

Mohamed Hamdy

Associate Professor & Senior Consultant

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Prof., PhD., MSc., Eng.,

12 years of experience in research and consulting within Simulation-based Building Performance Optimization (SB-BPO) and life cycle cost analysis (LCCA).



Associate professor at the Department of Civil and Environmental Engineering at NTNU, the Norwegian University of Science and Technology.



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[500+](#)



[h-index: 15](#)



[h-index: 13](#)

ELSEVIER
Scopus



[ORICD ID](#)



[Peer reviews](#)

Mohamed Hamdy

Associate Professor & Senior Consultant

Qualifications - Education degrees & Pedagogical certificates

Educational degrees:

Doctor of Science in Technology (D.Sc.) **2008/2012**

Subject : Combining Simulation and Optimization for Dimensioning Optimal Building Envelopes and HVAC Systems.

University: Aalto University, School of Engineering, Finland.

Grade : 4.3 of 5 (60 ECTS post-master courses)

Master of Science (M.Sc.) **2005/2007**

Subject : Model-based optimal control of VAV air-conditioning system.

University : Helwan University, Cairo, Egypt.

Grade : Very good (equivalent to 4.5 of 5)

Bachelor of Technology (B.Tech.) **1999/2004**

Subject : Mechanical Power Engineering.

University : Helwan University, Cairo, Egypt.

Grade : Very Good with honor degree (The best student of 550).

Graduation: Excellent.

Pedagogical certificates:

The following pedagogical certificates are obtained from Eindhoven University of science and Technology (TU/e), The Netherlands and Cairo University (CU), Egypt.

- Exploitation of Research Results and Knowledge Transfer
- PCDI PostDoc retreat
- Supervising Master students
- Coaching Student
- Competing for research Funds
- Legal and Financial Aspects in University Environment
- Research Ethics
- Choosing qualitative or quantitative research methodologies
- The Credit Hour Systems
- Supervision of PhD Students
- Designing Courses & Projects
- Examination Committee, The Legal Framework (TEACH250-1)
- Competing for a research grant
- Academic Leadership for Assistant Professors
- Scientific Project Management

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Work Experience - Employers

Employer: [Norwegian University of Science and Technology \(NTNU\)](#), Norway.

Position: Associate Professor (from Aug. 2016 to present)

Responsibility: Associate Professor within sustainable and high-performance buildings.

Employer: [METABUILD GmbH](#), Germany.

Position: Senior Consultant (from May. 2016 to present)

Responsibility: Senior consultant for developing a building performance optimization platform.

Employer: **Eindhoven University of Technology (TU/e), the Netherlands.**

Position: Postdoc fellow- Department of Built Environment (from Dec. 2013 to May. 2016)

Responsibility: Conducting research, developing research proposals, supervising master students, coaching PhD students, designing new academic course

Employer: **Aalto University, Finland.**

Position: Postdoctoral researcher, Department of Energy (from Dec. 2012 to Dec. 2014)

Job Hour: Full time (till Dec. 2013 then Part time with the above position)

Responsibility: Conducting research, developing research proposals within Building and HVAC system optimization.

Employer: **Aalto University (Finland).**

Position: PhD Candidate / Researcher (*March 2008 - Dec. 2012*)

Responsibility: Conducting research on building performance optimization.

Employer: **Crown Home Consultant (CHC), electromechanical office, Egypt.**

Position: Senior Engineer (*April 2007 - Feb. 2008*)

Responsibility: Design A/C & Fire Fighting systems.

Employer: **Research Center for Technological Development (R.C.T.D), Cairo, Egypt.**

Position: Design Engineer/ Freelance (*May 2006- April 2007*)

Responsibility: Reverse engineering for product lines and automation systems.

Employer: **Electro-Mechanical Consultant office (E.M.G), Cairo, Egypt.**

Position: Junior Engineer (Aug. 2005-May 2006)

Responsibility: Design A/C & Fire Fighting systems.

Employer: **Flex link Agency for product line and automation, Egypt.**

Position: Designer/ Freelance (Dec. 2004 - Aug. 2005)

Responsibility: Design and installing product lines and automation systems.

Employer: **Helwan University (Egypt)**

Position: Teacher assistant (from Oct. 2004)

Responsibility: Teaching Mechatronics, Pneumatics, hydraulic power, and firefighting to undergraduate student. Trainer at the Egyptian Industrial Ministry Training Program for fresh graduate engineers.

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Teaching - Activities

At Norwegian university of Science and Technology (NTNU, Norway), 2017/2019:

As a course responsible and/or lecturer

- TBA 4166 - Building Performance Simulation, [see](#)
- TEP 4235 - Energy Management in Buildings, [see](#)
- TBA 4171 - Building and Material Engineering, Advanced Course, [see](#)
- TBA 4860 - Experts in Teamwork - The NTNU Campus of the Future: Social, Economic and Environmental Sustainability of a Project, [see](#)

At summer Schools

As a trainer

- SiNoPSE Summer School, August 6-17, 2018 at Norwegian university of Science and Technology (NTNU), Trondheim, Norway, [see](#)
- EuroTech Summer School, June 2-6, 2014 at Technical University of Denmark (DTU), Lyngby. Denmark, [see](#)

At Cairo and UWM universities

As a guest lecture

- Guest lecturer at Cairo University, Egypt
- Guest lecturer at University of Warmia and Mazury in Olsztyn, Poland

At Eindhoven University of science and Technology (TU/e, The Netherlands), 2014/2016.

As a teaching assistant

- 7LY3M0 – Building performance and energy systems simulation (TU/e MSC course), [see](#)
- 7NBB0 – Basic Design Course, [see](#).
- 7S9X0 – Environmental performance of buildings (TU/e BSc course), [see](#).
- 7S815 – Sustainable energy systems for the built environment, [see](#).

At Helwan University (HU, Egypt), 2005/2007.

As a teaching assistant

- Automatic control, Advanced HVAC systems,
- Pneumatic systems, PLC, Programmable Logic control
- Firefighting, Hydraulic machine.

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Research - Activities

- **A senior researcher** at [ZEN](#) (a research centre within Zero Emission Neighbourhoods in Smart Cities),
- **A regular member** at [IEA-EBC](#) (The International Energy Agency – Energy in Building and Communities program),
- **A steering committee and advisory board member** for the research projects: ‘‘OCCuPANt’’ funded by the University of Liège, Council for Research and Development,
- **A collaborator** of the University of Liège (A honorary title),
- **A collaborator** in the project ‘‘The optimal transitions from interactively-isolated systems to the mutually-integrated unity between zero-energy building(s) and zero-energy vehicle(s)’’, funded by the Hong Kong Polytechnic University, University Grants Committee (UGC), [see](#).
- **An associate editor** for the Journal ‘‘Frontiers in Built Environment’’, [see](#).
- **A certified reviewer** for the Journals: ‘‘Applied Energy’’ and ‘‘Energy and Buildings’’.
- **A participant** in more than 30 international workshops and conferences, [Appendix III](#).
- **A supervisor** of 21 Masters and 6 PhD students are supervised/coached, see [Appendix II](#)
- **An author\co-author** of 50 publications in peer-reviewed journal papers, book chapters, and conference articles, see [Appendix I](#).
- **A partner** in the H2020 project TRAN-URBAN-EU-CHINA, [see](#)
- **A partner** in the H2020 project QUANTUM, [see](#).

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Personal information, skills, referees, and awards

Personal Information

Date of Birth : 10th Nov. 1982

Nationality : Egyptian

Marital Status : Married

Engineering Programs - skills

- IDA ICE
- SAM
- HOMER
- Green Building Studio.
- HAP
- REVIT/AUTOCAD.
- Automation Studio
- Try Sim

Programming Environment- skills

- MATLAB
- Office packages
- Visual Basic 0.6

Languages- skills

- Arabic: Mother Tongue
- English: Excellent

Referees

- [Referee 1 : Prof. Jan Hensen \(Former-president and Fellow of the IBPSA\).](#)
- [Referee 2: Prof. Salvatore Carlucci \(The lead of the Built Environment research unit at Cyprus Institute\)](#)
- [Referee 3: Prof. Kai Sirén \(Former head of the energy department at Aalto University\)](#)
- [Referee 4: Prof. Shady Attia \(The head of the SBD Laboratory at Université de Liège\)](#)
- [Referee 5: Dr. Ala Hasan \(President of IBPSA-Nordic, Senior researcher at VTT\)](#)

Awards

- In 2004, I have graduated with the highest grades among 550 students.
- In 2009, IBPSA-England: a [price of the international student modeling completion.](#)
- In 2010, The Confederation of Finnish Construction Industries RT (CFCI) awarded me a cash prize for my PhD research work in progress.
- In 2011, the HVAC Laboratory at Aalto University chose one of my journal publications as the paper of the year.
- In 2012, I have been interviewed by [IEA Task 40-Subtask B](#) as one of 28 international experts in building performance optimization.
- In 2013, the board of K.V. [Lindholm Heating, ventilation and air conditioning technology Finnish foundation](#) awarded me a cash prize for the achievements of my PhD thesis.
- In 2016, Honorary title of "Collaborator of the University of Liège" presso Université de Liège Company NameUniversity of Liège

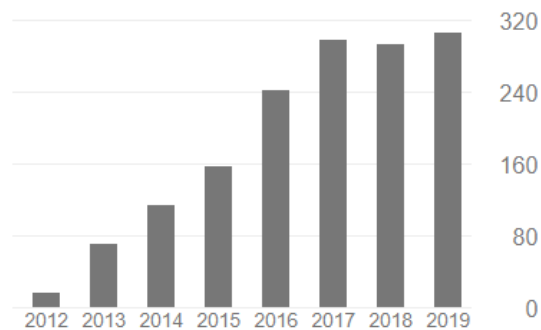
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List of Publications [Appendix I](#)

Journal article (24), book chapters (4), peer-reviewed conference papers (21), reports (2), master and PhD theses (21).

Cited by

	All	Since 2014
Citations	1532	1415
h-index	15	14
i10-index	20	19



Journal article (peer-reviewed), original research.

1. Zhoua Y., Cao S., Kosonenb R., **Hamdy M. (2019)**. Multi-objective optimization of an interactive buildings-vehicles energy sharing network with high energy flexibility using the Pareto archive NSGA-II algorithm. **Submitted to Energy and Buildings**, [see](#).
2. Schönfeldt Karlsen S., **Hamdy M.**, Attia S. (2019). Methodology to asses business models of dynamic pricing tariffs in all-electric houses. **Accepted article in Energy and Buildings**, [see](#).
3. **Hamdy M.**, Mauro G. (2019). Optimizing hybrid ventilation control strategies towards zero-cooling energy building. Accepted to be published in Frontiers in Built Environment, [see](#).
4. Tällberg, R., J B. P., Gao, T., Loonen R., **Hamdy M. (2019)**. Comparison of the Energy Saving Potential of Adaptive and Controllable Smart Windows: A State-of-the-Art Review and Simulation Studies of Thermochromics, Photochromic and Electrochromic Technologies. Solar Energy Materials and Solar Cells, [see](#).
5. Šuklje T., **Hamdy M.** Hensen Jan L.M. Arkar C. Medved S. (2019). An Inverse Modeling Approach for the Thermal Response Modeling of Green Façades. Applied Energy, [see](#).
6. Eleftheriadis G. and **Hamdy M. (2018)**. The Impact of Insulation and HVAC Degradation on Overall Building Energy Performance: A Case Study. Buildings (ISSN 2075-5309), [see](#).

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7. **Hamdy M.**, Sirén K., Attia S. (2017). Impact of Financial Assumptions on the Cost Optimality towards Nearly Zero Energy in Existing Buildings. *Energy and Buildings*, Volume 153, 2017, Pages 421-438, ISSN 0378-7788, [see](#).
8. **Hamdy M.**, Carlucci S. Hensen J.L.M., (2017). The Impact of Climate Change on the Overheating Risk in Dwellings- A Dutch case study. **Building and Environment**, Volume 122, September 2017, Pages 307-323, [see](#).
9. **Hamdy M.**, Mauro G. (2017). Multi-objective optimization of building energy design to conciliate collective and private perspectives: CO₂-eq vs discounted payback time. A special issue on zero carbon buildings in *Energies journal*, **Energies** 2017, 10, 1016, [see](#).
10. Attia S. **Hamdy M.**, Ezzeldin S. (2017). Twenty-year tracking of lighting savings and power density in the residential sector, In *Energy and Buildings*, Volume 154, 2017, Pages 113-126, ISSN 0378-7788, [see](#).
11. Eleftheriadis G., **Hamdy, M.**, (2017). Impact of building envelope and mechanical component degradation on the whole building performance: a review paper, In *Energy Procedia*, Volume 132, 2017, Pages 321-326, ISSN 1876-6102, [see](#).
12. Wójcika R., Panuś A., Tunkiewicz M., **Hamdy, M.**, (2017). Influence of chemical damp proof cream on the capillary action and microstructure of mortars, In *Energy Procedia*, Volume 132, 2017, Pages 670-675, ISSN 1876-6102, [see](#).
13. **Hamdy M.**, Nguyen A., Hensen J. (2016). A performance comparison of multi-objective optimization algorithms for solving nearly-zero-energy-building design problems, **Energy and Buildings**, Volume 121, 1 June 2016, Pages 57-71, ISSN 0378-7788, [see](#).
14. Jung N., Moula M., Fang T., **Hamdy M.**, Lahdelma R. (2016). Social acceptance of renewable energy technologies for buildings in the Helsinki Metropolitan Area of Finland, **Renewable Energy**, Volume 99, December 2016, Pages 813-824, ISSN 0960-1481, [see](#).
15. Bischof J., Hensen J.L.M., **Hamdy M.**, Philips C. (2016). Renewable energy technology feasibility study for a new hotel building in Amsterdam. **REHVA Journal**. [see](#).
16. **Hamdy M.**, Sirén K. (2015). A Multi-Aid Optimization Scheme for Large-scale Investigation of Cost-optimality and Energy Performance of Buildings. **Journal of Building Performance Simulation**. ISSN: 1940-1493 (Print) 1940-1507 (Online). [See](#).
17. Mauro G.M., **Hamdy M.**, Vanoli G.P., Bianco N., Hensen J. (2015). A new methodology for investigating the cost-optimality of energy retrofitting a building category, **Energy and Buildings**, Volume 107, 15 November 2015, Pages 456-478, ISSN 0378-7788, [see](#).
18. Mohamed A., **Hamdy M.**, Hasan A., Sirén K., (2015). The performance of small scale multi-generation technologies in achieving cost-optimal and zero-energy office building solutions, **Applied Energy**, Volume 152, 15 August 2015, Pages 94-108, ISSN 0306-2619, [see](#).

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19. Moula M., Maula J., **Hamdy M.**, Fang T., Jung N., Lahdelma R., (2013). Researching social acceptability of renewable energy technologies in Finland, **International Journal of Sustainable Built Environment**, Volume 2, Issue 1, June 2013, Pages 89-98, ISSN 2212-6090, [see](#).
20. Attia S., **Hamdy M.**, O'Brien W., Carlucci S. (2013). Assessing Gaps and Needs for Integrating Building Performance Optimization Tools in Net Zero Energy Buildings Design, **Energy and Buildings**, 60 (5); pp. 110–124. [See](#).
21. **Hamdy M.**, Hasan A., Sirén K. (2013). A Multi-stage Optimization Method for Cost-Optimal nearly-Zero-Energy Building Solutions in Line with the EPBD-Recast 2010. **Energy and Buildings** 56 (1) 189–203. [See](#).
22. **Hamdy M.**, Hasan A., Sirén K. (2011). Impact of adaptive thermal comfort criteria on building energy use and cooling equipment size using a multi-objective optimization scheme. **Energy and Buildings**, 43 (9); pp. 2055-2067. [See](#).
23. **Hamdy M.**, Hasan A., Sirén K. (2011). Applying a multi-objective optimization approach for Design of low-emission cost-effective dwellings. **Building and Environment**, 46 (1); pp. 109-123. [See](#).
24. **Hamdy M.**, Hasan A., Sirén K. (2010). Optimum design of a house and its HVAC systems using simulation-based optimization. **International Journal of Low-Carbon Technologies**, 5 (3); pp. 120-124. [See](#).

Book section, chapters in research books (peer-reviewed).

1. Ismail K., **Hamdy M.**, Maher A. (2019) Net Zero Energy Buildings (NZEBS) Potential in MENA Region: Critical Review on Egypt Case. In: Alalouch C., Abdalla H., Bozonnet E., Elvin G., Carracedo O. (eds) *Advanced Studies in Energy Efficiency and Built Environment for Developing Countries. Advances in Science, Technology & Innovation (IEREK Interdisciplinary Series for Sustainable Development)*. Springer, Cham, [see](#)
2. Carlucci S., **Hamdy M.**, Moazami A. (2018). Challenges in Modeling and Simulation of Green Buildings. *Handbook of Energy Systems in Green Buildings*. ISBN 978-3-662-49119-5, [see](#).
3. Attia, S., **Hamdy, M.**, Carlucci, S., Pagliano, L., Bucking, S. and Hasan, A. (2015) Building performance optimization of net zero-energy buildings, in *Modeling, Design, and Optimization of Net-Zero Energy Buildings* (eds A. Athienitis and W. O'Brien), Wilhelm Ernst & Sohn, Berlin, Germany, [see](#).
4. Hasan A., Palonen M., **Hamdy M.** (2015) Simulation-Based Optimization for Energy and Buildings. In: Sayigh A. (eds) *Renewable Energy in the Service of Mankind Vol I*. Springer, Cham, [see](#).

Mohamed Hamdy*Associate Professor & Senior Consultant*Conference papers (peer-reviewed)

1. L C Felius, **M Hamdy**, B D Hrynyszyn and F Dessen. (2019). The impact of building automation control systems as retrofitting measures on the energy efficiency of a typical Norwegian single-family house. SBE19 -Thessaloniki “Sustainability in the built environment for climate change mitigation”, [see](#).
2. Felius LC, Thalfeldt M, Georges L, Hrynyszyn BD, Dessen F, **Hamdy M.** (2019). Fireplace behaviour and its effect on the electrical energy demand of a retrofitted Norwegian house. Accepted for the 1st Nordic Conference on Zero Emission and Plus Energy Buildings 2019 in Trondheim, Norway, [see](#).
3. Felius L. C., Hrynyszyn B D., **Hamdy M.** (2019). Occupant behaviour-based patterns of using a fireplace in Norwegian housing: a survey-based statistical analysis. 1st International Seminar on 'Towards Sustainable Tomorrows: From Sound Concepts to Sound Practice' - 31st October-1st November 2019 - Abstract Book and Introduction to SAS Network, Espoo, Finland, [see](#).
4. Schonfeldt, S.; Backe, S; **Hamdy, M.** (2019). Effect of Grid Tariffs On Demand-side Management In All-electric Buildings In Norway. 16th International Conference of the International Building Performance Simulation Association (**BS2019**), Italy, [see](#).
5. Eleftheriadis G., **Hamdy, M.,** (2017). Impact of building envelope and mechanical component degradation on the whole building performance: a review paper. 11th Nordic Symposium on Building Physics, **NSB2017**, 11-14 June 2017, Trondheim, Norway, [see](#).
6. Wójcika R., Panuś A., Tunkiewicz M., **Hamdy, M.,** (2017). Influence of chemical damp proof cream on the capillary action and microstructure of mortars. 11th Nordic Symposium on Building Physics, **NSB2017**, 11-14 June 2017, Trondheim, Norway.
7. Ismail K., **Hamdy M.,** Maher A. (2017). Net Zero Energy Buildings (NZEBSs) Potential in MENA Region: Critical Review on Egypt Case. International conference: Improving Sustainability Concept in Developing Countries. ISCDC Conference 2017, Cairo, Egypt.
8. **Hamdy, M.,** Hensen J. (2015). Ranking of Dwelling types in terms of Overheating Risk and Sensitivity to Climate Change. 14th International Conference of the International Building Performance Simulation Association (**BS2015**), 7-9 December 2015, Hyderabad, India, [see](#).
9. **Hamdy, M.,** Hensen J. (2015). Assessment of Overheating Risk in Dwellings. Healthy Building Europe 2015. May 18-20th 2015, Eindhoven, the Netherlands.
10. Hasan A., Mohamed A., **Hamdy M.** (2015). Net- and Nearly- Zero Energy Buildings: A Review of the Definitions and Case Studies. Proceedings of the Sixth International Conference on Heating, Ventilation and Air-Conditioning May 26-28, 2015, RIPI Conventions Center, Tehran, Iran ICHVAC6-8112, [see](#).
11. Hasan, Ala; Palonen, M.; **Hamdy, M.** (2014). Simulation-based optimization for energy and buildings. World Renewable Energy Congress XIII, WREC 2014, 3 - 8 August 2014, London, United Kingdom. World Renewable Energy Network WREN (2014), 7 p.

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12. **Hamdy M.,** Hasan A. (2013). A Holistic Simulation-Based Optimization Approach for Dimensioning Cost Optimal and Nearly-Zero-Energy Buildings. 1st IBPSA-Egypt Conference, Building Simulation Cairo 2013. 23rd- 24th June 2013, [see](#)
13. Palonen M., **Hamdy M.,** Hasan A. (2013). MOBO: A New Software for Multi-Objective Building Performance Optimization. 13th International Conference of the International Building Performance Simulation Association (**BS2013**), France, [see](#).
14. Attia S., **Hamdy M.,** O'Brien, W., Carluccio, S. (2013). Computational Optimization for Zero Energy Buildings Design: Interviews results with twenty eight International expert. 13th International Conference of the International Building Performance Simulation Association (**BS2013**), France, [see](#).
15. **Hamdy M.,** Palonen M., Hasan A. (2012). Implementation of Pareto-Archive NSGA-II Algorithms to A nearly-Zero-Energy Building Optimization Problem. The first Simulation and Optimization Conference (**BSO12**). IBPSA-England, Loughborough University, UK, [see](#).
16. Attia S., **Hamdy M.,** Samaan M., De Herde A., Hensen J. (2011). Towards Strategic Use of BPS Tools in Egypt. IBPSA: 12th International Building Performance Simulation Association Conference, Sydney Australia; 14-16 Nov, 2011, [see](#).
17. **Hamdy M.,** Hasan A. (2011). Toward NZEB using automatic simulation-based optimization approach. International Conference on Modeling and Optimization (ICMO 2011), Cairo, Egypt, [see](#).
18. **Hamdy M.,** Hasan A., Sirén K. (2011). Trade-off Relation between Energy Consumption and Comfort Level according to the Finnish-2008 Adaptive Thermal Comfort Criteria. 12th International conference on Air distribution in Rooms, RoomVent 2011, [see](#).
19. Sirén K., Hasan A., **Hamdy M.** (2010). Optimal Design of an Office Building for Low-Primary Energy Requirement and High-Indoor Thermal Comfort Level. Accepted for presentation in Sustainable Community - building SMART conference 22.-24.9.2010 Dipoli, Espoo, Finland, [see](#).
20. Hasan A., **Hamdy M.,** Palonen M., Sirén K. (2010). Simulation-Based Optimization for Low Energy, High Comfort and Cost Effective Designs of Buildings and HVAC Systems. World Renewable Energy Congress XI. 25-30 September 2010, Abu Dhabi, UAE, [see](#).
21. **Hamdy M.,** Hasan A., Sirén K. (2009). Combination of optimization algorithms for a multi-objective building design problem. IBPSA: 11th International Building Performance Simulation Association Conference (**BS2009**), Glasgow-UK, [see](#).
22. **Hamdy M.,** Hasan A., Sirén K. (2009). Combination between optimization and simulation for low-emissions cost-effective single family house in cold climate of Finland. SET 2009-8th International Conference on Sustainable Energy Technologies. Aachen, Germany, [see](#).

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National and international Reports

1. **Hamdy M., Hensen J., (Oct. 2014).** Impact of Climate Change on Overheating Risk in Dwellings. CPC Project: Climate proof cities. Eindhoven University of Technology, Department of Built Environment.
2. **Hamdy M. Lahdelma R. (May. 2010).** Decision Making for Optimal Low-Emissions Cost-Effective Dwellings: Finnish Study. Practical Study Assignment in Energy Economics. Helsinki University of Technology. Department of Energy Technology.

Thesis (Paper-based Doctoral dissertation)

1. **Hamdy M., (2012).** Combining Simulation and Optimisation for Dimensioning Optimal Building Envelopes and HVAC Systems. Aalto University publication series. Doctoral Dissertation 177/2012, [see](#).

List of Master/PhD theses under my supervision Appendix*Master students*

1. Tonje Omli-Moe (master student from NTNU). **2018/2019.** Investigation of strategies to dimension the HVAC system in museums. (Supervisors: prof. **Hans Martin** and associate Prof. **Hamdy, M.**).
2. Karoline Bondø Haug. **2019/2020.** Calibration of Building Energy Simulation Models Based on Optimization. (Supervisors: prof. **Hamdy, M.**). [see](#).
3. [Helene Solvang](#). (Master thesis at NTNU). **2018/2019.** Daylight requirements in the Norwegian Regulations vs. the European Standard: A case study considering thermal performance. (Supervisors: prof. **Hamdy, M.**), [see](#).
4. Sophie Schönfeldt Karlsen (master student from NTNU). **2017/2018.** Investigation of Grid Rent Business Models as Incentive for Demand-Side Management in Buildings - A case study on fully electric operated houses in Norway. (Supervisors: prof. **Hamdy, M.**), [see](#)
5. Vilde Christine Hagen (master student from NTNU). **2017/2018.** Robustness assessment methods to identify robust high performance building designs, (Supervisors: prof. **Hamdy, M.** and Shabnam Homaie), [see](#).
6. Stian Wirak (master student from NTNU). **2017/2018.** Passive and active techniques to damp indoor moisture fluctuations at optimal levels in museums (Supervisors: prof. **Hamdy, M.** and prof. Stig Geving).
7. Tor Atle Skramdal (master student from NTNU). **2017/2018.** BIM-based building energy modelling. (Supervisors: prof. **Hamdy, M.** and prof. Ole Jonny Klakegg).

