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Education

The University of Nottingham - PhD in Sustainable Energy and Building Technology (2014)
Thesis Title: Theoretical and Experimental Investigation of an Innovative Hybrid Solar-Biomass Tri-Generation System

American University of Beirut - Master's Degree in Mechanical Engineering (2011)
Thesis Title: Experimental and Theoretical Study of an Integrated Thermoelectric-Photovoltaic System for Air Dehumidification and Fresh Water Production

Lebanese University - Bachelor's Degree in Mechanical Engineering (2009)
Thesis Title: Design and development of a collective solar thermal system for domestic hot water and electricity production under the Lebanese climatic conditions

Research Interests

Energy efficient systems, Sustainable energy technologies, Heat transfer, Thermodynamics, Building management systems, Building energy modelling and simulation, Thermal comfort and indoor air quality, Cogeneration and Tri-generation systems, Energy systems numerical modelling and simulation, Solar thermal and photovoltaic systems, Thermoelectric cooling, Refrigeration and air conditioning, Thermal and thermo-chemical energy storage, Desiccant cooling and dehumidification, Systems control and optimization, Fault detection and diagnostics.

Ongoing Research

As an Associate Professor of Energy Engineering at the Center for Energy Informatics at the University of Southern Denmark, I am currently taking part in the two research projects below:

- Automated Auditing and Continuous Commissioning of Next Generation Building Management Systems, funded by EUDP, (DKK 5,051,602), October 2019-September 2022. I am serving as the Principal Investigator of the project. In addition to project management, I am leading WP2 on building automation systems auditing and WP5 on project results dissemination.
- Next Generation Ventilation - NeGeV, funded by EUDP, (DKK 15,012,344), April 2018-April 2021. I am serving as the Deputy Principal Investigator of the project. In addition to being the Deputy Principal Investigator, I am leading WP2 on energy modelling and WP6 aiming to develop and test the PCM-based ventilation system prototype.

Recent completed projects include:

- ICT-driven Coordination for Reaching 2020 Energy Efficiency Goals in Public and Commercial Buildings (COORDICY), funded by Innovation Fund Denmark, (DKK 42.5 Million), March 2015-February 2019. I have led WP7, regarding buildings energy renovation in collaboration with large Danish Municipalities, in addition to WP2 regarding Building Modelling and Simulation, and WP4 on buildings fault detection and diagnostics.
- Demand-Response Capacity Management in Commercial Buildings, funded by Energiteknologisk udvikling og demonstration (EUDP), (DKK 8,762,889), February 2015-April 2018. I have led WP3 regarding Modelling of Building Energy Consumption for Load Prediction.
- Vejen til Termonettet, funded by Innovationsnetværket Smart Energy, (DKK 934,392), June 2017-December 2018. I have served as a Deputy Principal Investigator and have led the work on modelling, simulation, verification and analysis of the proposed thermal system.

Awards and Achievements

- A certified building management systems auditor by the European Building Automation and Controls Association (eu.bac) Jan 2019.
- Appointed as a member of the International Scientific Committee for the 16th International Conference on Sustainable Energy Technologies (SET 2017), Bologna, Italy, July 2017, and the 17th International Conference on Sustainable Energy Technologies (SET 2018), Wuhan, China, August 2018.
- Appointed as a member of the International Scientific Committee for the 14th International Conference on Sustainable Energy Technologies (SET 2015), Nottingham, UK, August 2015, and the 15th International Conference on Sustainable Energy Technologies (SET 2016), Singapore, July 2016.

- Appointed as a member of the Editorial Board of the International Journal of Low Carbon Technologies, 2015.
- The Best Paper Award for the paper entitled: "Numerical and Experimental Analysis of a Dew-Point Cooling System with a Psychrometric Energy Core" presented at the 12th International Conference on Sustainable Energy Technologies, Hong Kong, August 2013.
- The Dean of Engineering Research Scholarship for International Excellence from the Engineering faculty at the University of Nottingham for PhD studies (2011-2014), including full tuition fees and stipend. This highly competitive, prestigious scholarship is to recognise and reward applications from outstanding international students registering on engineering research degree programmes at The University of Nottingham.
- Nominated and appointed as a GEO fellow and reviewer for the Global Environmental Outlook 5 by the UNEP-2011.
- The Sakkal Renewable Energy Graduate Thesis Award 2010-2011 at the American University of Beirut. The award grant is offered as a cash prize to a mechanical engineering graduate student at AUB pursuing or completed a master thesis in the field of renewable energy.
- Engineering Full Scholarship for Master's studies at the American University of Beirut for outstanding students at the Faculty of Engineering and Architecture (2009-2011).
- The Dean of Engineering Award for the best thesis in the field of renewable energy solutions at the Lebanese University 2009.
- Dean's honour list at the Lebanese University for 9 semesters during Engineering Bachelor's Degree studies (2004-2009).

