



PhD Fellowship for Supercapacitor Research Line through Basque Government Grant

CIC energiGUNE is looking for a highly motivated candidate with a university degree in Chemistry, or Materials science-Engineering to apply for a Basque Government PhD Grant. Check eligibility section.

The offer is aimed at students currently completing or who have already completed a master degree in related subjects: electrochemistry, materials science, physics, chemistry, engineering, etc.

Candidates must show initiative, independent thinking as well as capability to work in collaborative environments. He/she will be part of a multidisciplinary international research team. Good English level is highly recommended.

Eligibility

The position is subject to obtaining a Basque Government PhD Grant:

<http://www.hezkuntza.ejgv.euskadi.eus/>

In order to be eligible the candidate must:

- Be **resident** in the Basque Country prior to 31st December 2015.
- Be **fluent** in Spanish or Basque language (for the interview process)
- **Grade** obtained in **2012 or after**.
- **Grade records (over 10) higher than: 7.5 in Engineering; .8.0 in Chemistry; 9.0 in Physics.**

Note that those candidates not fulfilling all of the above criteria will be automatically discarded.

PhD project Description

Research Line: Supercapacitors

Title: Development of advanced electrochemical capacitors through a wise combination of innovative electrode materials and electrolytes.

Supervisor: *Dr. Roman Mysyk*

The research project will be focused on the development of advanced supercapacitors by optimizing electrode nanomaterials and engineering the best performing combinations between innovative electrolytes and electrode nanomaterials.

Electrochemical energy storage systems (ESS) are poised as a major solution to reducing the consumption of fossil fuels and allowing on-demand energy delivery. Supercapacitors (SCs) represent a promising EES delivering high power (> 10kW/kg) with exceptional lifetime stability.



Major impediments to their widespread use are low energy delivery (5 Wh/kg) and high cost. The energy density of supercapacitors is particularly limited by the high reactivity of electrode/electrolyte interface. On the electrode side, the prospective PhD candidate will modify electrode nanomaterials, particularly including nanoporous carbons and graphene, to ultimately extend the usable cell voltage. On the electrolyte side, the PhD candidate will focus on the application of innovative lower-cost electrolytes to symmetric and asymmetric combinations of nanomaterial electrodes. Mixed electrolytes will also be applied to decrease the resistance of supercapacitor cells and increase their operational temperature range. The materials and electrolytes will be characterized by advanced characterization techniques available at CIC Energigune.

The PhD programme is expected to offer an innovative solution to overcoming the limitations of state-of-the-art SCs by maximizing performance and providing better affordability.

How to apply

To apply for a CIC energigUNE grant please enter your **CV** and **degree certificate record** through our website <http://www.cicenergigune.com/en/trabajar/>

The selection process ends once a candidate is selected.

CIC Energigune is committed to affirmative action, equal opportunity and the diversity of its workforce.