Dirk Saelens

List of Publications by Year
in descending order

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83 papers	2,434 citations	257101 24 h-index	214527 47 g-index
84 all docs	84 docs citations	84 times ranked	1981 citing authors

#	Article	IF	Citations
1	Assessing electrical bottlenecks at feeder level for residential net zero-energy buildings by integrated system simulation. Applied Energy, 2012, 96, 74-83.	5.1	171
2	Potential of structural thermal mass for demand-side management in dwellings. Building and Environment, 2013, 64, 187-199.	3.0	167
3	Generic characterization method for energy flexibility: Applied to structural thermal storage in residential buildings. Applied Energy, 2017, 198, 192-202.	5.1	153
4	Quality of grey-box models and identified parameters as function of the accuracy of input and observation signals. Energy and Buildings, 2014, 82, 263-274.	3.1	150
5	Energy flexible buildings: An evaluation of definitions and quantification methodologies applied to thermal storage. Energy and Buildings, 2018, 166, 372-390.	3.1	145
6	Coupling of dynamic building simulation with stochastic modelling of occupant behaviour in offices â€“ a review-based integrated methodology. Journal of Building Performance Simulation, 2011, 4, 339-358.	1.0	95
7	Heat pump and PV impact on residential low-voltage distribution grids as a function of building and district properties. Applied Energy, 2017, 192, 268-281.	5.1	94
8	Energy and comfort performance of thermally activated building systems including occupant behavior. Building and Environment, 2011, 46, 835-848.	3.0	93
9	Implementation and verification of the IDEAS building energy simulation library. Journal of Building Performance Simulation, 2018, 11, 669-688.	1.0	90
10	Strategies to improve the energy performance of multiple-skin facades. Building and Environment, 2008, 43, 638-650.	3.0	77
11	Modelling uncertainty in district energy simulations by stochastic residential occupant behaviour. Journal of Building Performance Simulation, 2016, 9, 431-447.	1.0	76
12	Energy Performance Assessment of Multiple-Skin Facades. HVAC and R Research, 2003, 9, 167-185.	0.9	66
13	An automated IFC-based workflow for building energy performance simulation with Modelica. Automation in Construction, 2018, 91, 166-181.	4.8	64
14	Rule-based demand-side management of domestic hot water production with heat pumps in zero energy neighbourhoods. Journal of Building Performance Simulation, 2014, 7, 271-288.	1.0	60
15	A combined scientometric and conventional literature review to grasp the entire BIM knowledge and its integration with energy simulation. Journal of Building Engineering, 2019, 22, 513-527.	1.6	57
16	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mrow><mml:msub><mml:mrow><mml:mi mathvariant="normal">CO</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mm cost of residential heat pumps with active demand response: demand- and supply-side effects. Applied Energy, 2015, 156, 490-501.	5.1	56
17	The inlet temperature as a boundary condition for multiple-skin facade modelling. Energy and Buildings, 2004, 36, 825-835.	3.1	44
18	Assessment of approaches for modeling louver shading devices in building energy simulation programs. Energy and Buildings, 2013, 60, 286-297.	3.1	35

