystal nature.
- (iii) Entrap organic molecules into single crystals of functional materials so as to tailor and manipulate their electronic structure.



#### **Gathering & Refreshments at 10:50**

Please contact Liron Dover at 6584919 if you are interested in meeting the lecturer.

**Sunday, Dec 20<sup>th</sup> 2015, 11:00 at the Seminar Hall**  
Los Angeles Building, entrance floor.