 

**POSTDOCTORAL RESEARCHER**

***Modelling for Multi-Facility Energy Management***

**CIVIL ENGINEERING**

**COLLEGE OF ENGINEERING AND INFORMATICS**

**NUI Galway**

**Ref. No. NUIG 196-19**

Applications are invited from suitably qualified candidates for a **full-time, fixed term** position as a Postdoctoral Researcher with **IRUSE** at the National University of Ireland, Galway.

This position is funded by EU HORIZON 2020 and is available, for one year, from 1 November 2019 to contract end date of 1 November 2020.

GEOFIT is an integrated industrially driven action aimed at deployment of cost effective enhanced geothermal systems (EGS) on energy efficient building retrofitting. This entails the development technical development of innovative EGS and its components, namely, non-standard heat exchanger configurations, a novel hybrid heat pump and electrically driven compression heat pump systems and suite of heating and cooling components to be integrated with the novel GSHP concepts, all specially designed to apply in energy efficient retrofitting projects. To make viable the novel EGS in energy efficient building retrofitting, a suite of tools and technologies is developed, including: low invasive risk assessment technologies, site-inspection and worksite building monitoring techniques (SHM), control systems for cost-effective and optimized EGS in operation phase and novel BIM-enabled dedicated tools for management of geothermal based retrofitting works (GEOBIM platform). Furthermore, the project is committed with the application of novel drilling techniques as the improved low invasive vertical drilling and trenchless technologies.

IRUSE research group (www.iruse.ie) is currently comprised of 5 principal investigators, 6 postdoctoral researchers, 12 PhD candidates, 1 Masters Student and continues to grow. This multidisciplinary research team ensures diverse, equal and inclusive working environment. IRUSE is located in the Alice Perry Engineering Building in the College of Engineering and Informatics, NUI Galway, which is the largest engineering school in Ireland.

**Duties:**

The successful candidate will:

* Provide a role in the development of large-scale research proposals for accessing national and international funding
* Develop essential project documentation and reporting
* Review of state of the art (publications in high impact journals, conferences and patents)
* Development, integration, calibration and validation of building environmental, energy performance and heating/cooling system detailed and reduced order models in Modelica or similar
* Development, integration and validation of algorithms for BMS data treatment
* Development of Industrial Energy Management Strategies utilising Modelica models
* Act as Energy facility manager
* Carry out task as defined in the H2020 projects
* Supervise/Assist PhD candidates in the field of energy modelling and simulation of buildings
* Provide organizational support in terms of project management, administration and finance
* Provide research and some teaching assistance, for the purpose of personal career development, as required.

**Qualifications/Skills required:**

**Essential Requirements:**

* A doctoral degree in mechanical, energy systems engineering or related area
* Demonstrated 2 to 3 years industrial or academic experience related to energy management and energy modelling
* Demonstrated building simulation modelling experience
* Demonstrated independence, proactivity, exceptional communication skills, commitment to deliver results, adaptability and the ability to work in a team environment
* Publication record in relevant high impact journals.

**Desirable Requirements:**

* 2 to 3 years postdoctoral industrial or academic experience related to thermodynamic-Heat Transfer modelling or building HVAC energy simulation modelling
* Familiarity with demand response and flexibility management
* Experience in Building Energy Simulation software such as **DYMOLA or** similar
* Experience in facilities management or relevant certification
* Familiarity with building management systems
* Familiarity with **ASHRAE Guideline 14 and/or IPMVP**
* Knowledge of other programming languages, Python, and familiarity with API/Libraries development.

**Salary**: €37,874 to €49,050 per annum

Informal enquiries concerning the post may be made to Dr Federico Seri by email [federico.seri@nuigalway.ie](mailto:federico.seri@nuigalway.ie)

**Continuing Professional Development/Training**:

Researchers at NUI Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans.

Further information on research and working at NUI Galway is available on [Research at NUI Galway](http://www.nuigalway.ie/our-research/)

Further information about IRUSE is available at [www.iruse.ie](http://www.iruse.ie)

For information on moving to Ireland please see [www.euraxess.ie](http://www.euraxess.ie)

**To Apply:**

Applications to include a covering letter, CV, and the contact details of three referees should be sent, via e-mail (in word or PDF only) to [iruse@nuigalway.ie](mailto:iruse@nuigalway.ie)

Please put reference number **NUIG-196-19** in subject line of e-mail application.

**Closing date for receipt of applications is 5.00 pm Friday, December 13th 2019**

We reserve the right to re-advertise or extend the closing date for this post.

National University of Ireland, Galway is an equal opportunities employer.

All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment

