

Postdoctoral Position on Perovskite Solar Cell Stability

Description Project Outline:

Halide perovskite solar cells (PSCs) have revolutionized the photovoltaic arena providing power conversion efficiencies currently above 25 %, low cost and ease of fabrication. Their combination in tandem architectures with Silicon solar cells will permit building terawatt-scale energy production required for low-carbon economy, shaping the energy future of our society. However, the limited lifetime of PSC is a drawback for the deployment and commercialization of this technology.

We offer a Postdoctoral contract to work under the SolarEraNet project “PrOperPhotoMiLe” related to the stability of Halide Perovskite Solar Cells and Machine Learning. The candidate will work with highly efficient and stable PSCs to be analysed following the ISOS protocols recently upgraded for PSCs (Nat. Energ. 2020, 5, 35-49). Indoor and Outdoor analysis of complete devices will be carried out together with data analysis and treatment. The work will be carried out at the Nanostructured Materials for Photovoltaic Energy Group at ICN2.

Candidate tasks:

- Fabrication and characterization of high efficiency halide perovskite solar cells (PSC).
- Stability analysis of PSCs following the recently upgraded ISOS protocols.
- Process and analysis of data.
- 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.
- Skills on proposal writing.
- PhD students supervision.

Candidate profile:

- PhD degree in physics, chemistry, materials science, nanotechnology, electronics or closely related discipline.
- Mandatory a high English level (written and spoken).
- Highly motivated and enthusiastic researcher.
- Strong analytical skills and a keen interest in the interpretation of complex data.
- Excellent organisation skills, time management and ability to work to priorities.
- Excellent written and oral communication skills.

Offer details:

One-year project, to initiate on January 1st, 2023, with the possibility to be extended depending on candidate results.

Requirements:

Education: In possession of PhD degree in physics, chemistry, materials science, nanotechnology, electronics or closely related discipline.

Language: English (Advanced), knowledge of Spanish or Catalan would be beneficial but not necessary.

Skills/Qualifications: Experience in stability analyses of PSCs. Knowledge of ISOS protocols for PSCs. Data management and treatment. High level of experimental skills and self-discipline to fabricate reproducible devices. Ability to work safely in the lab environment. We encourage a high degree of responsibility and independence, but also stimulate interaction and discussion with colleagues.

How to apply: Send a CV in English and a Cover letter to <https://jobs.icn2.cat/job-openings/443/postdoctoral-position-on-perovskite-solar-cell-stability> The cover letter should include the following paragraph as a summary of the candidate information:

Number (##) of peer reviewed articles. (Add the journals with high impact factor where you have published. Example: 1x Nature Energy; 6x Energy & Environmental Science; 8x Adv. Energy Materials; 6x Adv. Func. Mater, etc.) **## book chapters** (Editorial: Springer, Elsevier, Wiley...), **## edited books** (Editorial). **## patents. H indexes:** Google Scholar (as on dd/mm/yyyy): **##**, with > xxxxx citations. ISI WoS (dd/mm/yyyy): **##**, with > xxxx citations. Scopus (dd/mm/yyyy): **##**, with xxx citations. Average **##** citations per publication: #.

Example:

XXX XXX has 50 publications, among them more than 45 published papers in international scientific journals (2 in Nature Energy IF = 54, five in Energy Env Sci IF = 33), 2 patents, 2 book chapters (Springer), and a h index of xx with xxx citations (Google Scholar, 07/10/22) with an average citations per publication of xxx. He/she has directed more than xx members: 4 PhDs, 2 Master and 2 BS. He/She has managed more than 3 research grants, 1 as coordinator and has given more than 5 scientific conferences to congresses (1 invited).

Deadline October 30th, 2022