The mission of the Catalan Institute of Nanoscience and Nanotechnology (ICN2) is to achieve the highest level of scientific and technological excellence in Nanoscience and Nanotechnology. Its research lines focus on the newly-discovered physical and chemical properties that arise from the behavior of matter at the nanoscale. ICN2 has been awarded with the Severo Ochoa Center of Excellence distinction for two consecutive periods (2014-2018 and 2018-2022). ICN2 comprises 18 Research Groups, 7 Technical Development and Support Units and Facilities, and 2 Research Platforms, covering different areas of nanoscience and nanotechnology.

**Job Title:** PhD Student

**Research area or group:** Nanostructured Materials for Photovoltaic Energy Group

**Description of Group/Project:**

Photovoltaic devices can directly convert sunlight into electricity, being an unlimited source of renewable energy. Perovskite solar cells are a new photovoltaic technology employing low cost fabrication and materials. Recently, have reached power conversion efficiencies over 25%, benchmarking the traditional silicon devices, and boosting its interest into a prompt industrialisation. Before that, the stability issues need to be solved in order to achieve long-lasting devices that are feasible for a commercial product. Interfaces between the different layers forming the solar cell are known to be a major source of instability. The project aims to work on these interfaces by using new materials, compositions or morphologies as well as investigating the nature of the interface processes that cause device failure. The project is coordinated by Prof. Monica Lira-Cantú (Group Leader) and Dr. Sonia R. Raga (Senior researcher) of the Nanostructured Materials for Photovoltaic Energy Group.

**Main Tasks and responsibilities:**

- Deposition of layered thin films via different methods (spin-coating, spray pyrolysis, vacuum evaporation, etc.) to fabricate high efficiency solar cells.
- Characterisation of the individual materials used in the device, as well as the complete solar cell devices by means of electrical and optical techniques.
- Process and analysis of the characterisation data, keep the research data organised.
- Elaboration of periodic reports to keep track of the project progress.
- Preparation of scientific manuscripts and presentations in workshops or conferences to showcase your research results to the scientific community.

**Requirements:**

- **Education**
  
  In possession of, or about to finish, a Master degree in physics, chemistry, materials science, nanotechnology, electronics or closely related discipline.

- **Knowledge, professional experience and competences**
  
  English (Advanced), knowledge of Spanish or Catalan would be beneficial but not necessary.
High level of experimental skills and self-discipline to fabricate reproducible devices. Ability to work safely in the lab environment. Previous experience on semiconductor physics, organic electronics or electrical characterisation (electrochemistry, impedance spectroscopy, etc.) would be an advantage. We encourage a high degree of responsibility and independence, but also stimulate interaction and discussion with colleagues.

Summary of conditions:
- Full time work (37.5h/week)
- Contract Length: Temporary (4 years)
- Support to the relocation issues.
- Life Insurance.

Estimated Incorporation date: 2021

ICN2 offers a dynamic ecosystem with enthusiastic colleagues. The candidate will be specifically trained on materials synthesis, characterization, and evaluation in Perovskite Solar Cells. In addition to acquiring broad scientific multidisciplinary knowledge, the candidate will be additionally trained on education, safety, viability and sustainability of nanostructured materials. He/she will gain communication and technology transfer skills and will be trained from the beginning to get familiar and follow the Good Laboratory Practice and Responsible Research and Innovation principles.

How to apply:
All applications must be made via the ICN2 website https://jobs.icn2.cat/job-openings/247/phd-student-nanostructured-materials-for-photovoltaic-energy-group and include the following:

1. A cover letter.
2. A full CV including contact details.
3. 2 Reference letters or referee contacts.
4. Academic records (if the transcripts are not in English, Catalan or Spanish, applicants should also attach a translation in one of the mentioned languages).

Deadline: 15th September 2020. Applications will be evaluated as they are received.

Equal opportunities:
ICN2 is an equal opportunity employer committed to diversity and inclusion of people with disabilities.