

INELASTIC EFFECTS IN MOLECULAR CONDUCTION JUNCTIONS

Abraham Nitzan, Tel Aviv University, Tel Aviv, 69978, Israel

This talk will give an overview of our work on inelastic effects in molecular conduction, including dephasing, dissipation and heating, then describe some recent observations, interpretations and predictions on three phenomena involving phonons in molecular junctions: (a) heat conduction and its rectification by molecular wires^{1,2}; (b) inelastic electron tunneling spectroscopy³⁻⁵ and (c) Phonon-induced multistability, hysteresis and negative differential resistance in molecular conduction.⁶ New possibilities for electron-photon interactions in molecular conduction junctions will also be mentioned.⁷

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