Teaching Portfolio

Regarding my teaching duties, I am responsible for three courses within the Energy Technology Program at the University of Southern Denmark:

- Thermodynamics
- Building Energy Modeling and Simulation
- Mathematical Modeling and Numerical Methods

In addition, I am supervising multiple PhD, Master and Bachelor students within the Energy Technology Program at the University of Southern Denmark.

My principle in every engineering activity conducted is summarized in three words: Innovation, Originality and Feasibility. Throughout my academic studies and research work, I have built a solid background in the mechanical engineering field with a wide experience in energy efficient systems and renewable energy applications. My research work has led to more than 80 academic publications published in leading journals and conference proceedings in addition to being an invited speaker in various national and international seminars and workshops. Through being involved in national and international academic conferences, workshops, seminars and meetings, I have built strong connections with both academic researchers and industrial professionals.

1- Teaching Philosophy

During my time at the University of Southern Denmark, University of Nottingham and American University of Beirut, I have carried out supervision, teaching and demonstration duties for different courses in the mechanical engineering and energy technology fields. This allows me to communicate with students of various academic backgrounds, both undergraduates and postgraduates, on national and international levels, creating a positive learning environment and encouraging students to share and express ideas. In addition, I have been involved in a variety of academic activities including semester planning, course setup and preparation, organizing course schedules and timetables, preparing coursework materials, delivering lectures, conducting lab work, marking reports and invigilating exams.

My teaching philosophy has five main pillars:

- Provide information in a clear and simple way
- Relate the academic material to real case scenarios and life applications
- Let the students think, discover and share rather than being listeners
- Give the students a space of freedom to generate innovative ideas
- Allow the students to apply the theoretical information in the laboratory or experimental field

William Arthur Ward once said: "The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires." Based on this quote, my main concentration in teaching any material is to transform the students from being just receivers of information to generators of ideas. This could be done through asking a list of questions related to the module which allows drawing the overall picture of the course in an interactive and lively manner. I believe that any person, especially young people, learn more from what they do or say than what others do or tell them. In addition, I will strive to provide the students in every course with a space of freedom to allow them to think and come up with innovative and original ideas. As Albert Einstein once said, "I never teach my pupils, I only attempt to provide the conditions in which they can learn.", thus the environment in which the student is learning is of equal importance as the information being presented. One additional point I would like to adopt in my classes is relating the course material to real case scenarios and well-known examples. As the engineering materials are practical and directly related to real life applications, the students will be looking forward to hearing examples from the daily life making it easier for them to grab the information and understand the physical concept in addition to the theoretical background. No matter how large or small the class is, I will look forward to engaging the majority of the students in the class discussions in an informative and challenging atmosphere.

2- Teaching Activities

University of Southern Denmark (2014-present)

- ET-MMT-U1 - **Thermodynamics** (for Energy Engineering Undergraduate Students) (Spring 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2019):

