

JOB OFFER

PhD POSITION ON PEROVSKITE QUANTUM DOTS SYNTHESIS FOR OPTOELECTRONIC APPLICATIONS

at INAM -UJI funded by Q-Solutions Prometeo Grant

Job Description

Place: Universitat Jaume I, Institute of Advanced Materials (INAM), www.inam.uji.es

Location: Castelló, Spain

Duration: up to 3 years (possible 4th year depending on funding availability)

Working hours: 37,5/ week

Closing Date: 31st October 2022

Expected starting date: January 2023

Hours of work: Full time position

Interview: Date to be confirmed

The Project

The aim of the PhD project is to prepare benchmark Pb- containing perovskite nanoparticles (NPs) and Pb-free PNPs with high photoluminescence quantum yield (PLQY) with emission in a broad range of the UV-visible-near IR spectra and with high stability. The PNPs will be used to develop semitransparent solar cells with a good complementarity with plants light absorption spectra and LEDs with high brightness, to increase the current performance of White LEDs, IR LEDs and Spin LEDs.

The specific activities will consist on:

- Synthesis of Pb containing benchmark and Pb-free PNPs with improved photophysical properties through conventional hot-injection and precipitation washing methods in a wide range of visible spectra as well as the study of the interaction between other inorganic QDs and the perovskite matrix.
- Fabrication and characterization of semitransparent solar cells and LEDs, including white, IR and spin-LEDs, by wet deposition and evaporation techniques.

The successful completion of the project should lead to the defense of a highly interdisciplinary PhD Thesis under the direct supervision of Prof. Iván Mora Seró and Dr. Sofia Masi (Advanced Semiconductors Group).

Elegibility criteria

- BSc in Material science, Electric Engineering, Chemistry, Physics, Chemical Engineering, or related fields)
- Master degree or equivalent that grants access to doctoral studies (Chemistry, Physics, Chemical Engineering, or related fields).

Technical Requirements (preferably):

- Basic background in Organic Chemistry, Inorganic Chemistry, Supramolecular Chemistry, Nanocrystal Synthesis, Solid Functional Materials.
- Hands on characterization techniques (Microscope, UV-vis absorption, fluorescence).

General skills:

- Strongly motivated to develop a scientific research career.
- Excellent academic results.
- Excellent interpersonal and communication skills.
- Good commandment of English language, written and spoken.

Application procedure:

Candidates should send the following documents to sero@uji.es and masi@uji.es, as soon as possible and not later than October 31st 2022.

- Motivation letter.
- Brief CV (including academic record summary)
- Name and email of one/two references.