

Postdoc in experimental surface electrochemistry

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The Nanophysics Lab (<https://cfm.ehu.es/nanophysicslab/>) at the Materials Physics Center of the University of the Basque Country and the Donostia International Physics Center in San Sebastián, Spain, is wishing to appoint a motivated postdoc to conduct experiments on surface electrochemistry. The position is for 2 years (which can be extended up to a third year upon mutual agreement), with the start date of February 1st, 2021 or as soon as possible thereafter.

Development of optimized catalyst requires a comprehensive atomic scale picture of the chemical and physical properties of surfaces, in connection to their macroscopic catalytic performance. This project focuses on novel two-dimensional materials and thin film oxides relevant for oxygen evolution reaction and CO₂ reduction, and proposes to bridge the gap between surface science studies and real electrocatalytic systems. The experimental approach combines topographic (scanning tunneling microscopy, STM) and chemical (X-Ray photoemission spectroscopy, XPS) characterization in ultra-high-vacuum, and parallel electrochemical test on the very same sample. The candidate will study the catalyst before and after the electrochemical reaction to unveil catalyst structure-function relationships for relevant electrocatalytic systems. This work will be combined with ambient pressure XPS experiments performed in Synchrotron Radiation facilities to examine the in-situ interaction of mixtures of reactants and products with the catalytic surfaces. The main scientific responsibilities of the chosen candidate will be: (1) to carry out the electrochemical tests in connection with the surface science characterization of the catalysts, (2) to participate in the synthesis of model catalysts with specific active sites, and (3) to benefit from a strong collaborative action with theoretical and experimental groups with complementary expertise.

We seek a well-motivated candidate, with strong interest in electrocatalysis, and willing to work in a collaborative environment with complex experiments. Initiative, creativity and an independent working attitude will be highly valued. The candidate is expected to have a PhD degree in Chemistry, but candidates with appropriate background and a PhD in Physics or Chemical Engineering will also be considered. It is mandatory that the candidate has extensive experience in electrochemistry. Experience working with ultra-high-vacuum methods will also be valuable.

Application

Applications must be submitted (**no later than 5 January 2021**) as PDF files containing:

- A letter motivating the application (cover letter)
- Curriculum vitae
- Two reference letters and/or contact email of two potential referees. Reference letters can be sent by the referees to sara.barja@ehu.eus with the subject: Recommendation Letter Postdoc *Name of the candidate*.

All interested candidates irrespective of age, gender, race, disability, religion or ethnic background are encouraged to apply.

The position is between the Donostia International Physics Center and the Materials Physics Center of the University of the Basque Country, in San Sebastián, Spain, where the candidate will be sharing his/her time during the project. This project has received funding from the Spanish Government's grant program "Europa Excelencia 2020" under grant number EUR2020-112066.