

CV – Jan-Olof Dalenbäck – January 2013



Professor in Building Services Engineering
Dept. of Energy and Environment, CHALMERS.
Born in 1954, MSc in Electrical Engineering 1980,
Ph.D. in Building Services Engineering 1993.
Swedish (Danish, Norwegian), English (and German).

Author or first author of 30 printed reports or books (14 in English) and >30 international articles (>20 in English, 8 in German), out of which 12 are reviewed, >50 international conference papers and >25 national articles.

Extensive experience as tutor and teacher in Building Services Engineering, i.e. planning and design of heating, ventilation and air conditioning (HVAC) systems. Specialist knowledge in planning and design of solar heating systems, good knowledge of solar electricity systems. Good overarching knowledge of global and national energy supply and energy end use. Tutor for >10 PhD students and >100 Master thesis on various subjects.

National assignments:

Swedish representative in Task 7 "Central Solar Heating Plants with Seasonal Storage" (1985-1990), Task 20 "Solar Energy in Building Renovation" (1993-1999, including the development of a roof module collector in 1994), Swedish expert in Task 24 "Solar Procurement" (1999-2002), all within the IEA SHC¹ Programme, and Secretary, Solar energy R&D program 1997-1999, on behalf of the Swedish Council for Building Research (BFR)².

Secretary Solar Energy Association of Sweden³ 2008- (Vice chair 1993-2007, Board member 1987-); General secretary ISES⁴ SWC⁵ 2003 (Svenska Mässan, Göteborg).

Chairman of the evaluation committee for "Energy in the Built Environment" (2002-2004), Swedish Research Council for Environment, Agriculture and Spatial Planning (Formas).

Co-ordinator EC-THERMIE-projects "European Large-Scale Solar Heating Network" (1998-1999) and "Solar Heating Plant – 5 000 kW", in Kungälv, Sweden (1999-2001), at that time the largest solar heating plant in Europe. Consultant to Bostads AB Gårdsten in EC-THERMIE project "SHINE" (1998-2001) and EC-ENERGY project "RegenLink" (2000-2003), both comprising innovative renovation of about 250 flats in existing multi-family buildings. Consultant to HSB Bostad AB in EC-THERMIE project "Large Scale Solar Heating Systems for Housing Developments" (1998-2001) comprising a new residential building area with low energy houses and solar heating with seasonal storage.

Co-ordinator for the "Built Environment Platform" at Chalmers Energy Centre (2007-10).
Profile leader for "Energy in Buildings", Chalmers Energy Area of Advance 2010- .

National awards:

Årets prestation 2003 – Svensk solenergi (ISES SWC 2003)
Stora Enso priset 2007 – Hallands Akademi

¹ IEA SHC = IEA Solar Heating and Cooling Programme - www.iea-shc.org

² Byggforskningsrådet, som senare blev en del av Formas.

³ Svensk solenergi – www.svensksolenergi.se

⁴ ISES = International Solar Energy Society - www.ises.org

⁵ Solar World Congress

International assignments:

ISES Board member repr. Small sections 2011- (Sweden and Finland 2010, Vice president Membership 2008-09; Treasurer 2006-07, Vice president Industry 2004-05, Board member repr. Sweden 2003-05, repr. Sweden, Denmark and Finland 1999-2002).

ISES SWC: Scientific/Program committee member 2009, 2007 and 2003.

ISES Europe Governing Board 2003- (President 2007-09, Vice president 2005-07, National Liaison Officer 1997-). Eurosun: Scientific chair 2012; International Chair 2008; Scientific/Program committee member 2010, 2004, 2002 and 2000.

Vice president ESIF 2002 as responsible for the reformation to ESTIF⁶, ESIF Board 2000-2002). Scientific/Program committee member **estec** 2009, 2007, 2005 and 2003.

Member Steering committee STTP⁷ within RHC-ETP⁸ 2009- (Steering committee ESTTP⁹ and Working Group leader WG2E District Heating 2006-2008).

Passivhus Norden: Scientific/Program committee chair 2013; member 2009.

International awards:

Solar Award 2005 - IEA SHC

Special Service Award 2009 - ISES

Reviewed publications:

Dalenbäck, J-O. and T. Jilar (1985). Swedish Solar Heating with Seasonal Storage - Design, Performance and Economy. *International Journal of Ambient Energy*, Volume 6, Number 3, July 1985, London.

Dalenbäck, J-O. (1988). *Large-Scale Swedish Solar Heating Technology - System design and Rating*. Document D6:1988, Swedish Council for Building Research, Stockholm.

Licentiate thesis

Dalenbäck, J-O. (Ed.) (1990). *Central Solar Heating Plants with Seasonal Storage - Status Report*. Document D14:1990, Swedish Council for Building Research, Stockholm. (Final report, IEA SH&CP, Task VII)

Dalenbäck, J-O. (1993). *Solar Heating with Seasonal Storage - Some Aspects of the Design and Evaluation of Systems with Water Storage*. Document D21:1993, Dept. of Building Services Engineering, Chalmers University of Technology, Göteborg. **PhD thesis**

Ren, J. X. and J-O. Dalenbäck (1995). Night Ventilation for Cooling Purposes; Part I - Reference Building and Simulation Model. *Proceedings Building Simulation '95*, Fourth International Conference, International Building Performance Simulation Association (IBPSA)", August 14-16, 1995, Madison, Wisconsin, USA.

Dalenbäck, J-O. (1996). Solar Energy in Building Renovation. *Energy and Buildings*, Volume 24, Issue 1, Elsevier.

Dalenbäck, J-O. und N. M. Fisch (1996). Solarthermische Grossanlagen. *Thermische Solarenergienutzung an Gebäuden*. (Printed book), 1996, Springer Verlag, Germany.

Dahm, J., C. Bales, K. Lorenz and J-O. Dalenbäck. (1998). Evaluation of Storage Configurations with Internal Heat Exchangers. *Solar Energy*, No 6, Vol. 62, 1998, Elsevier Science.

Dalenbäck, J-O et.al. (1998) A Review of Large-Scale Solar heating Systems in Europe. *Solar Energy*, No 6, Vol. 63, 1998, pp. 355-366, Elsevier Science Ltd., England.

Vestlund, J., M. Rönnelid and J-O. Dalenbäck. (2009) Thermal Performance of Gas-filled Flat Plate Solar Collectors. *Solar Energy* 83, 896-904, Elsevier Science Ltd.

⁶ ESTIF = European Solar Thermal Industry Federation - www.estif.org

⁷ STTP = Solar Thermal Technology Panel

⁸ RHC-ETP = Renewable Heating and Cooling Energy Technology Platform – www.rhc-etp.org

⁹ ESTTP = European Solar Thermal Technology Platform – www.esttp.org

CV – Jan-Olof Dalenbäck – January 2013

- Vestlund, J., J-O. Dalenbäck and M. Rönnelid. (2012) Movement and Mechanical Stresses in Gas-filled Flat Plate Solar Collectors. *Solar Energy* 86, 339-350, Elsevier Sci Ltd.
- Vestlund, J., J-O. Dalenbäck and M. Rönnelid. (2012) Thermal and mechanical performance of sealed, gas-filled, flat plate solar collectors. *Solar Energy* 86, 13-25, Elsevier Sci. Ltd.

Supervised graduate student work:

(all within Building Services Engineering, Chalmers University of Technology, Göteborg).

- Briheim, B. (1991). *Solvärmt tappvarmvatten i flerbostadshus - Värmeteknisk utvärdering Hammarkullen*. (Preheating of domestic hot water in multifamily buildings: Thermal performance evaluation for Hammarkullen). Dokument D12:1991. **Licentiate thesis**
- Ljungkrona, I. (1994). *Thermal Room Model for Dynamic Performance Analysis of Conditioned rooms*. Dokument D24:1991. **Licentiate thesis**
- Ren, J. X. (1995). *Night Ventilation for Cooling Purposes: Analysis based on a monitored office building*. Dokument D31:1991. **Licentiate thesis**
- Dahm, J. (1997). *Evaluation of a Solar Heating System for a Small Residential Building Area*. Dokument D39:1997. **Licentiate thesis**
- Dahm, J. (1999). *Small District Heating System: Design and Performance of Heat Distribution Systems for Residential Areas with Low Heat Demand*. Dokument D48:1999. **PhD thesis**
- Lorenz, K. (2001). *Kombisolvärmsystem – Utvärdering av möjliga systemförbättringar* (Solar Combisystems: Evaluation of possible system improvements). Dokument D59:2001. **Licentiate thesis**
- Bales, C. (2002). *Thermal Store Testing: Evaluation of Test Methods*. Dokument D61:2001. **Licentiate thesis**
- Trüschel, A. (2002). *Hydronic Heating Systems: The Effect of Design on System Sensitivity*. Dokument D62:2002. **PhD thesis**
- Heikkilä, K. (2003). *Environmental Assessment of Air-conditioning Systems in Offices: Some Aspects Related to System Design*. Document D2003:5. **Licentiate thesis**
- Pavlovas, V. (2003). *Demand Controlled Ventilation: A Case Study for Existing Swedish Multifamily Buildings*. Document D2003:6. **Licentiate thesis**
- Stjern Dahl, M. (2004). *Konvertering av direktelvärmade flerbostadsområden. Beslutsunderlag och drivkrafter* (Retrofit of Direct-acting Electric Heating in Multifamily Buildings – Decision support and incentives). Document D2004:01. **Licentiate thesis**
- Bales, C. (2004). *COMBITEST: A New Test Method for Thermal Stores Used in Solar Combisystems*. Document D2004:01. **PhD thesis**
- Bergsten, B. (2004). *Free Cooling in Commercial Buildings: Application with Evaporative Cooling Tower and Chilled Beams*. Document D2004:05. **Licentiate thesis**
Swedish HVAC Society Award 2005
- Pavlovas, V. (2006). *Energy Savings in Existing Swedish Apartment Buildings: Some Aspects on Demand Controlled Ventilation and Individual Metering*. Document D 2006:1. **PhD thesis**
- Heikkilä, K. (2007). *Environmental Assessment of Air-conditioning Systems: Design Considerations for Swedish Conditions*. Document D2007:02. **PhD thesis**
Swedish HVAC Society Award 2007
- Voll, H. (2008). *Cooling Demand and Daylight in Commercial Buildings: The Influence of Window Design*. Document D2008:03. **PhD thesis**
- Bergsten, B. (2009). *Evaporative Cooling Tower and Chilled Beams: Design Aspects for Cooling in Office Buildings in Northern Europe*. Document D2009:05. **PhD thesis**
- Vestlund, J. (2012). *Gas-filled Flat Plate Solar Collectors*. Technical report D2012:02. **PhD thesis**
- Benson, J. (2012). *Tappvattenvärmning med värmepump - Förutsättningar för systemutveckling i småhus*. Technical report D2012:03. **Licentiate thesis**
- Gruber, M. (2012). *Demand-based control of indoor climate in office buildings - Design of local and central feed-forward control systems for high comfort, low energy use and low peak power*. Technical report D2012:05. **Licentiate thesis**

