

## PRE announcement, pending the official announcement PHD POSITION AVAILABLE

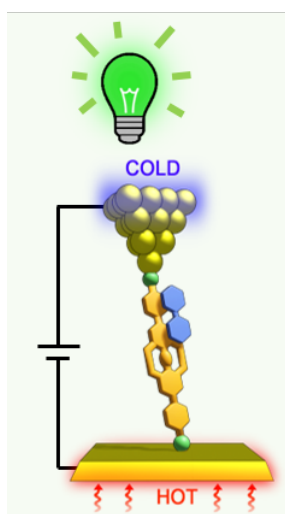
### ABOUT THE PHD POSITION

The employment is a **4-year position** (FPI grant) to develop a PhD thesis at the University of Zaragoza (Spain). **The grant also includes two research stays of 3 to 4 months each** in a foreign research centre (to be determined and agreed by the PhD student).

### KEY WORDS

Energy, sustainability, molecular electronics, nanofabrication, supramolecular chemistry, thermoelectric cells.

### PROJECT DESCRIPTION



The conversion of (waste)-heat into electrical power based on the Seebeck effect is a major opportunity provided by thermoelectric devices. Such conversion of heat into electricity can be done in a low-cost and sustainable manner, with the generation of long-life thermoelectrical cells. This project aims to explore how we can **tune (thermo)electrical properties of organic materials** brought about by non-covalent molecular interactions and subsequently exploit **supramolecular interactions**. The project will make use of fine **nanoarchitectonic tools** (self-assembly, Langmuir-Blodgett, layer-by-layer, electrografting, etc.) to guide the future design of thermoelectrical devices by exploitation of supramolecular interactions in large area devices integrated by millions of arrays of individual single (super)molecular **junctions**. This molecular design, assembly process, and thermoelectrical measurement work combined with theoretical approaches will lead to the final stage incorporation of the best molecular candidates into prototype thermoelectric generator cells.

The PhD student will be trained in an **interdisciplinary** (synthesis, assembly, characterization, and device fabrication) as well as an **international scenario** (with researchers in the work team from Australia and UK) and will gain deep knowledge and excellent skills in the fields of materials chemistry (design and synthesis), physical chemistry of surfaces, surface characterization, and scanning probe microscopy methodologies. In particular, the relevance and originality of the topic to be addressed in this project guarantee the completion of a doctoral thesis of high impact.

### REQUIREMENTS

- A **master degree** or equivalent in nanoscience, chemistry, physics, material science, energy systems or similar.
- We value your **personal qualities** such as strong motivation, good cooperation and communication skills. You must be goal oriented, structured and able to work effectively (individually and in a group).

### COME AND WORK WITH US !

The position will be held at the **Institute of Materials Science of Aragon** (<https://inma.unizar-csic.es>) and the **Laboratory for Advanced Microscopies** ([lma.unizar.es](http://lma.unizar.es)) and you will be enrolled in the doctoral school of the University of Zaragoza – doctoral program of the Physical Chemistry Department. Here you will find a friendly work environment with a lively doctoral network and a variety of experimental projects. We look forward to receiving your motivation letter and CV (send us an email to [pilarcea@unizar.es](mailto:pilarcea@unizar.es) asap); receipt of all emails received will be acknowledged.

**DEADLINE FOR THE SENDING YOUR LETTER OF INTEREST:** 22<sup>nd</sup> December 2023