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**Code:**

**Project: HARVESTORE**

**Area leader: Prof. Joan Ramon Morante**

**Group: Nanoionics and Fuel Cells**

**Group leader: ICREA Prof. Albert Tarancón Rubio**

## **Ph.D. Student Position in Iontronics for Energy and Information Technologies**

The Group Leader of Nanoionics and Fuel Cells is seeking a PhD student to work on a Project devoted to the development of breakthrough concepts in Iontronics for Energy and Information Technologies.

**Description:** Nanoionics and Iontronics are emerging disciplines dealing with the ionic transport properties at the nanoscale and the effect of a tuneable arrangement of ions on the electronic properties, respectively. These two disciplines try to understand and exploit the subtle interplay between electrons and ions and its application to innovative solid state-based devices to promote a revolution similar to the one driven by nanoelectronics few decades ago. In particular, since the main conversion and energy storage technologies are based on ionic, electronic or mixed-ionic electronic conductors (MIEC), these new disciplines are called to revolutionize the energy field by giving rise to entirely new and disruptive technologies.

The PhD student will be involved in developing new nanomaterials compatible with mainstream miniaturization technologies for a new generation of solid-state iontronics-based devices. The activity will be carried out in the frame of the European Project "HARVESTORE" (<http://www.harvestore.eu/>). This will give the candidate a great opportunity to develop advanced concepts in collaboration with a well-reputed international network of collaborators.

We are interested in a Ph.D. student highly motivated to study the development of nanostructures and their applicability in. She/he will get experience in *hands on* deposition and characterization of thin film oxides, as well as a deep knowledge on advanced in situ/in operando characterization techniques. Among the techniques employed will be Pulsed Laser Deposition, In Situ Ellipsometry, Raman or impedance spectroscopy.

**Requirements:** Ph.D. student who is highly motivated to learn, work in a team, high flexibility and initiative and ability to innovate.

Bachelor and master of Physics / Materials Science/ Chemistry or similar is required. Experience in thin films, advanced structural and electrical characterization and device testing will be positively evaluated.

Fluent English is mandatory.



**We offer:** Three years Ph.D student contract. Joining an international team of highly qualified and motivated researchers working in the frontiers of knowledge in science and technology.

**Incorporation:** The candidates should be available before May 2021 (negotiable).

**Workplace:** Barcelona (IREC facilities)

Applicants should send a detailed CV, a motivation letter and bachelor/master transcript to Albert Tarancón. [atarancon@irec.cat](mailto:atarancon@irec.cat). Please indicate the reference “IONTRONICS” in your mail.