



conference

Friday February 19th

Facultad de Ciencias
Sala de Conferencias, Módulo 00
Universidad Autónoma de Madrid

11:30h

**Fluorescent Organic Nanowires:
Supramolecular Assembly, Enhanced
Emission, Charge Transfer, and Switching**

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We have developed a special class of π -conjugated organic molecules comprising 'elastic twist' units which show strong self-assembling tendency to the highly fluorescent organic nanostructures including nanoparticle, nanowire, and nanofabric. Most unique feature of this class of molecules (structure comprises biphenylene-cyanostilbene type backbone as an elastic twist unit) is that the fluorescence emission is totally off in the solution or melt state, while it turns on immediately upon self-assembly into the nanostructure. Self-assembly takes place in the solution, emulsion, bulk, or even in the polymer film with concomitant fluorescence turn-on efficiently heralding the occurrence of self-assembly even to the naked eye observation. Through careful structural and optical characterizations, it was elucidated that the specific intermolecular interaction forces between the elastic twist molecules gave rise to the structural planarization and J-type stacking of the system resulting in the various nanostructures with enhanced fluorescence emission and semi-conducting properties. In this talk, I will discuss the molecular design strategies of this special class of molecules, optical properties, nanostructure fabrication, together with their molecular photonics/electronics applications including those in the memory, sensor, display, and transistor.

Nanociencia y Nanotecnología: lo pequeño es diferente
Nanoscience and Nanotechnology: small is different

