

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 Centre of Excellence distinction for two consecutive periods (2014-2018 and 2018-2022). 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 Spectroelectrochemistry and Electrocatalysis for Energy Conversion

**Research area or group:** NanoElectrocatalysis and Sustainable Chemistry

**Description of Group/Project:**

The NanoElectrocatalysis and Sustainable Chemistry Group combines electrochemistry, materials science and in situ spectroscopic and microscopic 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 creative and stimulating working conditions in a dynamic and international research environment. Within this postdoctoral fellowship, the candidate will characterise functional electrocatalyst nanomaterials and investigate the molecular mechanisms of electrocatalytic reactions for energy conversion and production of green fuels.

**Main Tasks and responsibilities:**

The successful candidate will combine classical electrochemical methods with in situ characterisation techniques including infrared and Raman spectroscopy, electrochemical mass spectrometry and synchrotron-based structural characterisation methods to investigate the structure-property relations of electrocatalyst materials as well as the mechanism of electrocatalytic reactions. The main reactions of interest involve oxygen evolution for green hydrogen production and electrochemical reduction of carbon dioxide into renewable fuels. 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(s) of electrochemistry or physical chemistry and work experience in electrocatalysis and in situ spectroscopic techniques, with relevant publications within electrochemistry and electrocatalysis as a lead author. In addition, it is desirable that the candidate has knowledge and experience in materials characterisation, gas chromatography, and synchrotron X-ray based techniques for the characterisation of electrocatalytic reactions. The successful candidate will have excellent communication skills, and excellent written and spoken English, and be willing and able to develop experimental electrochemical and spectroscopic 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: Temporary (2 years)
- Location: Bellaterra (Barcelona)
- Salary will depend on qualifications and demonstrated experience.
- Support to the relocation issues.
- Life Insurance.
- Flexible working time
- Teleworking option

Estimated Incorporation date: January 2023.

### How to apply:

All applications must be made via the ICN2 <https://jobs.icn2.cat/job-openings/441/postdoctoral-researcher-in-spectroelectrochemistry-and-electrocatalysis-for-energy-conversion> and include the following:

1. A cover letter (one page) motivating the application
2. Curriculum vitae
3. A list of publications (including the candidates' contributions for maximum of five most important publications)
4. Copy of PhD degree diploma
5. Contact details (name and e-mail addresses) of 2-3 professional referees

Deadline for applications: 15 November 2022.

### 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.