

17 March 2013

TEL AVIV UNIVERSITY  אוניברסיטת תל-אביב  
The Center for Nanoscience & Nanotechnology

Nano seminar and Chemistry colloquium  
**Molecular conduction and beyond: part 2**

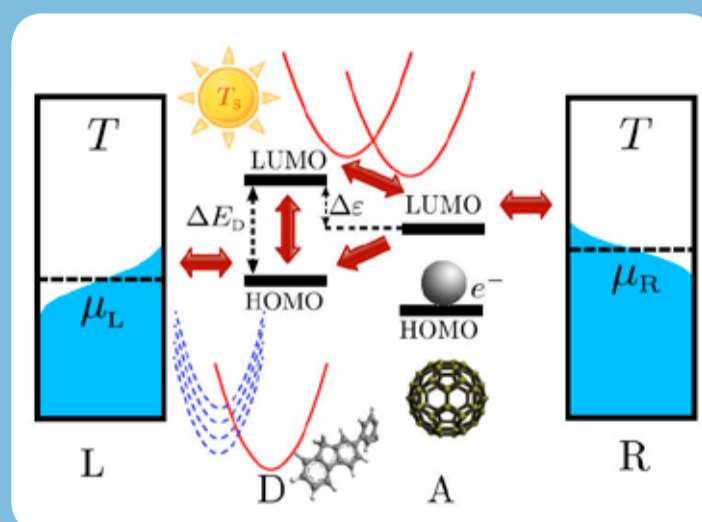
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In the TAU Nano meeting in Maalot (2010) I presented an overview of the subject of molecular conduction with the following abstract:

*"In molecular conductance spectroscopy, the current through a molecule (or molecules) connecting two metal or semiconductors electrodes is measured as a function of the applied voltage. With eye on potential technological applications the main problems facing researchers in this field fall within the subjects of fabrication, characterization, stability, functionality and control. This talk will review recent progress in understanding molecular conduction with particular emphasis on the role played by the molecular electronic structure and conformation, its coupling to the electrodes and its interaction with the underlying nuclear motion and the thermal environment. As a theoretical problem, one needs to deal with a non-equilibrium system open to electron and energy reservoirs, possibly under illumination. We will focus on relative timescales of different processes as a way to assess their importance in the overall conduction. Characterization, stability functionality and control will be discussed in the framework of recent studies on inelastic tunneling spectroscopy, heating and heat conduction in molecular junctions and optical response of such systems."*

The first half of the present talk will review and give an update on the above subjects. In the second half I will discuss several new subjects: Current transfer, circular currents, magnetic field effects, interplay of electron and energy transfer and redox molecular junctions.



Sunday, 17 March 2013 at 13:00, Dan David 003



Tel Aviv University Center for Nanoscience & Nanotechnology