Publish date September 22nd 2022
Ref. 76/2022Code:

Project: ALMMA
Area: Energy Efficiency in Systems, Buildings and Communities Area
Group: Thermal Energy and Building Performance Group
Group leader: Dr. Jaume Salom Tormo

HVAC systems communications and programming specialist (R1/R2)

The "Thermal Energy and Building Performance" group at IREC is offering technical position in the field of integration and intelligent management of HVAC systems with heat pumps.

Research subject:

Heating and cooling of buildings represents an important part of global energy consumption. Among other heating, ventilation, and air conditioning (HVAC) devices, heat pump systems can significantly reduce the energy requirements and their impact, in comparison to classic solutions such as heating with fossil fuels.

The main research subject is the enhancement of the efficiency of HVAC systems based on Heat pumps by improving their operation and maintenance, through the programming of advanced algorithms. The final goal is the reduction of the primary energy consumed for heating and cooling in buildings, therefore, decreasing the environmental impact of this systems and their operational costs.

The candidate will join an interdisciplinary research team, with extensive experience and developing projects in this field of knowledge both nationally and internationally.

Specific Task

1) Collaboration in the design and implementation of new HVAC control system in buildings
2) Adaptation/programming of HVAC monitoring and controlling algorithms to different programming languages
3) Designing and performing tests and critically assessing results
4) Hardware selection and prototype building

What we are looking for:

- Essential
    - Master's, bachelor's degree or professional training and relevant experience in fields related to electronic, electrical, telecommunications or computer engineering
    - Knowledge and experience with communication protocols (BACnet, Modbus, KNX, ZigBee, etc.)
    - Good programming skills and experience with C/C++ or C#
    - Good communications skills
    - Fluent English and Spanish are essential
    - Problem-solving and critical thinking
    - Teamwork
- Preferred
    - Knowledge of HVAC systems
    - Experience in hardware selection and programming
    - Knowledge of control strategies based on MPC (Model Predictive Control) and Fault Detection Diagnosis (FDD)
    - Experience with embedded system programming in single-board computer (e.g., Raspberry Pi)

Category

R1 o R2 depending on experience

Contract duration

18 months

Location

Tarragona / Barcelona

Start

From Novembre 2022

Procedure

Applicants should send a detailed Curriculum Vitae and a motivation letter by e-mail directly to irecjobs@irec.cat indicating "**Ref.78/2022** PROJECT ALMMA - HVAC COMMUNICATION AND PROGRAMMING SPECIALIST"