




## 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.

## Information

 **Deadline:** 2022-10-31  
 **Category:** Academia  
 **Province:** Araba / Álava

 **Country:** Basque Country  
 **City:** Vitoria-Gasteiz

## Company

CIC energiGUNE



## Main functions, requisites & benefits

### Main functions

CIC energiGUNE is seeking for one experienced postdoc to work in a challenging project focused on the development of a new class of high-temperature solid-solid phase change materials. 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 production of highly efficient materials for low-cost compact thermal energy storage applications at high temperature. The main pillars of the project are listed below: Rational design, synthesis and in-depth characterization of phase change materials displaying high-enthalpy solid-state phase transitions in the temperature range from 400 °C to 650 °C. Improvement of the mechanical and heat transfer properties of the phase change materials through simple, non-expensive techniques such as doping with micro- nano carbon additives. Development of effective coatings to avoid direct contact between the phase change materials and commonly used high-temperature heat transfer fluids, thus preventing degradation. 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: Rational design of phase change materials from pre-selected anhydrous salt-based multicomponent systems Synthesis of phase change material and optimization of the synthesis parameters Improvement of mechanical and thermal properties of the phase change materials through doping with proper micro- nano additives Appropriate coatings development to protect the phase change material against commonly used high-temperature heat transfer fluids (e.g., molten salts) Full characterization (structural, physical and thermodynamic) of phase change materials, coatings and coated materials Lifetime assessment of developed material through appropriate durability tests To collaborate actively with other team members To generate new ideas within the frame of the topic

### Requisites

PhD in Chemistry, Material Science, Chemical engineering, Applied Physics or related fields Experience on high-temperature phase change materials for thermal energy storage Experience in inorganic materials synthesis and modification, especially in anhydrous salt-based materials Experience in commonly used experimental techniques for structural, thermal and mechanical characterization of phase change materials. A team player who can collaborate with other groups, technological centres, and industries. Excellent verbal and written communication skills in English.

### Benefits

We are offering a 24 months contract and advantageous professional development opportunities with a competitive salary within the category. Access to a complete set of existing laboratory infrastructure and equipment, as well as to the needs identified during the project development to ensure a fruitful stay and the fulfillment of the objectives in due time. Candidates will join an integrated, enthusiastic, and multidisciplinary institute making high quality research and impactful contributions to the energy and sustainability