



The Hebrew University Center
for Nanoscience & Nanotechnology



האוניברסיטה
העברית
בירושלים

Nano Seminar

Plasmon Controlled Molecular Junctions

Prof. Yoram Selzer

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Abstract:

The highly confined optical fields of plasmons within nano-scale metal gaps can efficiently mediate interactions between radiation and molecules residing in the gaps and are predicted to generate, modulate and steer by various mechanisms the transport properties of molecular junctions.

Experimental systems which demonstrate plasmonic-effects in the dc-conductance of several junctions will be presented. With such an experimental capability at hand, and by using femtosecond laser pulses to create transient plasmons within junctions, results demonstrating the exciting possibility to perform time-resolved conductance measurements of molecular junctions will also be discussed.

I will also show that inelastic electron tunneling spectroscopy of molecular junctions is an accurate thermometer of the effective temperature of junctions under illumination. The nature of this measurement guarantees that the reported temperature indeed characterizes the confined volume in which heat is produced by the relaxation of hot carriers. Using a simple model, I suggest that the accuracy of the method enables also to semi-quantify the energy distribution of hot carriers within the leads.

Gathering & Refreshments at 10:50

Tuesday, January 8th 2019, 11:00 at the Seminar Hall

Los Angeles Building, entrance floor.

Please contact Alexandra Bannykh at 6584919 if you are interested in meeting the lecturer