

## Company Description

CIC energiGUNE is a research center specialized in energy, electrochemical storage (batteries and supercapacitors), thermal energy solutions and hydrogen, a member of the Basque Research and Technology Alliance- BRTA, and a strategic initiative of the Basque Government. CIC energiGUNE was created in 2011 to generate excellent knowledge and at the same time useful for the Basque business network, being a reference in knowledge transfer. CIC energiGUNE has a dynamic research team of more than 100 researchers and is extremely well equipped with a wide range of up-to-date facilities that are fully available for all its researchers. Also, the European Commission has recently awarded CIC energiGUNE with the 'HR Excellence in Research' which reflects its commitment to achieving fair and transparent recruitment and appraisal procedures and certifies the existence of a stimulating and favorable work environment for researchers in the institution. For more details on CIC energiGUNE's research activities please visit our website at <http://www.cicenergigune.com>

## Information

 Deadline: 2022-05-31
  Country: Basque Country  
 Category: Business
  City: Vitoria-Gasteiz  
 Province: Araba / Alava

## Company

CIC energiGUNE



## Main functions, requisites & benefits

### Main functions

**JOB DESCRIPTION:** CIC energiGUNE is seeking for three experienced postdocs to work in a challenging and novel project focused on green H<sub>2</sub> production by thermo-chemical water splitting activated through non-conventional heating (microwave and magnetic). The project requires a multidisciplinary approach combining chemical, physical and engineering disciplines in order to reach successfully the objectives set, one above the others the efficient production of Green Hydrogen under mild conditions (low temperature) and preferentially using industrial wastes as primary feedstock (contribution to environmental protection and circular economy). The main pillars of the project are listed below: In deep development and characterization of tailor-made reactive materials with maximized performance for thermal water splitting under non-conventional heating. The study of industrial residuals with promising chemical compositions with potential application in thermal water splitting under non-conventional heating. Evaluation of materials performance (vs. thermal water splitting) in terms of hydrogen production efficiency, reversibility and cyclability when subjected to non-conventional activation techniques. The implementation of a strategy for materials improvement to maximize the reactivity when the materials do not show the desired behaviour (e.g., tuning the microstructure, adding dopants, etc.) Fundamental understanding and evaluation of the key parameters affecting the efficiency of the process with the final aim to control it. All in all, this is a very ambitious project since thermo-chemical water splitting under non-conventional heating is still at a very initial stage. Therefore, the selected postdocs must show the commitment, dedication and passion in facing these exciting and new challenges. The candidates will have the chance to work in a multidisciplinary environment composed by Chemists, Physicists and Engineers having the possibility to extend their knowledge approaching the research under different points of view. **Job function:** To select industrial waste with potential application in the studied application To develop tailor-made reactive materials for the studied application To full characterize the selected industrial waste and prepared materials To perform experimental validation of the industrial waste and prepared materials To understand and correlate the materials performance with the material characteristics and the heating source To collaborate actively with other team members To generate new ideas within the frame of the topic

### Requisites

**CANDIDATE PROFILE:** PhD in Chemistry, Material Science, Chemical engineering, Applied Physics or related fields For candidate #1 (chemistry/material sciences): Experience in inorganic materials synthesis, modification and characterization. For candidate #2 (chemistry/chemical engineering): Experience in thermochemical water splitting or/and micro-wave assisted chemistry For candidate #3 (applied physics): Experience in interaction of magnetic or electromagnetic fields with matter, including mechanisms and thermodynamic approaches A team player who can collaborate with other groups, technological centres, and industries. Excellent verbal and written communication skills in English.

### Benefits