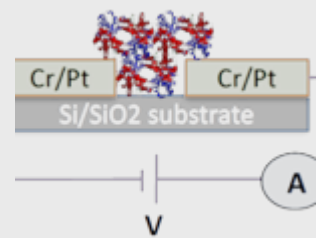


Bottom-up Nanoelectronics: Contacting Single Molecules and Nanoparticles



Title: Bottom-up Nanoelectronics: Contacting Single Molecules and Nanoparticles.

When: Monday, May 22, (2017), 12:00.

Place: Departamento de Física de la Materia Condensada, Facultad Ciencias, Module 3, Seminar Room (5th Floor).

Speaker: Herre S.J. van der Zant, Delft University of Technology, Universidad Autonoma de Madrid and IMDEA Nanociencia Madrid.

Our research focus is on bottom-up nanoelectronics and in particular the electronic characterization of single molecules and nanoparticles for device applications. For this purpose, we employ several methods to create electrodes, such as direct e-beam patterning, electromigration of Au wires, electroburning of multilayer graphene flakes, (gateable) mechanically-controllable break junctions (MCBJs) and a self-aligned fabrication technique for fabricating nano-spaced electrodes over large lengths. Typical experiments consist of measuring current-voltage characteristics as a function of various external stimuli such as electrode separation, gate voltage, temperature, and/or magnetic field. In this talk, I will discuss experiments on spincrossover nanoparticles and molecules, protein networks, biological nanowires and the use of superconducting electrodes as a new direction to study Shiba states in one-level quantum dot systems.

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