

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 behaviour of matter at the nanoscale. ICN2 has been awarded with the Severo Ochoa Center of Excellence distinction for three consecutive periods (2014-2018 and 2018-2022 and 2023-2026). ICN2 comprises 20 Research Groups, 7 Technical Development and Support Units and Facilities, and 2 Research Platforms, covering different areas of nanoscience and nanotechnology.

Job Title: Research Assistant in nanoimprint lithography

Research area or group: Nanoscience Instrument Development Division

Description of Group/Project:

The objective of the project is to integrate hierarchical micro/nanostructured patterns on solar photovoltaics by nanoimprint lithography (NIL) to combine different functionalities. A variety of emerging large-area NIL processes (e.g. thermal and UV roll-to-plate and roll-to-roll NIL process) provide powerful tools for producing multifunctional micro/nanostructures over large areas at low cost and high yield rate for industrial-scale applications. We are seeking for a motivated research assistant to contribute to solve the challenges of nanofabrication and field testing of the nanostructured coatings. This is driven by the need of producing advanced thermo-functional materials for PV at industrial scale, which could help to reduce their operation temperature and increase their efficiency. Our aim is to contribute to reduce the intensive energy use and carbon footprint of conventional cooling technologies and increase the efficiency of other renewable energy technologies such as PV. The candidate will participate in a project that involves interactions with industry, market and research.

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Main Tasks and responsibilities:

We look for exceptional people and give them a level of responsibility, exposure and autonomy that will accelerate their career.

You will be involved in the development and nanofabrication of the hierarchical functional patterns and will participate in their experimental characterization, collaborating also in the field testing.

Responsibilities

- Planning, preparation, execution, data analysis and reporting of nanofabrication procedures and field test activities.
- Nanofabrication of the structured coatings by nanoimprint lithography.
- Characterization of the optical properties of these coatings by spectroscopy (UVVIS and IR).
- Participate in the thermal performance characterization and outdoor field tests for pilot projects. These tests include improved electric performance of solar cells and the evaluation of the cooling performance obtained by continuous temperature cycle and net cooling power measurements.
- Participate in the conception, the design and the set-up of the thermal experiments.

Requirements:

- **Education:** BSc or Master degree in material science, physics, nanotechnology, or equivalent.
- **Knowledge:**
Background and interest in nanolithography/patterning technology. A good understanding of the related material properties and processing concepts is essential while experience in photonics and nanoimprint lithography are a plus.
Background and an interest in instrumentation for characterization and field testing.
Thrive in a collaborative environment involving different stakeholders and subject matter experts.
- **Professional Experience:** Proven track record for working well across teams and with external partners.
- **Personal Competences:**
Highly motivated, have a transversal background and enjoy learning new skills.
Creative, collaborative and like to work in a high performant team to solve problems.
Ability to meet deadlines with quality output deliverables.
Flexible to accept new challenges in the future, and to evolve together with the changing R&D demands of our high-tech environment.
Proactive and autonomous character
Excellent team player with very good communication and reporting skills.

Summary of conditions:

- Full time work (37,5h/week)
- Contract Length: 2 years (with possible extension of 1 year)
- Location: Bellaterra (Barcelona)
- Salary will depend on qualifications and demonstrated experience.
- Support to the relocation issues.
- Life Insurance.

Estimated Incorporation date: As soon as possible.

How to apply:

All applications must be made via the ICN2 website <https://jobs.icn2.cat/job-openings/510/research-assistant-in-nanoimprint-lithography-nanoscience-instrument-development-division> and include the following:

1. A cover letter.
2. A full CV including contact details.
3. 2 Reference letters or referee contacts.

Extended Deadline for applications: 30/04/2023

Equal opportunities:

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

ICN2 is following the procedure for contract of people with disabilities according with article 59 of the Royal Decree 1/2015, of 30 of October.