



The Hebrew University Center
for Nanoscience & Nanotechnology



Nano Seminar

Nano Materials for Brain-Machine Technologies

Yael Hanein

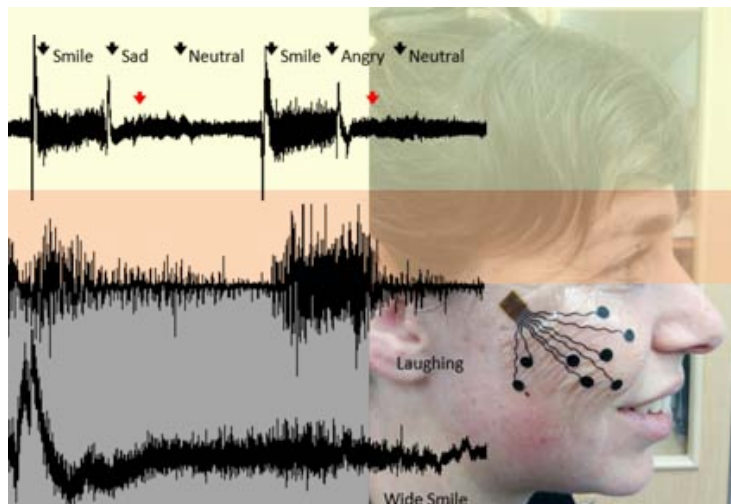
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Abstract:

Brain-machine technology is emerging as one of the most active technological fields in recent years. Within this technological realm, neuro-technology and in particular neuronal interfacing, are of particular interest as many fundamental challenges in this field have not been resolved for decades. Novel materials and fabrication processes offer new opportunities in the realization of neural interfaces. Nano materials in particular can offer advantage in improve electrode impedance, in reducing device rigidity, in establishing photo sensitivity and more.

The first such device we developed is a new flexible neuronal micro electrode array, based entirely on carbon nanotube technology, where both the conducting traces and the stimulating electrodes consist of conducting carbon nanotube films embedded in a polymeric support. The use of carbon nanotubes bestows the electrodes flexibility, and excellent electro-chemical properties. We also demonstrated that carbon nanotube electrodes can be further modified with quantum dots converting them to bio-mimetic, photo-sensitive pixels. Such photo-sensitive pixels are ideal for artificial retina applications. More recently, we have also explored the use of the carbon electrodes for skin applications, demonstrating unique performances allowing long term high fidelity recording.



Gathering & Refreshments at 10:50

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

Sunday, Jan 17th 2015, 11:00 at the Seminar Hall
Los Angeles Building, entrance floor.