As a flagship research center in nanoscience and nanotechnology, our mission is to open and explore new frontiers of knowledge at the nanoscale, and bring value to society in the form of new understanding, capabilities and innovation, while inspiring and providing broad training to the next generations of researchers.

Our 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 19 Research Groups, 7 Technical Development and Support Units and Facilities, and 2 Research Platforms, covering different areas of nanoscience and nanotechnology.

Job Title: Postdoctoral researcher in electrochemical methane to methanol conversion

Research area or group: NanoElectrocatalysis and Sustainable Chemistry Group

Description of Group/Project: The NanoElectrocatalysis Group combines electrochemistry, materials engineering and in situ characterisation at the atomic scale to elucidate design principles for the discovery and development of novel electrocatalyst materials for the conversion and storage of renewable energy, as well as the production of sustainable fuels and chemicals. We offer stimulating working conditions in a vibrant, interdisciplinary and international research environment. Within this project, the candidate will characterise functional electrocatalyst materials and investigate the molecular mechanisms for the indirect electrochemical methane activation (via the formation of radical species) and conversion into methanol and other valuable chemicals.

Main Tasks and responsibilities: The successful candidate will combine classical electrochemical methods with in situ characterisation techniques such as electrochemical scanning probe microscopy, Raman spectroscopy, electrochemical mass spectrometry and synchrotron-based structural characterisation methods. This combination will be used to investigate the structure-property relations of electrocatalyst materials as well as the mechanism of electrocatalytic oxidation reactions. The main reaction of interest is the electrochemical conversion of methane into methanol. The candidate will develop electrochemical and in situ characterisation methods and setups for the real-time detection of intermediates and products during electrocatalytic reactions. The research will be carried out in collaboration with other groups at both ICN2 and foreign research institutions. The candidate will carry out independent research under supervision, write scientific papers for publication in peer-reviewed journals, and disseminate their work in international conferences.

Requirements:
We are looking for a motivated, creative, curious, and innovative candidate with a PhD within the field of electrochemistry and work experience in electrocatalysis and in situ characterisation and product detection with relevant publications within electrochemistry and electrocatalysis as a lead author. The successful candidate will have excellent communication skills, excellent written and spoken English, and be willing and able to develop experimental electrochimical and in-situ characterisation methods, advance the research project and work both independently and as part of an international team at the ICN2.

Summary of conditions:

- Full time work (37,5h/week)
- Contract Length:

- Location: Bellaterra (Barcelona)
- Salary will depend on qualifications and demonstrated experience.
- Support to the relocation issues.
- Life Insurance.
- Work-Life Balance and Flexibility with flexible work schedules
- 28 holidays per year
- Flexible compensation plan: tax advantages contracting some products (health insurance, childcare, training, among others.)
- Training activities: languages, mentoring programme, wellbeing programme.
- International environment

Estimated Incorporation date: December 2024

Funded by the European Union/European Research Council Executive Agency (ERC-CoG, ATOMISTIC, grant agreement 101045778)

How to apply:
All applications must be made via the ICN2 website and include the following:

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

Deadline for applications: 15/10/2024

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.