

Characterization of MMX polymers by conductance AFM: a new type of molecular wires.

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Conductance atomic force microscope (CAFM) is a powerful tool to characterize the electrical conductivity of nanowires [1,2]. In particular CAFM has been extensively used to measure the electrical transport properties of carbon nanotubes [3,4,5], DNA [6]. Carbon nanotubes present outstanding electrical transport properties however it is difficult to envision how to selforganize them on surfaces, a basic requirement for molecular circuitry.

We present a new candidate to molecular wire based on a particular type of coordination polymer known as MMX [⁷. These polymers are usually obtained as crystals and can be described as an infinite sequence of dimetalic units linked by a ligand (usually a halogen), the chains interact through weak van der Waal forces. In the talk I will address the method to produce highly conductive nanometer bundles of a platinum based MMX [8] polymer on insulating surfaces with a detailed description of the CAFM technique used to characterize the wires.

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Figures:

