

Spectroscopic Techniques as Tools to Analyze Charge Transport Processes in Organic Field Effect Transistors

Rocío Ponce Ortiz^a, Alexandra Harbuzaru^a, Yingfeng Wang^b, Xugang Guo^b, Alberto D. Scaccabarozzi^c, Mario Caironi^c, M. Carmen Ruiz Delgado^a

^aDepartment of Physical Chemistry, University of Malaga, Campus de Teatinos s/n, Malaga 29071, Spain.

^bDepartment of Materials Science and Engineering, South University of Science and Technology (SUSTech), No. 1088, Xueyuan Road, Shenzhen, Guangdong 518055, China.

^cCenter for Nano Science and Technology @ PoliMi, Istituto Italiano di Tecnologia, via Pascoli 70/3, 20133 Milano, Italy.

The organic electronics research field has advanced tremendously in the last decades, already rendering semiconductors able to compete with their inorganic counterparts.¹⁻³ However, the final blossoming of this field would probably come with the complete understanding of the charge transport mechanism in organic materials.

For this end, spectroscopies techniques have been proven to be of great interest in the elucidation of the different processes taking place in electronic devices. These techniques, and in particular Raman spectroscopy is a rapid, noninvasive technique able to gather information on molecular and supramolecular levels, thus being really useful for this purpose.⁴⁻⁶

In this talk, some examples from our research group will be presented in which several spectroscopic techniques, supported by DFT quantum chemical calculations have been used to shed light on the charge transport mechanisms in organic field effect transistors (OFETs).⁷⁻⁸

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