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19	An auto-deployed model-based fault detection and diagnosis approach for Air Handling Units using BIM and Modelica. Automation in Construction, 2018, 96, 508-526.	4.8	33
20	Model selection for continuous commissioning of HVAC-systems in office buildings: A review. Renewable and Sustainable Energy Reviews, 2017, 76, 673-686.	8.2	32
21	Economic impact of persistent sensor and actuator faults in concrete core activated office buildings. Energy and Buildings, 2017, 142, 111-127.	3.1	30
22	A building clustering approach for urban energy simulations. Energy and Buildings, 2020, 208, 109671.	3.1	30
23	Impact of building geometry description within district energy simulations. Energy, 2018, 158, 1060-1069.	4.5	27
24	Automated grey box model implementation using BIM and Modelica. Energy and Buildings, 2019, 188-189, 209-225.	3.1	26
25	Understanding the behaviour of naturally-ventilated BIPV modules: A sensitivity analysis. Renewable Energy, 2020, 161, 133-148.	4.3	25
26	Simulating building integrated photovoltaic facades: Comparison to experimental data and evaluation of modelling complexity. Applied Energy, 2021, 281, 116032.	5.1	25
27	A physics-based high-resolution BIPV model for building performance simulations. Solar Energy, 2020, 204, 585-599.	2.9	24
28	Feasibility assessment of passive cooling for office buildings in a temperate climate through uncertainty analysis. Building and Environment, 2012, 56, 95-107.	3.0	23
29	Experimental Evaluation of Airflow in Naturally Ventilated Active Envelopes. Journal of Thermal Envelope and Building Science, 2001, 25, 101-127.	0.5	21
30	Assessment of the physical part of the temperature takeback for residential retrofits. Energy and Buildings, 2012, 52, 112-121.	3.1	21
31	Embedded BIPV module-level DC/DC converters: Classification of optimal ratings. Renewable Energy, 2020, 146, 880-889.	4.3	21
32	IBPSA Project 1: BIM/GIS and Modelica framework for building and community energy system design and operation â€“ ongoing developments, lessons learned and challenges. IOP Conference Series: Earth and Environmental Science, 2019, 323, 012114.	0.2	19
33	Modeling and validation of a DC/DC power converter for building energy simulations: Application to BIPV systems. Applied Energy, 2019, 240, 646-665.	5.1	19
34	A probabilistic building characterization method for district energy simulations. Energy and Buildings, 2021, 230, 110566.	3.1	19
35	Grid impact indicators for active building simulation. , 2011, , .		18
36	Numerical sensitivity study of transient surface convection during night cooling. Energy and Buildings, 2012, 53, 85-95.	3.1	18

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37	Performance of building integrated photovoltaic facades: Impact of exterior convective heat transfer. Applied Energy, 2021, 287, 116538.	5.1	18
38	Comfort requirements versus lived experience: combining different research approaches to indoor environmental quality. Architectural Science Review, 2020, 63, 316-324.	1.1	16
39	Electrical system architectures for building-integrated photovoltaics: A comparative analysis using a modelling framework in Modelica. Applied Energy, 2020, 261, 114247.	5.1	16
40	The Impact of Load Profile on the Grid-Interaction of Building Integrated Photovoltaic (BIPV) Systems in Low-Energy Dwellings. Journal of Green Building, 2010, 5, 137-147.	0.4	15
41	Demonstration of an MPC framework for all-air systems in non-residential buildings. Building and Environment, 2022, 217, 109053.	3.0	15
42	Numerical study of convection during night cooling and the implications for convection modeling in Building Energy Simulation models. Energy and Buildings, 2013, 64, 41-52.	3.1	14
43	Evaluation of the accuracy of the implementation of dynamic effects in the quasi steady-state calculation method for school buildings. Energy and Buildings, 2013, 65, 173-184.	3.1	13
44	Towards the characterization of the heat loss coefficient via on-board monitoring: Physical interpretation of ARX model coefficients. Energy and Buildings, 2019, 195, 180-194.	3.1	12
45	Assessment of data analysis methods to identify the heat loss coefficient from on-board monitoring data. Energy and Buildings, 2020, 209, 109706.	3.1	12
46	Time-dependent solar aperture estimation of a building: Comparing grey-box and white-box approaches. Renewable and Sustainable Energy Reviews, 2022, 161, 112337.	8.2	12
47	Sensitivity of Characterizing the Heat Loss Coefficient through On-Board Monitoring: A Case Study Analysis. Energies, 2019, 12, 3322.	1.6	11
48	Impact of residential low-carbon technologies on low-voltage grid reinforcements. Applied Energy, 2021, 297, 117057.	5.1	11
49	Reprint of â€œAssessment of approaches for modeling louver shading devices in building energy simulation programsâ€• Energy and Buildings, 2014, 68, 799-810.	3.1	10
50	Analysis of the influence of the definition of the interior dwelling temperature on the characterization of the heat loss coefficient via on-board monitoring. Energy and Buildings, 2020, 215, 109860.	3.1	10
51	Estimating dynamic solar gains from on-site measured data: An ARX modelling approach. Applied Energy, 2022, 321, 119278.	5.1	10
52	Identification of the Building Envelope Performance of a Residential Building: A Case Study. Energies, 2020, 13, 2469.	1.6	8
53	Analysing modelling challenges of smart controlled ventilation systems in educational buildings. Journal of Building Performance Simulation, 2021, 14, 116-131.	1.0	8
54	Comparing statistical modeling techniques for heat loss coefficient estimation using in-situ data. Journal of Physics: Conference Series, 2021, 2069, 012101.	0.3	8

