



The Hebrew University Center
for Nanoscience & Nanotechnology



Nano Seminar

Molecular Quantum Conductors: Charge and Spin Transport Manipulations by Interface Chemistry and Reduced Dimensionality

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Abstract:

The inherent electronic mismatch between molecules and metals is a general limitation for efficient electron transport in molecule-based electronics, including organic light emitting diodes, nanoscale organic spin-valves, and single-molecule transistors. In this talk, I will review our recent progress in revealing a fundamental upper limit for conductance across metal-molecule interfaces¹, as well as significant spin filtering in metal-oxygen atomic chains² and molecular junctions. These findings can be used to derive general principles for efficient charge and spin transport manipulations at the nanoscale¹⁻⁴.

References:

1. T. Yelin, R. Korytár, N. Sukenik, R. Vardimon, B. Kumar, C. Nuckolls, F. Evers & O. Tal, *Nature Materials*, 15, 444 (2016).
2. R. Vardimon, M. Kliensky & O. Tal, *Nano Letters*, 15, 3894 (2015).
3. D. Rakhmilevitch, R. Korytár, A. Bagrets, F. Evers & O. Tal, *Physical Review Letters* 113, 236603 (2014).
4. D. Rakhmilevitch, S. Sarkar, O. Bitton, L. Kronik & O. Tal, *Nano Letters* 16, 1741 (2016).

Gathering & Refreshments at 10:50

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

Monday, Nov 28th 2016, 11:00 at the Seminar Hall
Los Angeles Building, entrance floor.