- Introducing 30-40 students to the main concepts, laws and applications of thermodynamics in the energy engineering field.
- Explaining thermodynamic systems, states, processes and cycles.
- Illustrating different phases and phase diagrams.
- Explaining the thermodynamic concepts and properties.
- Explaining the laws of conservation of mass and energy.
- Introduce the entropy, exergy and energy quality concepts.
- Introducing thermodynamic cycles, steam power plants, gas turbines, engines, refrigeration and other systems for energy production.
- Providing knowledge about conversions between different forms of energy.
- ETK-BES-U1 - **Building Energy Modelling and Simulation** (for Energy Engineering Undergraduate and Postgraduate Students) (Fall 2015, Fall 2016, Fall 2017, Fall 2018, Fall 2019):
- Introducing 30-45 students to the concepts of physical modelling of buildings and their energy consumption.
- Explaining basic mathematical aspects of dynamic systems.
- Providing basic introduction to energy modelling tools, Modelica, Energyplus, open studio and google sketchup.
- Providing a demonstration of modelling examples from a range of energy application areas.
- Introducing the students to the basics of building energy systems.
- Providing the students with the theories and the tools for prediction of building energy consumption dynamics.
- Allowing the students to carry out a project of a complete energy modelling and analysis of a case study building.
- ETK-IES-U1 - **Innovative Energy Solutions** (for Energy Engineering Master of Science Students) (Fall 2015, Fall 2016):
- Introducing 30-45 students to the energy challenges of the 21st century.
- Explaining the elements of the innovation process.
- Explaining the technology gap.
- Describing the elements of a business model.
- Explaining prototyping.
- Explaining major energy conversion, production and storage techniques.
- ETK-MOP - **Modeling and Optimization of Energy Processes** (for Energy Engineering Master of Science Students) (Fall 2018, Fall 2019):
- Introducing 30-40 students to the Modelling methodology
- Helping students understand the importance of modeling and optimization in modern society
- Describing the physical processes involved in energy application problems
- Explaining mathematical modelling approach
- Highlighting classification of models
- Providing insights on applications of mathematical modelling in Thermodynamics
- Providing insights on applications of mathematical modelling in Heat and Mass Transfer
- Dealing with energy generation cycles modelling
- Modeling and analysis of energy processes
- Providing an introduction to Numerical Methods
- The University of Nottingham (2011-2014)**
- MM2MID - **Materials in Design** (for Mechanical Engineering Undergraduate Students):
- Introducing 320 students to methodologies for materials and process selection for design improvement, with reference to the constraints imposed by manufacturability and usage of materials in real engineering situations.
- Carrying out demonstration duties for the CES EduPack software to help students interact with extensive materials properties and processing information resources allowing them to select and compare materials and processes for different engineering applications.
- Marking coursework and lab assignments.
- H14ERP- **Advanced Engineering Research Preparation** (for Postgraduate Students):
- Providing assistance and guidance for 60 Msc Engineering students in various research areas including library searches, literature surveys, references citation, Matlab programming, Microsoft Office, writing reports, and verbal and poster presentations.
- Assisting student in developing Matlab simulation programs to solve different engineering problems including photovoltaic systems operation, solar thermal systems.
- H14POD - **Advanced Engineering Research Project Organisation and Design** (for Postgraduate Students):
- Assisting students to develop methodologies and skills required for the main MSc in Engineering project.
- Carrying out demonstration duties to aid students in Matlab coding and programming, MSExcel Macros, project planning using Microsoft Project, measurement and error analysis and development of laboratory skills including safety & risk assessment.
- Assisting students in formulating and evaluating methods of experimental measurement and error analysis.
- Assisting students in synthesizing experimental data using a variety of software tools.
- American University of Beirut (2009-2011)**
- MECH 200 - **Mechanical Engineering Tools**
- Aiding students to analyse and understand the engineering design objectives.
- Carrying out demonstration for the use of Matlab to solve engineering formulae.
- Helping students in developing full schedules using Microsoft Project.
- Marking reports and coursework.
- MECH 310 - **Thermodynamics I**

- Introducing students to the first and second laws of thermodynamics
- Marking reports and course work regarding different thermodynamic processes and cycles including adiabatic processes, isothermal process, isobaric processes, isochoric processes.
- MECH 320 - **Mechanics of Materials**
- Working as a graduate assistant for this course carrying out different tasks as course organization, paper work preparation, coursework marking, laboratory preparation, reports correction and exams invigilation.
- MECH 412 - **Heat Transfer**
- Carrying out demonstration duties to introduce the three modes of heat transfer in addition to heat transfer in fully-developed laminar and turbulent internal flow systems
- Marking homework and final semester reports.
- MECH 421 - **Manufacturing Processes I**
- Working as a graduate assistant for this course carrying out different tasks as laboratory preparation, homework correction, reports marking and exams invigilation.
- MECH 600 - **Applied Reservoir Engineering I**
- Working as a graduate assistant for the course being responsible for paper preparation, homework marking and exams invigilation.

