
Mohamed Hamdy Hassan Mohamed

**PhD specialist in Building Energy Optimization;
HVAC, fire fighting, pneumatic sys., and PLC engineer**



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OBJECTIVE

- ✓ Seeking a job position as a building energy analyst. Finding optimal solutions is my favorite task.

EDUCATION

Doctor of Science in Technology (D.Sc.)

- **Subject:** Combining Simulation and Optimization for Dimensioning Optimal Building Envelopes and HVAC Systems.
- **University:** Aalto University, School of Engineering, Finland
- **Dates of Study (From/to):** 2008/2012.
- **Date Awarded:** 14th Dec. 2012

Master of Science (M.Sc.)

- **Subject:** Optimization Process of HVAC Control System at Different Loads in Office and Hotel Buildings.
- **University:** Helwan University, Cairo, Egypt.
- **Dates of Study (From/to):** Oct. 2004 / April. 2007.
- **Date Awarded:** July 2007.

Bachelor of Technology (B.Tech.)

- **Subject:** Mechanical Power Engineering.
- **University:** Helwan University.
- **Class:** Very Good with honor degree.
- **Rank:** The First (Department capacity: 550 students).
- **Grade of the Graduation Project:** Excellent (195/200).
- **Dates of Study (From/to):** Aug. 1999 / May. 2004.
- **Date Awarded:** July 2004.

TECHNICAL SKILLS

Engineering Programs

- IDA ICE 0.3 and 0.4 (EQUA; Building Energy Simulation Program)
- HAP_4.04. (CAREER; Load estimation program)
- AUTOCAD.
- Familiar with EnergyPlas and TRNSYS
- Automation Studio (Hydraulic and Pneumatic automation program)
- Try Sim. (SIEMENS; Product line simulation program)

Programming Languages

- MATLAB (Expert)
- Office packages (Expert)
- Visual Basic 0.6 (Standard)

LANGUAGES

Arabic: Mother Tongue

English: Very Good

WORK EXPERIENCE

- **List of work experience** (see page 3)

PUBLICATIONS

- **List of Publications** (see pages 4 and 5)
 - Four journal papers.
 - Eight peer-reviewed conference papers.
 - Two papers have been submitted for publication.
 - Two papers under preparation.

WORKSHOPS AND TRAININGS

- **List of workshops and trainings** (see pages 6-8)

MOST SIGNIFICANT PROFESSIONAL ACCOMPLISHMENT AND AWARD

- ✓ In 2011, my HVAC Laboratory at Aalto University selected one of my journal publications as the **paper of the year**.
- ✓ In 2010, The Confederation of Finnish Construction Industries RT (CFCI) awarded me a **price for my research effort**.
- ✓ In 2009, IBPSA-England selected me as a **winner of the international student modeling completion** organized by M. J. Cook, S. J. Rees, and J. A. Wright at Strathclyde University, UK.
- ✓ In 2004, I have graduated from my home university (Helwan University) as **the first of 550 students**.

PERSONAL DETAILS

Date of Birth: Nov, 10, 1982

Nationality: Egyptian

Gender: Male

Military service: Exempted

Marital Status: Married

WORK EXPERIENCES

- **Employer:** Aalto University, Espoo, Finland.
 - **Position:** Researcher (*March 2008 - Dec. 2012*)
 - **Job Hour:** Full time
 - **Responsibility:** Working in Research projects related to cost-optimal environmentally friendly buildings. The major research topic is "Combining Simulation and Optimisation for Optimal Building Envelopes and HVAC Systems".
 - **Reference:** Prof. Kai Siren (kai.siren@aalto.fi).
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- **Employer:** Crown Home Consultant (CHC), electromechanical office, Cairo, Egypt.
 - **Position:** Senior Engineer (*April 2007 - Feb. 2008*)
 - **Job Hour:** Part time
 - **Responsibility:** Design A/C & Fire Fighting systems.
 - **Reference:** General Manager: Ahmad Tag El-Deen (+2 012 2104384)
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- **Employer:** Research Center for Technological Development (R.C.T.D), Cairo, Egypt.
 - **Position:** Design Engineer. (*May 2006- April 2007*)
 - **Job Hour:** Free lance
 - **Responsibility:** Reverse engineering for product lines and automation systems.
 - **Reference:** Prof. Ibramim Mosad (+2 010 5373023); Dr. Khaled Shebl
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- **Employer:** Electro-Mechanical Consultant office (E.M.G), Cairo, Egypt.
 - **Position:** Junior Engineer (*Aug. 2005-May 2006*)
 - **Job Hour:** Part Time
 - **Responsibility:** Design A/C & Fire Fighting systems.
 - **Reference:** Consultant engineer: Hani Ali
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- **Employer:** Beta. Mac, Flex link Agency for product line and automation (www.FlexLink.com), Cairo, Egypt.
 - **Position:** Designer (*Dec. 2004 - Aug. 2005*)
 - **Job Hour:** Free lance
 - **Responsibility:** Design and installing product lines and automation systems.
 - **Reference:** General manager: Naser Sabry (+2 012 3126916) (betamach@link.com)
 - **Projects:** Design the automation system of new product lines for branches of La Vache Qui Rit Company (Bel. Syria and Bel. Egypt)
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- **Job Hour:** Helwan University (HU) (at Egypt)
 - **Job Hour:** Teacher assistant (from Oct. 2004)
 - **Job Hour:** Full time position (According to classes schedule)
 - **Responsibility:** Teaching Mechatronics, Pneumatics, hydraulic power, and fire fighting to undergraduate student. Trainer at the Egyptian Industrial Ministry Training Program for fresh graduate engineers.
 - **Reference:** Prof. Mohamed EL-Telbany (+2 010 6763931)
Prof. Aida Abd El Hafiz (aidaahafiz@yahoo.com)
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LIST OF PUBLICATIONS

Journal papers

1. **Hamdy M.**, Hasan A., Sirén K. (2012) A Multi-stage Optimization Method for Cost-Optimal nearly-Zero-Energy Building Solutions in Line with the EPBD-Recast 2010. Energy and Buildings.
<http://dx.doi.org/10.1016/j.enbuild.2012.08.023>
2. **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.
<http://dx.doi.org/10.1016/j.enbuild.2011.04.006>
3. **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.
<http://dx.doi.org/10.1016/j.buildenv.2010.07.006>,
4. **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.
<http://ijlct.oxfordjournals.org/content/5/3/120.short>

Conference papers

1. **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.
<http://indoorenvironment.org/implementation-of-pareto-archive-nsga-ii-algorithms-to-a-nearly-zero-energy-building-optimization-problem/>
2. 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.
http://www.bwk.tue.nl/bps/hensen/publications/11_BS11_Attia.pdf
3. **Hamdy M.**, Hasan A. (2011). Toward NZEB using automatic simulation-based optimization approach. International Conference on Modeling and Optimization (ICMO 2011), Cairo, Egypt.
http://ene.aalto.fi/en/publications/heating_ventilating_and_air_conditioning/2011
4. **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.
http://www.sintef.no/project/Roomvent%202011/RV11_AbstractBook_100611.pdf

5. 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.
http://ene.aalto.fi/en/publications/heating_ventilating_and_air_conditioning/2010
6. 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.
http://ene.aalto.fi/en/publications/heating_ventilating_and_air_conditioning/2010/
7. **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, Glasgow-UK.
http://www.ibpsa.org/proceedings/BS2009/BS09_0173_179.pdf
8. **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.
http://ene.aalto.fi/en/publications/heating_ventilating_and_air_conditioning/2009/

Ongoing Papers

1. Attia S., **Hamdy M.**, O'Brien, W., Carlucchie, S. Assessing the Gaps and Needs for Integrating Building Performance Optimization Tools in Net Zero Energy Buildings Design, Energy and Buildings Journal, Under Review.
2. Attia S., **Hamdy M.**, O'Brien, W., Carlucchie, S. Computational Optimisation for Zero Energy Buildings Design: Interviews results with twenty eight International expert, Building Simulation 2013 France, Abstract Submitted.
3. **Hamdy M.**, Hasan A. Comparing Multi-objective Optimization Algorithms in Solving Environmentally-Friendly Building Design Problem. Abstract submitted to Building Simulation-2013 France.
4. Attia S., **Hamdy M.** Cost Optimal Nearly Zero Energy Building Solutions in Belgium, Ongoing Journal Paper.

About the main co-authors

Kai Siren, professor at Aalto University School of Engineering and the former head of Energy Department, (kai.siren@aalto.fi).

Ala Hasan, professor assistant at Aalto University School of Engineering and the President of IBPSA-Nordic, <http://www.ibpsa-nordic.org/people.php>, (ala.hasan@aalto.fi).

WORKSHOPS , TRAINING, AND CONFERENCES

Outside Finland

1. **The 8th Experts Group Meeting of the SHC Task 40 / ECEBS Annex 52**
 Place: Universitat Pompeu Fabra – UPF, Barcelona, Spain.
 Time: 1-3 October 2012.
 Webpage: <http://www.iea-shc.org/task40/events/meeting08/index.html>

2. **Building Simulation and Optimization Conference (BSO12)**
 Place: Loughborough University, UK.
 Time: 10-11 September 2012.
 Webpage: <http://www.bso12.org>.

3. **The 7th Experts Group Meeting of the SHC Task 40 / ECEBS Annex 52**
 Place: Naples, Italy.
 Time: 8-11 May 2012.
 Webpage: <http://www.iea-shc.org/task40/events/meeting07/index.html>

4. **Net Zero Energy Building Strategies, Systems and Technologies (*PhD Seminar*)**
 Place: Aalborg University, Aalborg, Denmark.
 Time: 8-9 December 2011.
 Webpage: <http://www.zeb.aau.dk/Arrangementer/Arrangement/faelles-nordisk-phd-seminar.cid50800>

5. **International Conference on Modeling and Optimization ICMO 2011.**
 Place: Cairo, Egypt.
 Time: 1-3 October, 2011.

6. **12th International conference on Air distribution in Rooms, RoomVent 2011.**
 Place: Trondheim, Norway.
 Time: 19th to 22th June, 2011.
 Webpage: <http://www.buildingecology.com/events/roomvent-2011-12th-international-conference-on-air-distribution-in-rooms>

7. **Leadership in Energy and Environmental Design (LEED) (*Professional Training*)**
 Place: The Egyptian Earth Construction Association (EECA), Cairo, Egypt
 Time: 7-10 February 2011.

8. **The 4th Experts Group Meeting of the SHC Task 40 / ECEBS Annex 52**
 Place: Graz, Austria.
 Time: 27-28 September, 2010.
 Webpage: <http://www.iea-shc.org/task40/events/meeting04/index.html>

9. **Use of Solar Energy in Heating and Cooling of Buildings (*PhD Workshop*)**
Place: Tallinna University, Estonia.
Time: 15-18 June, 2010.

 10. **IBPSA: 11th International Building Performance Simulation Association Conference.**
Place: Glasgow, Scotland, UK.
Time: 27th-30th July, 2009.
Webpage: <http://www.bs2009.org.uk/>

 11. **Three-month visiting to learn about optimization from Professor Jonathan Wright (<http://www.lboro.ac.uk/departments/cv/staff/profile/21.html>)**
Place: Loughborough University, UK.
Time: From May to July, 2009
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International events in Finland

1. AALTO ENERGY DAY,
Place: Saha1, Otaniemi, Espoo, Finland
Time: 29th November, 2011

 2. Nordic Climate Festival at Aalto,
Place: Otaniemi, Espoo, Finland
Time: 30th Aug to 2nd Sep.2011

 3. EcoKnowledge 2010 Graduate school workshop for PhD students
Place: Lahti center, Aalto University, Espoo, Finland
Time: 3rd and 4th November 2010
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Trainings before the master Degree

Helwan University, Cairo, Egypt (2007)

- **Certificate:** Fire Fighting system Design
- **Reference:** Dr. Hatim Sadiq



Faculty and Leadership Department Project (FLDP) (Helwan University) (2006)

- **Certificates:**
 - Communication skills
 - Thinking Skills
 - Methodologies of Scientific Research
 - Using Technology Methods in Teaching



ASHRAE Cairo (2005)

- **Certificate:** Air Conditioning Control System
- **Reference:** Prof. Mustafa El-said



Global Max (Engineering Solutions and training center) (2005)

- **Certificate:** MATLAB Diploma
 - Introduction to MATLAB (I) and (II)
 - Advancing programming with MATLAB
 - Graphical User Interfaces (GUIs) using MATLAB
 - Neural Network using MATLAB
 - Simulink
- **Reference:** PhD/ Yasser Zeyada



Technology Competency Center/Staff Training Institute (2003/2004)

Egyptian-Dutch training center (Cairo, Egypt)

- **Certificates:**
 - Advanced Electro Pneumatic system.
 - Advanced PLC (Step_7_300 & LG).
 - Digital electronic technology, PCP



Gulf of Suez Petroleum Company [GUPCO] (at Egypt)

Date (From /To): Aug.10.2003 / Aug.25.-2003

New and Renewable Energy Authority [NREA] (at Egypt)

Date (From /To): July 5.2003/ July -30-2003

The General Institution for Tissue Production (at Syria)

Date (From /To): July 31.2002/ Aug. 30-2002

Visiting student: University: Damascus University, Syria.

From 20.May to 30.June 2002.