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**Deadline for application:** December 25<sup>th</sup>, 2023

**Ref. 2024/26**

**Project:** Making PEDs

**Area:** Energy Efficiency Systems, Buildings and Communities (ECOS)

**Group:** Thermal Energy and Building Performance

**Group leader/ PI:** Jaume Salom Tormo

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## 'Urban Energy Modelling – Software Developer'

### Description:

The Thermal Energy and Building Performance Group announces a position of High-skilled Recognised Researcher/ Project Engineer (R2-Pre-Consolidated) in the field of Urban & Energy Modelling with significant knowledge and experience in Python developments, Data engineering, Procedural Modeling. The work will be embedded in the Thermal Energy and Building Performance Group which main research subject is the integrated and systemic approach towards positive energy buildings and communities. The group's vision is to investigate in solutions and strategies that accelerates the reduction of greenhouse gas emissions in the building sector through human-centred design, energy efficiency measures, integration and management of energy systems, particularly distributed renewable sources in the built environment as part of urban communities.

The candidate will participate as Python programmer/developer with specific capabilities on data analytics & algorithm development in the subject matter of energy & buildings engineering to contribute on technical work of research projects accounting for different levels of energy models for the built Environment and integration in computational tools. Activities where he/she will be involved are programming of codes applied to dynamic simulation of buildings integrated in smart infrastructures. Focus will be in residential building stock, Local Energy Communities and UBEM (Urban Building Energy Models). The candidate will work in EU international projects within the subject of Retrofitting of Buildings, Positive Energy Districts and Local Energy Communities. Self-sufficiency on algorithm developments with demonstrated knowledge on programming methods ~~and to other group's members~~ will be a core task. Properly elaboration of reporting report, independent management of work packages and tasks on R&I projects and collaboration in articles for scientific publication will be also carried out. He/she will smoothly start working in several EU projects such as Making PEDs (Driving Urban Transitions (DUT) Partnership R&I programme, [DUT call 2022](#)), ARV (<https://greendeal-arv.eu/>), as well in other national and internal projects.

### Qualifications and experience required:

#### Essential:

- Degree in Mechanical / Energy Engineering / Physics / Computer Science.
- Master Sciences Degree in Mechanical / Energy / Industrial Engineering / Smart Cities / Computer Science.
- At least 5 years of experience in professional/research projects in Energy Efficiency in Buildings.
- Advanced knowledge in programming languages: Python, R.

"El contrato es parte de la actuación PCI2023-145991-2, financiado por el Ministerio de Ciencia e Innovación, la Agencia y, en su caso, la Unión Europea (Proyecto PCI2023-145991-2 financiado por MCIN /AEI /10.13039/501100011033 / UE)



- Advanced knowledge in PostGresSQL + PostGis.
- Experience in data science tools: Python (NumPy, SciPy), R, Scikit-learn.
- Knowledge of CityGML information system and 3D City Database for CityGML.
- Fluent English is essential.

#### Preferred:

- PhD degree in Mechanical Engineering, Building Physics Science and/or Computer Science
- Knowledge in GIS-tools (e.g, QGIS, ARCGIS).
- Knowledge of Rhinoceros, Grasshopper 3D.
- Knowledge in Java-script.
- Knowledge of Indoor Environmental Quality assessment methods.
- Knowledge in time series data analysis methods and tools.
- Knowledge of HVAC systems, especially Heat Pumps.
- Knowledge in TRNSYS.
- Initiative in Research and Innovation.

#### Personal skills:

- Motivated professional
- Passion for energy efficiency and sustainability in the built environment.
- Self-sufficiency and capacity to integrate in consolidated team.
- Collaborative working-approach.
- Experience as a collaborator within different skills and disciplines applied to the projects.
- Drive for excellence and result-focus, listening and analytical skills.

#### **Required documents:**

Applicants must submit the following documents by email to [irecjobs@irec.cat](mailto:irecjobs@irec.cat); [jsalom@irec.cat](mailto:jsalom@irec.cat); [iluque@irec.cat](mailto:iluque@irec.cat), indicate in the subject **Ref.2024/32**

#### **Reference:**

- Curriculum Vitae, specifying the completed degree and any relevant professional experience.
- Motivation letter.

#### **Offer of job position:**

We offer a Recognised Researcher/ Project Engineer (R2.1 pre-Consolidated) position in the frame of the DUT programme funded project entitled Making PEDs.

Salaries will be paid in accordance with the IREC's salary policy, depending on the candidate's qualification and professional experience.

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