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: Research Engineer in Nanoimprint lithography

Research area or group: Phononic and Photonic Nanostructure

Description of Group/Project:

Mass producing nano and microstructures over large areas is paramount to transfer the advantages of advanced micro/nano technologies developed by researchers to commercial applications. In particular, a variety of emerging large-area NIL processes (e.g. roll-to-plate NIL, roll-to-roll NIL process) provide ideal solutions and powerful tools for mass producing micro/nanostructures over large areas and continuous patterning at low cost and high yield rate for the industrial scale applications.
The objective of the project is to fabricate micro/nanostructures over large areas by imprint lithography as a test for mass production and for transferring a technology from the lab to the industry. This objective is driven by the need to produce advanced thermo-functional materials for passive cooling applications at industrial scale, which could help reduce the high energy foot print of current cooling technologies, thus contributing technologically to mitigate climate change.
The project is part of the ICN2 collaboration with the recently created spin-off Cooling Photonics

Main Tasks and responsibilities:

We are looking for a motivated research engineer to contribute to solve the challenges of scaling-up our micro- and nanoreplication processes from a current batch-to-batch imprint lithography to large-area fabrication through pilots with the industry.

Ideally, the successful applicant has experience in nanotechnology and nanofabrication. The main goal is to a to implement a solution to scale-up our current micro- and nanoreplication processes based on batch-to-batch imprint lithography to a method suited for large-areas with high throughput. The applicant will participate in a project involving interactions with industry, market and research. Planning, experimental method development, instrumentation, carrying out of planned and new experiments, analysis of data and reporting of results are an integral part of the activities associated with the position.

As a research engineer:

• You will use your expertise in optics and in nanoimprint technology to contribute to carry out a pilot project where a surface of few m^2 must be covered with a patterned material using imprint UV lithography.

• You will participate in the conception and the design of an implementation for printing a patterned film on a surface of few m^2. You can rely on the processing and analysis tools in our cleanroom facilities and associated laboratories.

• You will contribute to design, plan and carry out pilot tests with big industry players, providing valuable inputs for the analysis of experimental data and the reporting of results.

• You will perform the optical characterization and physical testing, evaluation of performance, durability and reliability testing and document the process, characterization and the assessment of the results.

Requeriments:

- **Education**

  A BSc or Master degree in material science, physics, nanotechnology, or equivalent.

- **Knowledge and professional experience**

  Background in nanoimprint technology.

  Good understanding of the related material properties and processing concepts is essential while, experience in optics is a plus.

- **Competences**

  Self-motivated and willing to tackle the challenges of bringing nanoimprint technology to a large-scale nanofabrication technique.

  Creative and like to think with the 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 character

  Excellent team player with very good communication and reporting skills.

  You are able to identify and resolve technical, operational and organizational problems

Summary of conditions:

- Full time work (37,5h/week)
- Contract Length: Temporary (6 months)
- Salary will depend on qualifications and demonstrated experience.
- Support to the relocation issues.
- Life Insurance.

Estimated Incorporation date: 1st May 2021

How to apply:
All applications must be made via the ICN2 website https://jobs.icn2.cat/job-openings/283/research-engineer-in-nanoimprint-lithography and include the following:

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

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