3- Course and Curriculum Design

- Establish a new course in the energy technology program: Building Energy Modelling and Simulation, for Bachelor and Master Energy Technology students, allowing linking the research work carried out in COORDICY international research project, to the education program where students will finish the course with the full capability of completing energy modelling and simulation of buildings. Case studies from COORDICY project are used as a base for the course project. (2015-2017)
- Restructure the Thermodynamics course within the Energy Technology Program and develop an updated and coherent module structure providing a balance between the basic thermodynamic physical concepts and theories and the real life practical applications of thermodynamics in the field of energy generation, supply and storage, in addition to introducing up-to-date research highlights and concepts including multi-generation, renewable energy systems and alternative storage techniques. (2014-2017)
- Restructure the Modelling and Optimization of Energy Processes course within the Energy Technology Program and develop an updated and coherent module structure providing students with clear identification of the basics of mathematical modelling as well as applications from real life. In addition, students are empowered with solving capabilities and tools including numerical methods and EES and Matlab tools. (2018-2019)
- Share in the design of the Innovative Energy Solutions course content for Energy Technology and Software Engineering Educations at the University of Southern Denmark. (2015-2016)
- Design and development of the semester plan for the 2nd semester of the Bachelor Energy Technology Program at the Engineering Faculty at the University of Southern Denmark. (2015-2016)
- Design of the Materials in Design course at the University of Nottingham. (2013-2014)
- Share in the design of the Applied Energy program curriculum at the American University of Beirut. (2009-2011)

4- Lecturer Training Programme

I have attended and completed the Lecturer Training Programme at the University of Southern Denmark, 2015/2016, which is an individually planned in-service teacher training programme for university teachers in Denmark over a span of a year and a half. The programme aims at strengthening the participants' educational and pedagogical skills in addition to their teaching competences. The programme is based on SDU's underlying principle for education: Active teaching and learning. The programme is compulsory for newly appointed assistant professors at the University of Southern Denmark.

5- 'Teaching in English' Certificate

In order to guarantee an acceptable level of teaching in English on University of Southern Denmark's degree programs, the executive board has initiated the certification program "Teaching in English at SDU". The guarantee of a good level of English in teaching will promote the university and make the degree programs more attractive for future students. The certification program is one of SDU's quality enhancement activities in order to meet accreditation standards. I have registered for the program in 2016, and I had my assessment during my Thermodynamics course lectures. The assessment is composed of oral presentations (monologue) and interaction sessions with students (dialogue), carried out by two examiners, and a video was recorded. In the assessment, my spoken English was assessed and evaluated. Based on the assessment, I have successfully passed the Teaching in English program and I have been certified for Teaching in English Language on an International Level.

Research outputs

A decision support model for waste heat recovery systems design in Data Center and High-Performance Computing clusters utilizing liquid cooling and Phase Change Materials

Ljungdahl, V., Jradi, M. & Veje, C., 25. Jan 2022, In: Applied Thermal Engineering. 201, Part A, 117671.

Reviewing Challenges and Limitations of Energy Modelling Software in the Assessment of PEDs Using Case Studies

Belda, A., Giancola, E., Williams, K., Dabirian, S., Jradi, M., Volpe, R., Abolhassani, S. S., Fichera, A. & Eicker, U., 2022, *Sustainability in Energy and Buildings*, 2021. Littlewood, J. R., Howlett, R. J. & Jain, L. C. (eds.). Springer, p. 465-477 13 p. (Smart Innovation, Systems and Technologies, Vol. 263).

Phase change material based ventilation module - Numerical study and experimental validation of serial design

Ljungdahl, V. B., Taha, K., Dallaire, J., Kieseritzky, E., Pawelz, F., Jradi, M. & Veje, C., 1. Nov 2021, In: *Energy*. 234, 11 p., 121209.

A PCM-based cooling solution for ventilation applications

Ljungdahl, V. B., Jradi, M. & Veje, C., 24. Sep 2021, In: *Energy Informatics*. 4, Suppl. 1, P7.

Optimization of district heating production with thermal storage using mixed-integer nonlinear programming with a new initialization approach

Bjørnskov, J., Mortensen, L. K., Filonenko, K., Shaker, H. R., Jradi, M. & Veje, C., 24. Sep 2021, In: *Energy Informatics*. 4, Suppl. 2, 34.

Automated demand-side flexibility identification and utilization in energy optimization

Bjørnskov, J., Jradi, M. & Veje, C., Sep 2021, In: *Energy Informatics*. 4, Suppl. 1, P8.

AUSTRET: An Automated Step Response Testing Tool for Building Automation and Control Systems

Santos, A. Q., Liu, N. & Jradi, M., Jul 2021, In: *Energies*. 14, 13, 20 p., 3972.

