

Parc Científic de la Universitat de València
C/Catedràtic José Beltran,
246980 Paterna (València)

Tel. +34 963544415
FAX. +34 963543273
www.icmol.es

The candidate will carry out his/her PhD thesis under the supervision of Dr. Alicia Forment-Aliaga in Prof. E. Coronado's group (Institute of Molecular Science, www.icmol.es), in the frame of the project: *Hybrid Heterostructures, Materials and Devices Based on Stimuli-Responsive Magnetic Molecular Systems and 2D Materials*.

The ideal candidate should have a degree in chemistry, materials science or equivalent obtained after 1st January 2015 from a non-Spanish university. She/he must have obtained 60 master ECTS to be able to access the PhD program.

Experience in materials science and engineering, chemistry of materials, surface science or molecular electronics will be valued.

Objectives: The development of the project will be focused on two main goals: (1) Preparation of new hybrid heterostructures based on 2D inorganic layers functionalized with bistable molecular materials and their integration in functional devices, and (2) Surface chemical design and manipulation of molecular-based 2D systems.

Tasks:

- Exfoliation (solution and dry methods) and characterization of inorganic 2D materials.
- Synthesis and characterization of target molecular systems.
- Chemical functionalization of the exfoliated 2D layers and full chemical/physical characterization of new hybrid heterostructures.
- Integration of new hybrid 2D heterostructures in field effect transistors (FETs), for their complete transport characterization under magnetic/optic external stimuli and the study of their potential implementation in devices.
- Growth of molecular-based layered materials on surfaces by self-assembling processes.
- Isolation and transfer of the molecular-based 2D layers for their complete chemical and physical characterization.

Selected student will have to enrol the PhD program in Nanoscience and Nanotechnology (www.icmol.es/doctorado/nano)

Contract: 3 years contact, with a monthly gross remuneration of 1.400€ and up to 1.600€ for travel and settling costs in Valencia.

Application (deadline April 30th) and more information: alicia.forment@uv.es and francisco.escrig@uv.es

Starting date: 16/9/2019 or exceptionally up to 16/11/2019 (due to Visa requirements).