PhD discussion committee assignments (Betygsnämnd):

- Olsson, L. (2001). *Local District Heating Systems*. Thermo and Fluid dynamics, Chalmers University of Technology, Göteborg, Sweden.
- Aidonis; A. (2001) 2nd evaluator PhD thesis, Politecnico di Milano (2000/2001).
- Adsten, M. (2002). *Solar Thermal Collectors at High Latitudes - Design and Performance of Non-Tracking Concentrators*. Solid state physics, Uppsala University, Uppsala, Sweden.
- Chaibi, M. T. (2003). *Greenhouse Systems with Integrated Water Desalination for Arid Areas Based on Solar Energy*. Swedish University of Agricultural Sciences, Lund, Sweden.
- Lundberg, S. (2006). *Wind Farm Configuration and Energy Efficiency Studies - Series DC versus AC Layouts*. Electric Power Engineering, Chalmers University of Technology, Göteborg, Sweden.
- Fiedler, F. (2006). *Combined solar and pellet heating systems: Study of energy use and CO₂ emissions*. Mälardalen University, Västerås, Sweden.
- Brunklaus, B. (2008). *Organising matters for the environment: Environmental studies of housing management and buildings*. Environmental System Analysis, Chalmers University of Technology, Göteborg, Sweden.
- Ochs, F. (2009) 2nd evaluator PhD thesis, ITW, Universität Stuttgart (2009).
- Kjellsson, E. (2009). *Solar Collectors Combined with Ground-source Heat Pumps in Dwellings: Analyses of System Performance*. Building Physics, Lund University, Sweden.

Reserve member assignments in misc. PhD committees.

Review and discussion Licentiate thesis (Diskussionsinledare):

- Persson, T. (2004). *Elbesparing med pelletskaminer och solvärme i direktvärmade småhus*. Kungliga Tekniska Högskolan, Stockholm, Sweden.
- Klasson, J. (2007). *Att spara eller konvertera i boendemiljön – en gammal fråga i ny genomlysning*. Tekniska Högskolan, Linköpings Universitet, Linköping, Sweden.

Special scientific advisor (Sakkunnig):

- Universitetslektor i Byggteknik, Umeå Universitet (Thomas Olofsson, 2001).
- Forskarassistent i energi- och byggnadsdesign, Lunds tekniska högskola / Lunds universitet (Bengt Hellström, 2005).
- Adjungerad Professor i förnyelsebar energi, Luleå Universitet (Göran Hellström, 2006/07).
- Universitetslektor i Installations- och klimatiseringslära, Lunds tekniska högskola / Lunds Universitet (Birgitta Nordquist, 2006/07).
- Juniorprofessur ”Regenerative Prozesswärme”, Universität Kassel (Zwischenevaluation Ulrike Jordan 2008).
- Examensrätt för masterprogram, Högskoleverket (Område ”Energisystem“, Högskolan Gävle, 2009)
- Adjungerad universitetslektor i Installations- och klimatiseringslära, Lunds tekniska högskola / Lunds universitet (Dennis Johansson, 2009).
- Examensrätt på forskarnivå, Högskoleverket (Område ”Byggd miljö“, Högskolan Gävle, 2010)
- Universitetslektor i Installations- och klimatiseringslära, Lunds tekniska högskola / Lunds universitet (Dennis Johansson, 2011).

Scientific journal review

Continuous reviews of articles for Energy and Buildings > 5 years and Solar Energy Journal since > 10 years. Guest Editor for the Special Issue of the Solar Energy Journal in connection to SWC 2003 (published in 2004).