Auditing and design evaluation of building automation and control systems based on eu. bac system audit–Danish case study

Engvang, J. A. & Jradi, M., Jan 2021, In: *Energy and Built Environment*. 2, 1, p. 34-44

BuildCOM: automated auditing and continuous commissioning of next generation building management systems

Jradi, M., Boel, N., Madsen, B. E., Jacobsen, J., Hooge, J. S. & Kildelund, L., 2021, In: *Energy Informatics*. 4, 1, 18 p., 2.

Formulation and implementation of a model predictive control (MPC) strategy for a PCM-driven building ventilation cooling system

Yang, T., Filonenko, K., Dallaire, J., Ljungdahl, V. B., Jradi, M., Kieseritzky, E., Pawelz, F. & Veje, C., 2021, *BS 2021 Proceedings*.

Is your building automation and control system properly designed and installed?

Jradi, M., 2021, *BS 2021 Proceedings*.

PCM-enhanced building envelope for improved thermal comfort and energy efficiency in danish buildings

Hagenau, M. & Jradi, M., 2021, *BS 2021 Proceedings*.

Performance Evaluation of an Active Phase Change Material Cooling Application in Northern European Climate

Ljungdahl, V. B., Jradi, M., Veje, C. & Dallaire, J., 2021, *ECOS 2021 Proceedings*.

Towards energy efficient planning of Danish cities and neighbourhoods

Jepsen, B., Haut, T. & Jradi, M., 2021, *ECOS 2021 Proceedings*.

Dynamic energy modelling as an alternative approach for reducing performance gaps in retrofitted schools in Denmark

Jradi, M., Nov 2020, In: *Applied Sciences (Switzerland)*. 10, 21, 17 p., 7862.

Fault Detection in Ventilation Units using Dynamic Energy Performance Models

Mattera, C. G., Jradi, M., Skydt, M. R., Engelsgaard, S. S. & Shaker, H. R., Nov 2020, In: *Journal of Building Engineering*. 32, 101635.

IBACSA: An interactive tool for building automation and control systems auditing and smartness evaluation

Engelsgaard, S., Alexandersen, E. K., Dallaire, J. & Jradi, M., 15. Oct 2020, In: *Building and Environment*. 184, 16 p., 107240.

An automated framework for buildings continuous commissioning and performance testing – A university building case study

Jradi, M., Liu, N., Arendt, K. & Mattera, C. G., Sep 2020, In: Journal of Building Engineering . 31, 12 p., 101464.

Dynamic modeling and performance evaluation of building envelope enhanced with phase change material under Danish conditions

Hagenau, M. & Jradi, M., Aug 2020, In: Journal of Energy Storage. 30, 101536.

Monitoring and Evaluation of Building Ventilation System Fans Operation using Performance Curves

Singh, M., Jradi, M. & Shaker, H. R., Jul 2020, In: Energy and Built Environment. 1, 3, p. 307-318

A tool for Danish buildings energy retrofit design and evaluation using dynamic energy simulations

Jradi, M., Engelbrecht Foldager, H. & Camillus Jeppesen, R., 30. Jun 2020, In: E3S Web of Conferences. 172, 8 p., 18008.

The trade-off between deep energy retrofit and improving building intelligence in a university building

Jradi, M., 30. Jun 2020, In: E3S Web of Conferences. 172, 8 p., 18002.

Dynamic Energy Model-Based Automatic Building Performance Testing for Continuous Commissioning

Jradi, M., Liu, N., Johansen, A., Arendt, K., Mattera, C. G., Kjærgaard, M. B., Veje, C. & Jørgensen, B. N., 2020, *Proceedings of building simulation 2019: 16th IBPSA International conference and exhibition*. Corrado, V., Fabrizio, E., Gasparella, A. & Patuzzi, F. (eds.). International Building Performance Simulation Association, p. 822-829 (Proceedings of the International Building Performance Simulation Association).

