

Position Title: PHD scholarship	Position Code: PhD 1-2-3
Department: Elect. Engineering	Position Grade: PhD student
Revision Date:	Fair Labor Standards Act (FLSA): DOCUMENT CG 15/6 2019

Position Overview

The Center for Renewable Electrical Energy Systems (SEER) at the Technical University of Catalonia - BarcelonaTech (UPC) conducts leading edge research at internationally level in the field of distributed electric power systems to make large scale integration of renewable energies a reality into the smart electrical energy networks of the future.

If you are looking for a challenging higher-end electrical engineering research opportunity in a highly dynamic, continuous learning and team focused environment you should contact us since we have **3 vacant PhD positions** waiting for candidates. These PhD positions are in the area of **cutting-edge photovoltaic power plants**. The research activities conducted in the framework of these research projects will have a strong industrial focus, with a team of PhD fellows expected to work in close collaboration with two worldwide leader industrial partners.

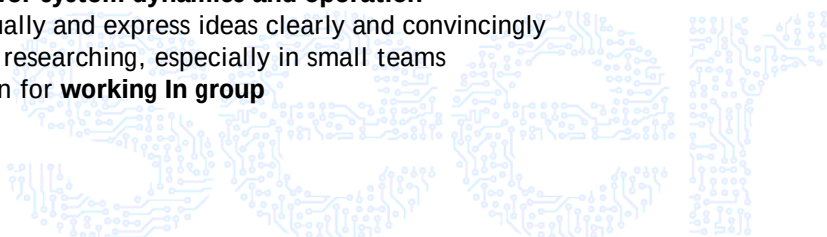
The research work to be conducted by the PhD fellows' team deals with analyzing, designing and demonstrating new hardware systems and control strategies for embedding energy storage in photovoltaic power plants in order to provide new functionalities to the utilities.

Essential Tasks

- Analysis and design of power converters
- Analysis and design of energy storage systems
- Simulation of control algorithms for power converters
- Programing of control algorithms in DSPs
- Active participation in constructing and testing of power converter prototypes
- Active participation in testing energy storage technologies
- Simulation of PV power plants
- Simulation of distributed power systems
- Analysis and design of control strategies for PV power plants embedding energy storage
- Active participation in evaluating the proposed solutions in an experimental PV power plant

Valuable Skills

- Demonstrate some **hands-on experience** in designing **hardware** for power converters
- Used to use electrical **simulation tools** as PSCAD, MatLab, PSIM, PLECS, Simplorer, DigSILENT, EMTD
- Familiar with **DSP (TMS320F28335)** and FPGA designs
- Knowledge of **programming in C, C++**, Visual Studio .NET
- Understanding of the **power converters and control**
- Understanding of the **power system dynamics and operation**
- Be able to think conceptually and express ideas clearly and convincingly
- Have some experience in researching, especially in small teams
- Good skills and motivation for **working in group**



Requirements

- **MSc degree** (or equivalent degree) in electrical engineering (or a related subject), or an official document certifying that undergraduate students with an outstanding academic record
- **MSc thesis work** related to either design and control of power converters or distributed power systems based on renewable energies
- **Proof of English language proficiency**. Accepted language tests are TOEFL, IELTS, CAE or CPE (or equivalent tests).
- **Holding a position at a University with active agreement with Fundació Carolina**
<https://www.fundacioncarolina.es/formacion/becas-de-doctorado-y-estancias-cortas-postdoctorales/convenios-con-instituciones-academicas/#toggle-id-3-closed>

Application Procedure

Applicants should **submit**:

- Application letter
- CV (summarizing education, positions and academic work - scientific publications)
- Copies of educational certificates and transcript of records
- Proof of English language knowledge
- 2 letters of recommendation (if possible)
- Names and contact details of 2-3 referees (name, relation to candidate, e-mail and telephone number)

by **email** to:

Alvaro Luna
Center for Renewable Electrical Energy Systems (SEER)
Technical University of Catalonia – BarcelonaTech
luna@ee.upc.edu
Tel. +34 93 738 85 46
GAIA building
Rabla Sant Nebridi, s/n
08222 Terrassa-BARCELONA, SPAIN

NOTE:

This position description is not intended to be all-inclusive. Research fellows may perform other related duties as agreed to meet the ongoing needs of the research projects.
Phone and/or personal interviews be used as part of the appointment process.

