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**Area:** Advanced Materials for Energy Applications

**Head of the Area:** Prof. Joan Ramon Morante

**Group:** Nanoionics and Fuel Cells

**Head of Group:** Dr. Albert Tarancón Rubio

**Title:** Researcher in thin films for the Nanoionics and Fuel Cells Laboratory

**Description:**

The Nanoionics and Fuel Cells group (NFC) is focused on the development of i) solid oxide cells for power generation and production of synthetic fuels by electrolysis and ii) thin film based solid state energy microdevices such as micro-SOFCs or micro Li-ion batteries.

We are looking for a researcher able to cover our activity in functional thin films for solid state ionics devices, including structural and electrochemical aspects. Therefore, the candidate will be involved in:

- i) Design of breakthrough concepts based on oxide thin films
- ii) Deposition of high quality and highly performing oxide thin films
- iii) Integration of thin films in energy technologies
- iv) Structural and optical characterization of functional oxides in thin film form for electrochemical devices and other micro-power sources
- v) Electrochemical characterization of thin film based solid state energy devices

**Requirements:**

- PhD in Physics, Chemistry or Materials Science and fluent English are mandatory
- Strong and complementary scientific and technological record of actions (to be evaluated according to the career stage of the candidate):
  - o Original research articles in high impact journals
  - o Conferences, proceedings and books
  - o Patents
  - o Participation in national and international research projects
  - o PI/coordination of national and international research projects/WPs
- Proved experience in the following aspects is mandatory:
  - o *Hands on* deposition of oxide and metallic thin films by using PLD, ALD or similar techniques
  - o Deposition of thin film oxide heterostructures
  - o Structural and morphological characterization of functional thin films (epitaxial and polycrystalline) by AFM, SEM, TEM, WDS, XRD, Raman and Ellipsometry.
  - o Electrical and electrochemical characterization of functional oxide thin films
  - o Characterization of mass transport properties in functional oxide thin films
  - o Integration of thin films in solid state devices
  - o In the fields of Solid Oxide Cells, Li-ion batteries and other devices for energy
- Proved experience in the following aspects will be positively evaluated:
  - o Maintenance of experimental facilities for thin film deposition
  - o Microfabrication of functional devices
  - o Mentoring and team leading (PhD thesis, Master/Bachelor thesis, etc)
  - o Funds searching

- Research in international teams (research visiting, international partnerships, pre-doctoral and post-doctoral research stays, etc)

**Proposed Jury:**

Presidència	Titular	Dr. Albert Tarancón Rubio
Vocal 1	Titular	Dr. Edgardo Saucedo
Vocal 2	Titular	Dr. José Santiso (ICN2, CSIC)