Experimental and numerical investigation of a PCM module for ventilation systems

Ljungdahl, V., Elabshihy, K., Kieseritzky, E., Pawelz, F., Jradi, M., Dallaire, J. & Veje, C., 2020, *33rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2020)*. Yokoyama, R. & Amano, Y. (eds.). ECOS, Vol. 1. p. 912-922

Modeling and Performance Simulation of a Retail Store as a Smart Grid Ready Building

Jradi, M., Foldager, H. E., Jeppesen, R. C., Hviid, J., Rasmussen, M. A. & Kjærgaard, M. B., 2020, *Proceedings of Building Simulation 2019: 16th IBPSA International conference and exhibition*. Corrado, V., Fabrizio, E., Gasparella, A. & Patuzzi, F. (eds.). International Building Performance Simulation Association, p. 4070-4078 (Proceedings of the International Building Performance Simulation Association).

Modeling and Simulation of a Heating Mini-Grid for a Block of Buildings

Filonenko, K., Arendt, K., Jradi, M., Andersen, S. & Veje, C., 2020, *Proceedings of Building Simulation 2019: 16th Conference of*. Corrado, V., Fabrizio, E., Gasparella, A. & Patuzzi, F. (eds.). International Building Performance Simulation Association, Vol. 16. p. 1971-1978 (Proceedings of the International Building Performance Simulation Association, Vol. 16).

Multi-Objective Model Predictive Control Framework for Buildings

Arendt, K., Clausen, A., Mattera, C. G., Jradi, M., Johansen, A., Veje, C., Kjærgaard, M. B. & Jørgensen, B. N., 2020, *Proceedings of building simulation 2019: 16th IBPSA International conference and exhibition*. Corrado, V., Fabrizio, E., Gasparella, A. & Patuzzi, F. (eds.). International Building Performance Simulation Association, p. 2779-2786 (Proceedings of the International Building Performance Simulation Association).

Object-oriented modeling and performance evaluation of a PCM-based ventilation system

Yang, T., Ljungdahl, V. B., Jradi, M., Filonenko, K., Kieseritzky, E., Pawelz, F. & Veje, C., 2020, *33rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2020)*. Yokoyama, R. & Amano, Y. (eds.). ECOS, Vol. 1. p. 1584-1594

Post-evaluation of the energy retrofit process in three public schools in Denmark

Jradi, M., 2020, *33rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2020)*. Yokoyama, R. & Amano, Y. (eds.). ECOS, p. 2036-2047

DanBERA: A tool for Danish buildings energy renovation design and assessment

Jradi, M., Andersen, S. & Hagenau, M., 23. Oct 2019, In: IOP Conference Series: Materials Science and Engineering. 609, 7, 6 p., 072057.

Combining Performance Testing and Metadata Models to Support Fault Detection and Diagnostics in Smart Buildings

Markoska, E., Johansen, A., Kjærgaard, M. B., Lazarova-Molnar, S., Jradi, M. & Jørgensen, B. N., Sep 2019, In: Applied System Innovation. 2, 3, 19 p., 28.

DanRETRO: A Decision-Making Tool for Energy Retrofit Design and Assessment of Danish Buildings

Foldager, H. E., Jeppesen, R. C. & Jradi, M., 11. Jul 2019, In: Sustainability. 11, 14, 19 p., 3794.

Dynamic modeling, simulation and energy performance improvement of NASA Ames Sustainability Base

Jradi, M., Jørgensen, B. N. & Martin, R. A., 26. Jun 2019, *ECOS 2019 - Proceedings of the 32nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems*. Stanek, W., Gladysz, P., Werle, S. & Adamczyk, W. (eds.). Institute of Thermal Technology, p. 807-819

A Stair-Step Probabilistic Approach for Automatic Anomaly Detection in Building Ventilation System Operation

Alexandersen, E. K., Skydt, M. R., Engelsgaard, S. S., Løvkvist Larsen, M. B., Jradi, M. & Shaker, H. R., 15. Jun 2019, In: Building and Environment. 157, p. 165-171

Performance Analysis of an Innovative ORC-based Micro-scale CCHP System under Lebanese Conditions

Jradi, M. & Riffat, S., 1. Jun 2019, In: International Journal of Thermodynamics. 22, 2, p. 96-103

Fault Isolability Analysis and Optimal Sensor Placement for Fault Diagnosis in Smart Buildings

Trothe, M., Shaker, H. R., Jradi, M. & Arendt, K., 26. Apr 2019, In: Energies. 12, 9, 12 p., 1601.

Consensus-Based Method for Anomaly Detection in VAV Units

Mattera, C. G., Shaker, H. R. & Jradi, M., 1. Feb 2019, In: Energies. 12, 3, 17 p., 468.