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55	A simulation exercise to improve building energy performance characterization via on-board monitoring. Energy Procedia, 2017, 132, 969-974.	1.8	7
56	Impact of spatial accuracy on district energy simulations. Energy Procedia, 2017, 132, 561-566.	1.8	7
57	Towards metamodeling the neighborhood-level grid impact of low-carbon technologies. Energy and Buildings, 2019, 194, 273-288.	3.1	7
58	Experimental analysis of indoor temperature of residential buildings as an input for building simulation tools. Energy Procedia, 2017, 132, 123-128.	1.8	6
59	Reliability Comparison of a DC-DC Converter Placed in Building-Integrated Photovoltaic Module Frames. , 2018, , .		6
60	Analysis of Building Parameter Uncertainty in District Heating for Optimal Control of Network Flexibility. Energies, 2020, 13, 6220.	1.6	6
61	Impact of the Heat Emission System on the Identification of Grey-box Models for Residential Buildings. Energy Procedia, 2015, 78, 3300-3305.	1.8	5
62	Assessing scalability of a low-voltage distribution grid co-simulation through functional mock-up interface. Journal of Building Performance Simulation, 2019, 12, 637-649.	1.0	5
63	Mapping the pitfalls in the characterisation of the heat loss coefficient from on-board monitoring data using ARX models. Energy and Buildings, 2019, 197, 214-228.	3.1	4
64	Aggregating set-point temperature profiles for archetype-based: simulations of the space heat demand within residential districts. Journal of Building Performance Simulation, 2020, 13, 285-300.	1.0	4
65	The definition of representative boundary conditions for Flemish schools for use in energy assessment methods. Energy and Buildings, 2015, 87, 1-13.	3.1	3
66	Comparison of model identification techniques for MPC in all-air HVAC systems in an educational building. E3S Web of Conferences, 2019, 111, 01053.	0.2	3
67	Towards a DESTEST: a District Energy Simulation Test Developed in IBPSA Project 1. , 0, , .		3
68	Integrating occupant behaviour in the simulation of coupled electric and thermal systems in buildings. , 2011, , .		3
69	A probabilistic approach to include the overall efficiency of gas-fired heating systems in urban building energy modelling. Journal of Physics: Conference Series, 2021, 2069, 012105.	0.3	3
70	Quantifying Uncertainty Propagation For The District Energy Demand Using Realistic Variations On Input Data. , 0, , .		3
71	Discrepancies between predicted and actual indoor environmental (dis)comfort: the role of hospitalized patientsâ€™ adaptation strategies. Building Research and Information, 2022, 50, 792-809.	2.0	3
72	Patient well-being, adaptation of and to indoor conditions, and hospital room design: two mixed methods case studies. Building Research and Information, 2022, 50, 105-133.	2.0	3

#	Article	IF	Citations
73	Performance of BIPV modules under different climatic conditions. WEENTECH Proceedings in Energy, 0, , 107-115.	0.0	2
74	Metamodeling energy indicators in neighborhoods with growing deployment of heat pumps and rooftop photovoltaics. Energy Procedia, 2017, 132, 555-560.	1.8	1
75	Optimal operation of building microgrids â€“ comparison with mixed-integer linear and continuous non-linear programming approaches. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2018, 37, 603-616.	0.5	1
76	Modelling of a naturally ventilated BIPV system for building energy simulations. , 2018, , .		1
77	Evaluation of a Simplified Calculation Approach for Final Heating Energy Use in Non-residential Buildings. Energy, Environment, and Sustainability, 2019, , 139-164.	0.6	1
78	Evaluating Energy and Flexibility Performance of Building Clusters. , 0, , .		1
79	Cross-industry Multi-domain Modelling Language Applications for Building Simulation. Journal of Building Performance Simulation, 2014, 7, 251-252.	1.0	0
80	A Data-Driven Approach to Assessing and Improving Stochastic Residential Load Modeling for District-Level Simulations and PV Integration. , 2020, , .		0
81	Implementation of MPC for an all-air system in an educational building. E3S Web of Conferences, 2021, 246, 11007.	0.2	0
82	The Influence of Convection on the Behaviour of a Ventilated BIPV Module: A Sensitivity Analysis. , 0, , .		0
83	Multi-Scale Simulation Thermo-Chemical District Network. , 0, , .		0