



CICLO DE SEMINARIOS 2021-2022
DEPARTAMENTO DE QUÍMICA FÍSICA
UNIVERSIDAD COMPLUTENSE DE MADRID

Lunes 13 de diciembre de 2021 – 13:00 h
Aula QC16

Laser Mass Spectrometry and Molecular Spectroscopy of
Molecules and Supramolecular Complexes

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A vast part of processes of chemical interest takes place in a condensed phase. The microscopic description of condensed phases is however a challenging task. Simplified environments become necessary in order to gain insights into the intrinsic molecular properties and behavior that are responsible for interesting nanoscopic and mesoscopic phenomena. The isolation of molecular systems in the gas phase, or in cold inert molecular matrices, provides such an environment. Among the soft (non-fragmentative) molecular ion sources available nowadays, we made extensive use of matrix-assisted laser-desorption-ionization (MALDI), LDI and electrospray ionization (ESI) techniques. Isolated systems can then be characterized with a variety of modern spectroscopic and mass spectrometric techniques that probe their structures and interactions. The precise definition of the molecular framework that is achieved in this approach also provides a valuable reference to validate quantum chemistry and molecular modelling methods. We present here some of our results on the optimization of LDI employing nanoparticles as co-desorbing matrices and some important results on the collisional cooling of the LDI-induced fragmentation of polyaromatic hydrocarbons as long as chemical reactivity on cold supports. In the second part, we present the spectroscopic characterization results of supramolecular complexes (neutral and charged) involving macrocycles (cyclic ethers, cyclodextrines) as benchmark examples of inclusion complexes.

Se ruega enviar un correo a fernandm@ucm.es antes del lunes 13 si se está interesado en acceder vía telemática.