Post doctoral position: Functional graphene-like MOFs by scalable delamination processes

ICN2 is a renowned research centre. Its research lines focus on the newly discovered physical and chemical properties that arise from the fascinating behaviour of matter at the nanoscale.

The Institute promotes collaboration among scientists from diverse backgrounds (physics, chemistry, biology, and engineering) to develop basic and applied research, always seeking interactions with local and global industry. ICN2 also trains researchers in nanotechnology, develops numerous activities to facilitate the uptake of nanotechnology by industry, and promotes networking among scientists, engineers, technicians, business people, society, and policy makers.

ICN2 was accredited in 2014 as a Severo Ochoa Centre of Excellence.

The Severo Ochoa Program, sponsored by the Spanish Ministry of Economy and Competitiveness, aims to identify and support Spanish research centres that are among the world's best in their specialty. This award is the highest recognition of centres of excellence in Spain, and it is granted after international scientific committees carry out a rigorous evaluation of project proposals submitted by Spanish research centres.

We are looking for a suitable and highly motivated candidate to carry out the:

SEVERO OCHOA POST DOCTORAL PROJECT PROPOSAL ON FUNCTIONAL GRAPHENE-LIKE MOFS BY SCALABLE DELAMINATION PROCESSES
REF: 022-2014

The icn2 groups involved are:

- Nanostructured Functional Materials
- Nanobiosensors and Bioelectronics
- Novel Energy-Oriented Materials
- Physics and Engineering of Nanodevices

Project description:

2-D materials are attracting enormous interest over the last years because their unusual but not least amazing properties. So far several classes of bulk layered materials have been artificially exfoliated to nanosheets by top-down delamination methodologies such as clay minerals, metal oxides or hydroxides, chalcogenides, phosphates and without any doubt one of the most successfully used graphene. Much less attention has been paid though to 2-D Metal-Organic Frameworks (MOFs), which are barely discussed in the literature despite their high potential for applications.

Candidate's tasks:	The candidate will be responsible for the fabrication of 2-D coordination polymers by fully scalable delamination processes under mild lab conditions. The materials will be selected from previously reported examples in the literature or by the careful design of new complexes, if required, in strong collaboration with the different senior scientists involved. Once the nanostructures are obtained, the candidate will be responsible to ensure proper colloidal solutions with endorsed stabilities and to study the corresponding sensing, optical and conductive properties, both in bulk and as isolated monolayers. Finally, if successful, the candidate will be in charge to explore their possible integration into a device as a deliverable.
Cadidate's profile:	We look for an enthusiastic doctor in chemistry or materials science with strong interest in research and good communication skills. Previous accredited experience in coordination chemistry and its application in Materials Science is mandatory. Participation in research projects involving nanomaterial synthesis and its morphological characterization by different techniques such as AFM, are welcome.
We offer:	• Full-time contract as Postdoctoral researcher. • Social benefits: Flexible timetable, Flexible Benefits Package • Scientific excellence, a challenging project, and an innovative work environment.
How to apply:	To apply, please visit: www.jobs.icn2.cat/job-openings/24
Starting date:	As soon as a suitable candidate is selected.