

109 Surface assembling of organic ligands and their coordination compounds on Au(111) surfaces: STM, XPS and Molecular Docking studies

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In the field of nanotechnology, the development of thin films on surfaces has caught the attention in the past years. Research is pointing to the miniaturization of devices using a *bottom-up* approach, which is related to the use of molecules as functional objects. In this sense, the synthesis of molecules with diverse properties and subsequent deposition on surfaces opens the door to the development of devices, such as sensors or storage systems [1].

Our research team is focused in the use of poly-functional molecular materials, due to their optoelectronic and magnetic properties [2,3], and the subsequent functionalization of surfaces for the development of devices with technological interest [4].

Therefore we prepared a family of π -conjugated organic system presenting thiophene rings and their respective coordination compounds with transition metals, which were deposited on Au(111) surfaces. The functionalized surfaces were topographically characterized using Scanning Tunneling Microscopy (STM) and their composition analysed through X-ray Photoelectron Spectroscopy (XPS) (Figure 1). At the same time, molecular Docking studies provided different conformations of the deposited molecules onto the Au(111) surfaces.

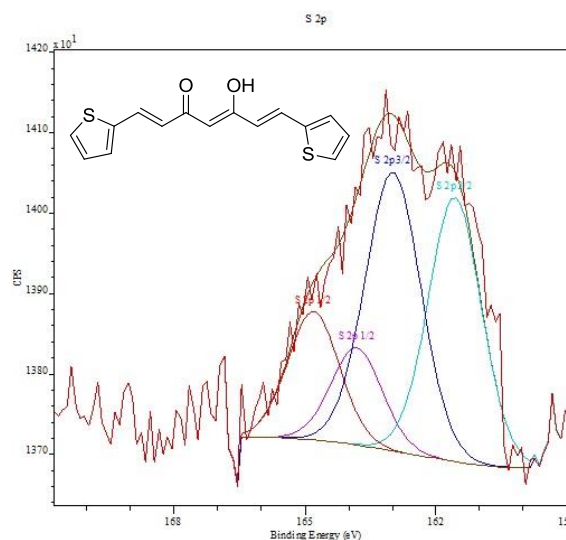


Fig. 1 XPS spectra in the S 2p region of thiophene-based organic ligand on Au(111).

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References

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