

We are looking for **PhD candidates in the area of Functional Molecular Materials to cover one fellowship inside the Severo Ochoa program**. The researcher will join to a pioneer, dynamic and active group from the Department of NanoScience and Organic Materials (**NANOMOL**, [www.icmab.es/nanomol](http://www.icmab.es/nanomol)) at the **Institut de Ciència de Materials de Barcelona (ICMAB-CSIC)** located at the UAB (Universitat Autònoma de Barcelona) research park.

Nanomol is a research group with wide expertise and recognized excellence in the synthesis, processing and study of molecular and polymeric materials with chemical, electronic, magnetic and biomedical properties. We continuously generate new knowledge in our basic and applied research projects regarding the micro and nano structuring of molecular materials. We offer this knowledge to improve the properties of products manufactured in diverse sectors, such as chemicals, pharmaceuticals and electronics, thereby contributing to increasing their added value. As a group, we are actively involved in implementing nanotechnology and sustainable and economically efficient technologies for preparing advanced functional molecular materials.

The candidate will perform **research in the field of Molecular Electronics and Molecular Spintronics**. He/she will be enrolled in the design and synthesis of new redox and magnetically active compounds with the appropriate molecular and electronic structure to be integrated in molecular junctions. **For their promising interest in spintronics applications, open shell molecular systems (triphenylmethyl, verdazyl, nitronyl-nitroxide, dithiazolyl radicals) will be investigated**. Self-assembled monolayers based on the target compounds will be prepared and characterized. To perform the electrical characterization, we will work with a novel technique implemented in the laboratory that basically consists in using a liquid metal as the gallium indium eutectic (EGaln) to top contacting the molecular active layer. We will explore the effect of the molecular structure (e.g. conjugation, anchoring group) and electronic properties on the measured output current in order to pursue a robust molecule based device and to gain insights into transport mechanisms through molecules.

Candidates must hold a degree in Chemistry or Materials Science and a recognized Master degree (or equivalent) with high qualifications (>7,5 over 10) and with a good level of written and spoken english. An interdisciplinary outlook is desired and will be encouraged. Experience in organic synthesis, physicochemical characterization and electrochemistry will be highly valued. The successful candidates will work in an international environment and might travel to other European countries to develop the project.

**Contact:** Interested candidates should go to the following link <http://icmab.es/icmab-phd-programme-severo-ochoa-fellowships> to upload the application indicating in the motivation letter that they apply for the topic **“A chemical approach towards molecular electronic and spintronic devices”** and contact to Dr. Núria Crivillers ([ncrivillers@icmab.es](mailto:ncrivillers@icmab.es)) or Prof. Concepció Rovira ([cun@icmab.es](mailto:cun@icmab.es)) before the **3<sup>rd</sup> October**