

Conductive Coordination Polymers at the Nanoscale

Félix Zamora^{1,2}, Cristina Hermosa^{1,3}, Cristina Gómez-Navarro³, Pablo Ares,³ Julio Gómez-Herrero³

¹ Universidad Autónoma de Madrid. Facultad de Ciencias Departamento de Química Inorgánica and Condensed Matter Physics Center (IFIMAC). E-28049 Madrid (Spain). www.nanomater.es

² IMDEA-Nanoscience. C/ Faraday 9, Campus Cantoblanco-UAM, E-28049 Madrid (Spain).

³ Universidad Autónoma de Madrid. Facultad de Ciencias Departamento de Física de la Materia Condensada and Condensed Matter Physics Center (IFIMAC). E-28049 Madrid (Spain).

felix.zamora@uam.es

Abstract

The suitable combination of metal entities with organic molecules, named as ligands, lead to the formation of coordination polymers (CPs). These metal-organic systems can originate a large variety of architectures with interesting physico-chemical properties.

In this talk I will pay attention to a particular type of linear coordination polymers known as MMX chains which consist of the combination of two simple building blocks a dimetal subunit with halides. I will describe several experiments that have allowed us to form small nanostructures, composed of few molecules, on insulating surfaces using a rather unusual deposition method named as *direct sublimation*.^[1] I will present several experiments of their electrical characterization.^[2,3] These experiments have confirmed their intrinsic metallic character and excellent electrical conductivity. Finally, I will discuss on very recent results obtained on MMX produced on mica and SiO₂ by simple drop-casting from solution and the electrical measurements carried out on a single molecule. These results show the high potential of MMX as molecular wires.

References

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