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8. Kristian Widding (master student from NTNU). **2017/2018**. A Systematic Investigation of Interoperability Issues and Solutions Between Architectural BIM models and Building Energy Modeling: Case Studies. (Supervisors: prof. **Hamdy, M.**), [see](#).
9. Georgios Eleftheriadis (**visiting student from TU/Berlin**). **2016/2018**. Impact of technologies' performance degradation on overall NZEBs' performance. (Supervisors: prof. **Hamdy, M.** and Prof. Kriegel).
10. [Arghavan Akbarieh](#) (**visiting student from University of Bologna**). **2017/2018**. Information Exchange Issues between BIM-based Architectural Models and Building Energy Analysis Tools: A European Case-study. (Supervisors: prof. **Hamdy, M.** and Prof. Annarita Ferrante).
11. Rebecca Celine Lundqvist (master student from NTNU). **2017/2018**. Investigation of stabilizing the indoor environment using building thermal mas. A case study: Viking Ship museum in Norway. (Supervisors: prof. **Hamdy, M.** and prof. Stig Geving), [see](#).
12. Håkon Eggebø, (2016/2017). Sensitivity analysis for investigating the energy performance of a retrofitted kindergarten under different weather scenarios. The Norwegian University of Science and Technology (NTNU). (Supervisors: Salvatore Carlucci and Mohamed Hamdy), [see](#).
13. Kemme P.A.M. (2014/2015). *Building Portfolio Analysis and Benchmarking for Estimating Energy Saving Potential*. Eindhoven, The Netherlands: TU/e. (Supervisor(s): Hensen, J.L.M., **Hamdy, M.**, Tuip, B. & Branderhorst, Ir. T.)
14. Bischoff, J. (2015). *Hotel 'Amstel Kwartier' Towards net Zero Energy Hotel By applying renewable energy systems*. Eindhoven, The Netherlands: TU/e. (Supervisors: Hensen, J.L.M., **Hamdy, M.**, Nastasi, B. & Philips, C.)
15. Spruijt, J.G. (2014/2015). *Supporting the Eindhoven University of Technology to reach thermal energy balance at the Campus 2020*. (Graduation Paper, TU Eindhoven. Fac. Bouwkunde : afstudeerverslagen, no 5751). Eindhoven, The Netherlands: TU/e. (Supervisors: Hensen, J.L.M., **Hamdy, M.**), [see](#).
16. Straten. (2014/2015). *A Comparison between the calibration of Low-resolution and detailed FDD Simulation Tools in the Post-Design Phase*. (Graduation Paper, TU Eindhoven. Fac. Bouwkunde: afstudeerverslagen, no 5751). Eindhoven, The Netherlands: TU/e. (Supervisors: Hensen, J.L.M., **Hamdy, M.**), [see](#).
17. Randy van Eck. (2014/2015). Design reference data, present and future energy use. How robust are our metrics used in reference data? Eindhoven, The Netherlands: TU/e. (Supervisors: Loomans, M.G.L.C. **Hamdy, M.**)
18. Schurink, N. (2015). *Selling Hot Air: The Potential of Solar Heat for Agricultural Drying Application*. Eindhoven, The Netherlands: TU/e. (Supervisor(s): Hensen, J.L.M., **Hamdy, M.** & Donker, M.V.D.)
19. Voert, G. (2015). *Improved climate control Auditorium building TU/e*. Eindhoven, The Netherlands: TU/e. (Supervisor(s): Hensen, J.L.M., **Hamdy, M.**, & Loomans, M.G.L.C.)

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20. Sande, R.P.J. (2015/2016). *Consulting housing corporations towards upgrading their existing Dutch housing stock*. Eindhoven, The Netherlands: TU/e. (Supervisors: Hensen, J.L.M., **Hamdy, M.**, & Torrens Galdiz, J.I.)
21. Frank Tanuwijaya. (2015/2016). *Profitable Building Renovations by Woonbedrijf for Eindhoven Energy-Neutral by 2045*. The Netherlands: TU/e. (Supervisors: Hensen, J.L.M., **Hamdy, M.**)

PhD Candidates

1. [Shabnam Homaie](#), 2018-2021, PhD candidate in “*Optimal Integrated Building Designs for Resilient Zero Emission Neighborhoods*” at NTNU, Supervisors: **prof. Hamdy, M.**
2. [Laurina C. Felius](#), 2016-2020, PhD candidate in “*Effective energy use in existing buildings with the use of modern sensor technology and building automation*” at NTNU and as junior member of ENERSENSE, Supervisors: Associate prof. Hrynyszyn BD, Associate prof. Dessen F, and **Associate prof. Hamdy, M.**
3. [Alla Marchenko](#), 2018-2020, PhD candidate in Building quality management for improving energy performance and reducing the performance gap, Supervisors: prof. Salvatore Carlucci and **Associate prof. Hamdy, M.**
4. [Khaled Ismail](#); PhD. Student at Cairo university (Egypt).
5. [Mohamed Bakry](#); PhD. Student at Helwan university (Egypt).