

Recruitment of a PhD Researcher

If you are interested in doing research on the **fabrication and magnetic properties of nanomaterials**, this job is for you!

We are **recruiting a PhD researcher** to work with us in the framework of the project POCI-01-0145-FEDER-028676. The aim of this project is to **develop the first 3D data storage device** using **self-organized networks of cylindrical nanowires** (nanofibers). The use of nanofibres in this type of devices has enormous advantages over nanostripes (with a rectangular cross-section): the use of simple and low-cost growth techniques; the possibility of introducing chemical constrictions; and the elimination of the so-called "Walker breakdown". In this way, one intends to control the movement of the magnetic domains in individual nanofibers and their ordered 3D arrays, developing faster magnetic storage devices with greater capacity and reliability, manufactured with low-cost methods.

For this, the main tasks to be performed by the candidate will be:

- Use of **nano-lithography techniques** to access magnetic nanowires
- Measure the overall **magnetic properties** of the accessed nanowires
- Understand the **propagation of magnetic domain walls** in cylindrical nanowires
- **Design a final prototype** of a 3D magnetic memory device

The present work contract is due to start on **March 2020** with a monthly remuneration of **2,128.34 Euros**.

The tasks will be developed in the **Department of Physics and Astronomy of the Faculty of Sciences of University of Porto (DFA-FCUP, Portugal)**, in the **Research Unit IFIMUP**, and at the **Institute of Optoelectronic Systems and Microtechnology of the Polytechnic University of Madrid (ISOM-UPM, Spain)**.

Application can be submitted by any nationals, foreigners and stateless people who meet the following conditions cumulatively: hold a **PhD degree** in **Physics, Nanomaterials or Nanoscience** and hold a scientific and professional curriculum appropriate to the activities to be developed. **Preference will be given** to candidates with **expertise in fabrication and characterizations of magnetic nanomaterials, fabrication techniques in clean-room environment and electron microscopy**.

The applications must be exclusively submitted through the web page of this opening (https://sigarra.up.pt/fcup/pt/cnt_cand_geral.concursos_list), and include the following documents:

- Application;
- Copy of the PhD diploma or certificate;
- Detailed Curriculum vitae;
- Brief description of the most relevant scientific activities for the last 5 years;
- Other documents deemed important by the candidate for the evaluation.

The application is open from 27/01/2020 to 07/02/2020.

For any questions, please contact **Dr. Mariana Proença** (mproenca@fc.up.pt).