Novel Real-Time Model-Based Fault Detection Method for Automatic Identification of Abnormal Energy Performance in Building Ventilation Units

Løvkvist Larsen, M. B., Engelsgaard, S. S., Alexandersen, E. K., Skydt, M. R., Shaker, H. R. & Jradi, M., 15. Jan 2019, In: Energy and Buildings. 183, p. 238-251

NeGeV: next generation energy efficient ventilation system using phase change materials

Veje, C., Jradi, M., Lund, I., Hansen, T., Kamuk, K., Kieseritzky, E. & Nicolaisen, C. G., 2019, In: Energy Informatics. 2, 12 p.

NeGeV: Phase Change Materials for Innovative Cooling Solutions

Ljungdahl, V. B., Jradi, M., Kieseritzky, E., Rasmussen, M. H., Kamuk, K. & Veje, C., 2019, In: REHVA Journal. 56, 6, p. 42-47

A method for fault detection and diagnostics in ventilation units using virtual sensors

Mattera, C. G., Quevedo, J., Escobet, T., Shaker, H. R. & Jradi, M., 14. Nov 2018, In: Sensors. 18, 11, 3931.

The impact of occupancy resolution on the accuracy of building energy performance simulation

Sangogboye, F. C., Arendt, K., Jradi, M., Veje, C., Kjærgaard, M. B. & Jørgensen, B. N., 7. Nov 2018, *Proceedings of the 5th Conference on Systems for Built Environments*. Ramachandran, G. S. & Batra, N. (eds.). Association for Computing Machinery, p. 103-106

ModestPy: An Open-Source Python Tool for Parameter Estimation in Functional Mock-up Units

Arendt, K., Jradi, M., Wetter, M. & Veje, C., Oct 2018, *Proceedings of the 1st American Modelica Conference*. Tiller, M., Tummescheit, H. & Vanfretti, L. (eds.). Modelica Association and Linköping University Electronic Press, p. 121-130 (Linköping Electronic Conference Proceedings, Vol. 154).

Comparative Analysis of White-, Gray- and Black-box Models for Thermal Simulation of Indoor Environment: Teaching Building Case Study

Arendt, K., Jradi, M., Shaker, H. R. & Veje, C., Sep 2018, *Proceedings of the 2018 Building Performance Modeling Conference and SimBuild co-organized by ASHRAE and IBPSA-USA*. ASHRAE, p. 173-180

Deep Energy Retrofit vs Improving Building Intelligence: Danish Case Study

Jradi, M., Veje, C. & Jørgensen, B. N., Sep 2018, *Proceedings of the 2018 Building Performance Modeling Conference and SimBuild co-organized by ASHRAE and IBPSA-USA*. ASHRAE, p. 470-477 65

Technical and Economic Assessment of a Danish Public School Energy Renovation using Dynamic Energy Performance Model

Jradi, M., Veje, C. & Jørgensen, B. N., Sep 2018, *Proceedings of the 2018 Building Performance Modeling Conference and SimBuild co-organized by ASHRAE and IBPSA-USA*. ASHRAE, p. 478-485

Online energy simulator for building fault detection and diagnostics using dynamic energy performance model

Mattera, C. G., Jradi, M. & Shaker, H. R., 17. May 2018, In: *International Journal of Low-Carbon Technologies*. 13, 3, p. 231-239

A Dynamic Energy Performance-Driven Approach for Assessment of Buildings Energy Renovation – Danish Case Studies

Jradi, M., Veje, C. & Jørgensen, B. N., 2018, In: *Energy and Buildings*. 158, p. 62-76

Dynamic Energy Performance-Driven Approach for Renovation Assessment of the Danish Public School Ejerslykkeskolen

Jradi, M., Veje, C. & Jørgensen, B. N., 2018, *Proceedings of 31st International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems*. Teixeira, J. C. (ed.). 13 p. 252

Fault Detection and Diagnostics in Ventilation Units Using Linear Regression Virtual Sensors

Mattera, C. G., Quevedo, J., Escobet, T., Shaker, H. R. & Jradi, M., 2018, *Proceedings of the 2018 International Symposium on Advanced Electrical and Communication Technologies*. Srifi, M. N., Arioua, M. & Mohammed, B. (eds.). IEEE, 6 p. 8618755

ObepME: An online building energy performance monitoring and evaluation tool to reduce energy performance gaps

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