PhD Grant: Chemical Physics of Ferroelectric Surfaces

The Oxide NanoPhysics Group in collaboration with the Novel Energy Oriented Materials and the Theory and Simulations Group at the Catalan Institute of Nanoscience and Nanotechnology (ICN2, Barcelona) offers a PhD grant associated to the project SURFER (PID2019-109931GB-I00) of the Spanish Ministerio de Ciencia e Innovación.

The project is designed to seek into energy conversion processes mediated by ferroelectricity to harvest green energies into chemical redox reactions such as photochemistry, pyrochemistry or ferrochemistry and piezochemistry, with the use of ferroelectric materials. It is a strongly multidisciplinary project covering from the development of simulation codes to understand the electrochemistry of FE oxide surfaces to the synthesis of ferroelectric hybrid heterostructures to be applied and tested in a wide range of electrochemical setups: photocatalytic water splitting, electrolysis cells with hybrid ferroelectric electrodes, piezocatalytic and flexocatalytic water splitting and redox reactions, and new photochemical controlled ferroelectric polarization devices. To this end, we will use multiscale characterization techniques such as electrochemical cells, ambient pressure XPS and advanced atomic force microscopy.

Requirements:

- BSc in Physics, Chemistry, Physical Chemistry, Materials Science or related fields.
- The applicant must also have an MSc and/or be about to get one before August 2021.

Summary of conditions:

- Full time work (37.5h/week)
- PhD Grant Length: 4 years

How to apply:

Call deadline October 18th, 2020

Applicants should directly contact Dr. Neus Domingo at neus.domingo@icn2.cat.

Grant announcement: https://jobs.icn2.cat/job-openings/263/phd-student-oxide-nanophysics-group-advanced-afm-lab

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