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Engineer Project / Researcher – WEDISTRICKT

ECOS – Energy Efficiency in Systems, Buildings and Communities Group

The applicant will work as a research / project engineer in projects related to energy efficiency in buildings and communities, DER (Distributed Energy Resources) integration and energy management systems in buildings. He/she will report to Head of the Thermal Energy and Building Performance Group and the project coordinator of the WEDISTRICKT project.

The Research Group

The research will be embedded in the **Thermal Energy and Building Performance Group** which main research subject is the Integrated and Systemic approach for Zero Energy Communities, Buildings and Industries. The group's special focus is on the Mediterranean and other warm weather regions. The vision is to build an applied research group that contributes to accelerate the reduction of greenhouse gas emissions (GHG) through energy efficiency measures, production of clean energy, and integration of distributed renewable energy sources (RES).

The research group is also managing the **Semi-Virtual Energy Integration Laboratory (SEILAB)** which provides advanced expertise to assess the development and integration of renewable energy solutions and innovative thermal and electrical equipment that are designed to improve energy efficiency in buildings and energy systems. The laboratory is provided with cutting-edge technology comprising systems for energy generation, heat and cool storage and state-of-the-art facilities for testing HVAC equipment and the interaction of energy systems with the grid. The laboratory operation is based on a semi-virtual testing approach, which allows for real equipment to be operated as a function of the behaviour of a dynamic virtual model. The laboratory is pioneer in addressing the smart integration of electrical and thermal components and aims to become a leading experimental facility for improving the development of Net Zero Energy Buildings.

Description

He /she will be involved in tasks such as energy simulation of buildings and HVAC systems, integration of renewable energies in buildings and/or systems, and experimental work related to HVAC systems in buildings (data analysis, preparation of tests, running experimental tests). Integrated in a multi-disciplinary team, the candidate is expected to run research activities as part of international projects or projects with industrial partners. The main project where the applicant will work on is the EU project WEDISTRICKT. The overall objective of WEDISTRICKT is to demonstrate DHC as an integrated solution that exploits the combination of RES, thermal storage and waste heat recycling technologies to satisfy 100% of the heating and cooling energy demand in new DHC and up to 60-100% in retrofitted DHC. For this purpose, the focus of WEDISTRICKT is large-scale replication of best practice: better valorisation of local resources, like renewable and waste heat by making District Heating and Cooling networks more efficient in relation to the use of new resources. IREC's works in the project will include heat re-use from Data Centres using an integrated solution with Fuel Cells. The candidate has to be used to ensure deadlines as well of reporting and communication of technical / research results.

Requirements

We are looking for excellent and highly motivated candidates with a recent PhD degree in Mechanical Engineering and/or Building Physics Science with experience in HVAC, thermal renewable systems and generally speaking energy systems in buildings and/or cities. Alternatively, a MSc degree with more than two years of experience in the industry and/or research centres are invited to apply. Knowledge in heat and mass transfer phenomena, renewable energy technologies and experience in computational energy systems and simulation tools is essential. Advanced knowledge of TRSNYS is highly valuable, as well of energy use in Data Centres and/or District Heating and Cooling systems. We are looking for a methodical and rigorous person with a scientific spirit and results oriented. Teamwork and communication and management skills will also be a requirement. The candidate may also have experience in EU and international research projects. Mastery of English on all levels will be essential. Knowledge of other languages will be desirable.

We offer

We offer the chance to become part of an exciting and consolidated team, with international recognition, for developing cross-cutting projects in science and technology, oriented towards excellence. We also offer a research environment comprised of highly qualified and motivated professionals. Salaries will be paid in accordance with the IREC's salary policy, depending on the candidate's qualification and professional experience. The candidate will work in the EU project: **WEDISTRICT (Smart and local reneWable Energy DISTRICT heating and cooling solutions for sustainable living)** (<https://cordis.europa.eu/project/rcn/224589/factsheet/en>)

Workplace. Barcelona (IREC facilities)

Application

Applicants should send a detailed CV and a letter of motivation to irecjobs@irec.cat.

The application deadline is 5th December 2019

Please indicate "2020 –WEDISTRICT - ECOS" in the subject