

Jobbnorge-ID: 114314

Søknadsfrist: Closed

Nettside:

Omfang:

Varighet:

PhD Position- Modelling and Simulation of Energy Related Occupant Behavior in Residential Buildings (IVT-86/15)

A PhD scholarship is available within the Energy and Indoor Environment research group at the Department of Energy and Process Engineering (EPT) on the topic of "Modelling and Simulation of Energy Related Occupant Behavior in Residential Buildings". The position is for 4 years with duty work for the Department. The Energy and Indoor Environment group has a well-established expertise as regards energy supply systems and services in buildings. For instance, the group is strongly involved in the Norwegian FME research centre on Zero Emission Buildings (ZEB) (<http://www.zeb.no>) as well as in various IEA Tasks or Annexes.

Energy related occupant behavior in buildings is a key issue for building design optimization, energy diagnosis, performance evaluation, and building energy performance simulation due to its significant impact on real energy use and indoor environmental quality in buildings. However, the influence of occupant behavior is under-recognized or over-simplified in the design, construction, operation, and retrofit of buildings. Occupant behavior is complex, stochastic and multi-disciplinary. Having deep understanding of occupant behavior and being able to model and quantify its impact on use of building technologies and energy performance of buildings is crucial to design and operation of low energy buildings.

The PhD research will pursue the following objectives: - To model residential occupants behavior following the path from presence, movement, activities, actions and sensation of comfort with thorough analysis using the new standard definitions and classifications. - To collect and analyze occupant behavior data in field and to create a high quality data set for validation of the model. - To apply the developed and verified model to practical engineering, including integration with relevant simulation tools for prediction of energy performance of buildings.

The objective for this PhD research project is also to contribute to the international work on providing a standard definition and simulation methodology for different occupant behavior particularly in residential buildings, carried through the IEA-EBC Programme project Definition and Simulation of Occupant Behavior in Buildings (<http://www.annex66.org/>). The project is moreover a part of an EU-CHINA Research and Innovation Partnership (Ref: EuropeAid/135-587/DD/ACT/Multi) action named Instigation of Research and Innovation Partnership on Renewable Energy, Energy Efficiency and Sustainable Energy Solutions for Cities. Hence, the candidate shall have a mobility research period at the Tsinghua University, Beijing, China.

We seek a highly motivated candidate with a Master's degree (or equivalent) within Physics, Civil, Mechanical or Energy Engineering, Architecture, Applied Mathematics or a relevant subject. The candidate should present a strong interest for multi-disciplinary analysis of building systems (i.e. technical and user perspectives), as well as for the modelling and simulation of complex multi-physical systems. A prior and concrete experience with the aforementioned disciplines will be considered as an advantage. Due to the specific conditions of the abovementioned EU-CHINA Research and Innovation Partnership grant, the candidate must be national from one of the EU Member States or EEA countries.

For further information, please contact: Professor Vojislav Novakovic, tel. +47 73592484, email: vojislav.novakovic@ntnu.no.

Conditions of appointment: PhD Candidates are remunerated in code 1017, and are normally remunerated at wage level 50, gross NOK 429 400 before tax. There will be a 2 % deduction to the Norwegian Public Service Pension Fund from gross wage.

Engagement as a PhD Candidate is done in accordance with "Regulation concerning terms and conditions of employment for the posts of post-doctoral research fellow, research fellow, research assistant and resident", given by the Ministry of Education and Research of 19.07.2010. The goal of the positions is to obtain a PhD degree. Applicants will engage in an organized PhD training program, and appointment requires approval of the applicants plan for a PhD study within three months from the date of commencement.

See <http://www.ntnu.edu/ivt/phd> for more information.

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants. The positions adhere to the Norwegian Government's policy of balanced ethnicity, age and gender. Women are encouraged to apply.

According to the new Freedom of Information Act, information concerning the applicant may be made public even if the applicant has requested not to be included in the list of applicants.

The application must contain information of educational background and work experience. Certified copies of transcripts and reference letters should be enclosed.

Applications with CV, grade transcripts and other enclosures should be submitted. IVT- 86/15

Application deadline: 15 June, 2015

Tilleggsinformasjon

Arbeidssted: