

James E Braun

List of Publications by Year in descending order

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106
papers

3,098
citations

186265

28
h-index

182427

51
g-index

107
all docs

107
docs citations

107
times ranked

1450
citing authors

#	ARTICLE	IF	CITATIONS
1	An Inverse Gray-Box Model for Transient Building Load Prediction. HVAC and R Research, 2002, 8, 73-99.	0.6	247
2	Mathematical modeling of scroll compressorsâ€™ part I: compression process modeling. International Journal of Refrigeration, 2002, 25, 731-750.	3.4	174
3	Evaluating the Performance of Building Thermal Mass Control Strategies. HVAC and R Research, 2001, 7, 403-428.	0.6	131
4	Model-based demand-limiting control of building thermal mass. Building and Environment, 2008, 43, 1633-1646.	6.9	129
5	Common Faults and Their Impacts for Rooftop Air Conditioners. HVAC and R Research, 1998, 4, 303-318.	0.6	125
6	Mathematical modeling of scroll compressorsâ€™ part II: overall scroll compressor modeling. International Journal of Refrigeration, 2002, 25, 751-764.	3.4	105
7	A comparison of moving-boundary and finite-volume formulations for transients in centrifugal chillers. International Journal of Refrigeration, 2008, 31, 1437-1452.	3.4	101
8	Decoupling features and virtual sensors for diagnosis of faults in vapor compression air conditioners. International Journal of Refrigeration, 2007, 30, 546-564.	3.4	91
9	Evaluation of the impacts of refrigerant charge on air conditioner and heat pump performance. International Journal of Refrigeration, 2012, 35, 1805-1814.	3.4	88
10	A Methodology for Diagnosing Multiple Simultaneous Faults in Vapor-Compression Air Conditioners. HVAC and R Research, 2007, 13, 369-395.	0.6	84
11	Development of methods for determining demand-limiting setpoint trajectories in buildings using short-term measurements. Building and Environment, 2008, 43, 1755-1768.	6.9	65
12	Development, Evaluation, and Demonstration of a Virtual Refrigerant Charge Sensor. HVAC and R Research, 2009, 15, 117-136.	0.6	62
13	Experimental and numerical analyses of a 5 kW _e oil-free open-drive scroll expander for small-scale organic Rankine cycle (ORC) applications. Applied Energy, 2018, 230, 1140-1156.	10.1	58
14	Review of Modern Spacecraft Thermal Control Technologies. HVAC and R Research, 2010, 16, 189-220.	0.6	55
15	Evaluating the Performance of a Fault Detection and Diagnostic System for Vapor Compression Equipment. HVAC and R Research, 1998, 4, 401-425.	0.6	51
16	The impact of fouling on the performance of filterâ€™evaporator combinations. International Journal of Refrigeration, 2007, 30, 489-498.	3.4	47
17	Development and Evaluation of a Rule-Based Control Strategy for Ice Storage Systems. HVAC and R Research, 1996, 2, 312-334.	0.6	45
18	A Simplified Method for Determining Optimal Cooling Control Strategies for Thermal Storage in Building Mass. HVAC and R Research, 1996, 2, 59-78.	0.6	44

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19	Characterizing heat transfer coefficients for heat exchangers in standing wave thermoacoustic coolers. <i>Journal of the Acoustical Society of America</i> , 2005, 118, 2271-2280.	1.1	43
20	Evaluation of methods for determining demand-limiting setpoint trajectories in buildings using short-term measurements. <i>Building and Environment</i> , 2008, 43, 1769-1783.	6.9	40
21	Liquid-flooded compression and expansion in scroll machines – Part I: Model development. <i>International Journal of Refrigeration</i> , 2012, 35, 1878-1889.	3.4	37
22	Evaluating the performance of fault detection and diagnostics protocols applied to air-cooled unitary air-conditioning equipment. <i>HVAC and R Research</i> , 2013, 19, 882-891.	0.6	37
23	Intelligent Building Systems - Past, Present, and Future. <i>Proceedings of the American Control Conference</i> , 2007, , .	0.0	36
24	The impact of evaporator fouling and filtration on the performance of packaged air conditioners. <i>International Journal of Refrigeration</i> , 2007, 30, 506-514.	3.4	36
25	Virtual Refrigerant Pressure Sensors for Use in Monitoring and Fault Diagnosis of Vapor-Compression Equipment. <i>HVAC and R Research</i> , 2009, 15, 597-616.	0.6	32
26	Extension of a virtual refrigerant charge sensor. <i>International Journal of Refrigeration</i> , 2015, 55, 224-235.	3.4	32
27	Simulation of fault impacts for vapor compression systems by inverse modeling. Part I: Component modeling and validation. <i>HVAC and R Research</i> , 2013, 19, 892-906.	0.6	30
28	Simulation of fault impacts for vapor compression systems by inverse modeling. Part II: System modeling and validation. <i>HVAC and R Research</i> , 2013, 19, 907-921.	0.6	30
29	A computationally efficient hybrid leakage model for positive displacement compressors and expanders. <i>International Journal of Refrigeration</i> , 2013, 36, 1965-1973.	3.4	29
30	A generalized moving-boundary algorithm to predict the heat transfer rate of counterflow heat exchangers for any phase configuration. <i>Applied Thermal Engineering</i> , 2015, 79, 192-201.	6.0	29
31	Development and a Validation of a Charge Sensitive Organic Rankine Cycle (ORC) Simulation Tool. <i>Energies</i> , 2016, 9, 389.	3.1	29
32	Performance of vapor compression systems with compressor oil flooding and regeneration. <i>International Journal of Refrigeration</i> , 2011, 34, 225-233.	3.4	28
33	Liquid flooded compression and expansion in scroll machines – Part II: Experimental testing and model validation. <i>International Journal of Refrigeration</i> , 2012, 35, 1890-1900.	3.4	28
34	Performance evaluation of a virtual refrigerant charge sensor. <i>International Journal of Refrigeration</i> , 2013, 36, 1130-1141.	3.4	28
35	A general approach for generating reduced-order models for large multi-zone buildings. <i>Journal of Building Performance Simulation</i> , 2015, 8, 435-448.	2.0	28
36	Modeling of Area-Constrained Ice Storage Tanks. <i>HVAC and R Research</i> , 1995, 1, 143-158.	0.6	27

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37	Comprehensive analytic solutions for the geometry of symmetric constant-wall-thickness scroll machines. <i>International Journal of Refrigeration</i> , 2014, 45, 223-242.	3.4	27
38	Review of modelling approaches for passive ceiling cooling systems. <i>Journal of Building Performance Simulation</i> , 2015, 8, 145-172.	2.0	27
39	Theoretical analysis of dynamic characteristics in linear compressors. <i>International Journal of Refrigeration</i> , 2020, 109, 114-127.	3.4	27
40	PDSim: A general quasi-steady modeling approach for positive displacement compressors and expanders. <i>International Journal of Refrigeration</i> , 2020, 110, 310-322.	3.4	27
41	Review and update on the geometry modeling of single-screw machines with emphasis on expanders. <i>International Journal of Refrigeration</i> , 2018, 92, 10-26.	3.4	25
42	Development and evaluation of virtual refrigerant mass flow sensors for fault detection and diagnostics. <i>International Journal of Refrigeration</i> , 2016, 63, 184-198.	3.4	24
43	Modeling of a Two-Stage Rotary Compressor. <i>HVAC and R Research</i> , 2008, 14, 719-748.	0.6	23
44	Experimental analysis of oil flooded R410A scroll compressor. <i>International Journal of Refrigeration</i> , 2014, 46, 185-195.	3.4	23
45	General approaches for determining the savings potential of optimal control for cooling in commercial buildings having both energy and demand charges. <i>Science and Technology for the Built Environment</i> , 2016, 22, 733-750.	1.7	22
46	Development and evaluation of a generalized rule-based control strategy for residential ice storage systems. <i>Energy and Buildings</i> , 2019, 197, 99-111.	6.7	22
47	PDSim: Demonstrating the capabilities of an open-source simulation framework for positive displacement compressors and expanders. <i>International Journal of Refrigeration</i> , 2020, 110, 323-339.	3.4	22
48	Fault Detection and Diagnostics for Commercial Coolers and Freezers. <i>HVAC and R Research</i> , 2009, 15, 77-99.	0.6	21
49	Representing Small Commercial Building Faults in EnergyPlus, Part I: Model Development. <i>Buildings</i> , 2019, 9, 233.	3.1	21
50	Development, implementation, and evaluation of a fault detection and diagnostics system based on integrated virtual sensors and fault impact models. <i>Energy and Buildings</i> , 2020, 228, 110368.	6.7	21
51	Experimental testing of an oil-flooded hermetic scroll compressor. <i>International Journal of Refrigeration</i> , 2013, 36, 1866-1873.	3.4	20
52	Semi-empirical modeling and analysis of oil flooded R410A scroll compressors with liquid injection for use in vapor compression systems. <i>International Journal of Refrigeration</i> , 2016, 66, 50-63.	3.4	19
53	A Smart Mixed-Air Temperature Sensor. <i>HVAC and R Research</i> , 2009, 15, 101-115.	0.6	18
54	Concentrated radiative cooling. <i>Applied Energy</i> , 2022, 310, 118368.	10.1	18

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55	A general method for calculating the uncertainty of virtual sensors for packaged air conditioners. International Journal of Refrigeration, 2016, 63, 225-236.	3.4	16
56	Thermodynamic analysis of a liquid-flooded Ericsson cycle cooler. International Journal of Refrigeration, 2007, 30, 1176-1186.	3.4	15
57	Experimental investigation of a liquid-flooded Ericsson cycle cooler. International Journal of Refrigeration, 2008, 31, 1241-1252.	3.4	15
58	Optimization of a scroll compressor for liquid flooding. International Journal of Refrigeration, 2012, 35, 1901-1913.	3.4	15
59	Performance analysis of liquid flooded compression with regeneration for cold climate heat pumps. International Journal of Refrigeration, 2016, 68, 50-58.	3.4	15
60	Assessments of demand response potential in small commercial buildings across the United States. Science and Technology for the Built Environment, 2019, 25, 1437-1455.	1.7	15
61	Load-based testing methodology for fixed-speed and variable-speed unitary air conditioning equipment. Science and Technology for the Built Environment, 2019, 25, 233-244.	1.7	14
62	Review of vapor compression refrigeration in microgravity environments. International Journal of Refrigeration, 2021, 123, 169-179.	3.4	14
63	Minimizing Operating Costs of Vapor Compression Equipment with Optimal Service Scheduling. HVAC and R Research, 1996, 2, 3-25.	0.6	13
64	Component-based, gray-box modeling of ductless multi-split heat pump systems. International Journal of Refrigeration, 2014, 38, 30-45.	3.4	13
65	Virtual sensors for rooftop unit air-side diagnostics. Science and Technology for the Built Environment, 2016, 22, 189-200.	1.7	13
66	Modeling of a novel spool compressor with multiple vapor refrigerant injection ports. International Journal of Refrigeration, 2013, 36, 1982-1997.	3.4	12
67	Performance comparisons for variable-speed ductless and single-speed ducted residential heat pumps. International Journal of Refrigeration, 2014, 47, 15-25.	3.4	12
68	A multi-agent control based demand response strategy for multi-zone buildings. , 2016, , .		12
69	Modifying the Surface Chemistry and Nanostructure of Carbon Nanotubes Facilitates the Detection of Aromatic Hydrocarbon Gases. ACS Applied Nano Materials, 2020, 3, 10389-10398.	5.0	12
70	A Method for Tuning Refrigerant Charge in Modeling Off-Design Performance of Unitary Equipment (RP-1173). HVAC and R Research, 2006, 12, 429-449.	0.6	11
71	Analysis of an organic Rankine cycle with liquid-flooded expansion and internal regeneration (ORCLFE). Energy, 2018, 144, 1092-1106.	8.8	11
72	Automated laboratory load-based testing and performance rating of residential cooling equipment. International Journal of Refrigeration, 2021, 123, 124-137.	3.4	11

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73	MySmartE – An eco-feedback and gaming platform to promote energy conserving thermostat-adjustment behaviors in multi-unit residential buildings. <i>Building and Environment</i> , 2022, 221, 109252.	6.9	11
74	Modeling of Hermetic Scroll Compressors: Model Development. <i>HVAC and R Research</i> , 2004, 10, 129-152.	0.6	10
75	Representing Small Commercial Building Faults in EnergyPlus, Part II: Model Validation. <i>Buildings</i> , 2019, 9, 239.	3.1	10
76	Experimental validation and sensitivity analysis of a dynamic simulation model for linear compressors. <i>International Journal of Refrigeration</i> , 2020, 117, 369-380.	3.4	10
77	Reducing Peak Cooling Loads through Model-Based Control of Zone Temperature Setpoints. <i>Proceedings of the American Control Conference</i> , 2007, , .	0.0	9
78	Thermodynamic comparison of organic Rankine cycles employing liquid-flooded expansion or a solution circuit. <i>Applied Thermal Engineering</i> , 2013, 61, 859-865.	6.0	9
79	Manipulating polymer composition to create low-cost, high-fidelity sensors for indoor CO ₂ monitoring. <i>Scientific Reports</i> , 2021, 11, 13237.	3.3	9
80	Evaluation of Vortex-Shedding Flow Meters for Monitoring Air Flows in HVAC Applications. <i>HVAC and R Research</i> , 1995, 1, 282-305.	0.6	7
81	A generalized control heuristic and simplified model predictive control strategy for direct-expansion air-conditioning systems. <i>Science and Technology for the Built Environment</i> , 2015, 21, 773-788.	1.7	7
82	Compressor driven metal hydride heat pumps using an adsorptive slurry and isothermal compression. <i>Science and Technology for the Built Environment</i> , 2016, 22, 565-575.	1.7	7
83	Minimizing data collection for field calibration of steady-state virtual sensors for HVAC equipment. <i>International Journal of Refrigeration</i> , 2016, 69, 96-105.	3.4	7
84	An empirical model for simulating the effects of refrigerant charge faults on air conditioner performance. <i>Science and Technology for the Built Environment</i> , 2017, 23, 776-786.	1.7	6
85	Techno-economic analysis of metal-hydride energy storage to enable year-round load-shifting for residential heat pumps. <i>Energy and Buildings</i> , 2022, 256, 111700.	6.7	6
86	Application of a hybrid control of expansion valves to a domestic heat pump and a walk-in cooler refrigeration system. <i>HVAC and R Research</i> , 2013, 19, 800-813.	0.6	5
87	Vapor compression refrigeration testing on parabolic flights: Part 1 - cycle stability. <i>International Journal of Refrigeration</i> , 2022, 136, 152-161.	3.4	5
88	Phase of acoustic impedance and performance of standing wave thermoacoustic coolers. <i>Journal of Mechanical Science and Technology</i> , 2009, 23, 1476-1484.	1.5	4
89	Performance mapping for variable-speed ductless heat pump systems in heating and defrost operation. <i>HVAC and R Research</i> , 2014, 20, 545-558.	0.6	4
90	Development of a virtual EXV flow sensor for applications with two-phase flow inlet conditions. <i>International Journal of Refrigeration</i> , 2014, 45, 243-250.	3.4	4

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91	Non-symmetric approach to single-screw expander and compressor modeling. IOP Conference Series: Materials Science and Engineering, 2017, 232, 012076.	0.6	4
92	Load-based testing using a thermostat environment emulator. International Journal of Refrigeration, 2021, 126, 109-122.	3.4	4
93	A methodology for mapping the performance of variable-speed residential cooling equipment using load-based testing. International Journal of Refrigeration, 2021, 132, 133-144.	3.4	4
94	Performance characterization of a small-capacity thermoacoustic cooler for air-conditioning applications. Journal of Mechanical Science and Technology, 2010, 24, 1781-1791.	1.5	3
95	Dynamic programming based approaches to optimal rooftop unit coordination. Science and Technology for the Built Environment, 2015, 21, 752-760.	1.7	3
96	A comparative study of multi-agent control approaches for optimization of central cooling systems without significant storage. Science and Technology for the Built Environment, 2020, 26, 1065-1081.	1.7	3
97	A Carbon Nanotube-Functional Polymer Composite Film for Low-Power Indoor CO ₂ Monitoring. IEEE Sensors Journal, 2022, 22, 11233-11240.	4.7	3
98	Methodology to assess "no-touch" building audit software using simulated utility data. Science and Technology for the Built Environment, 2020, 26, 873-887.	1.7	2
99	Proper orthogonal decomposition for reduced order dynamic modeling of vapor compression systems. International Journal of Refrigeration, 2021, 132, 145-155.	3.4	2
100	Hierarchical Model Predictive Control Approach for Optimal Demand Response for Small/Medium-sized Commercial Buildings. , 2018, , .		1
101	A near-optimal control algorithm for central cooling plants with electric and/or gas-driven chillers. Science and Technology for the Built Environment, 2020, 26, 1132-1150.	1.7	1
102	Sorption Kinetics of Poly(ethyleneimine)-Poly(ethylene Oxide) Blends and the Implication for Low-Cost, Small-Scale CO ₂ Sensors. ACS Applied Polymer Materials, 2022, 4, 4389-4397.	4.4	1
103	Editorial: Smart HVAC&R Equipment "Coming to a Building Near You?. HVAC and R Research, 2009, 15, 1-2.	0.6	0
104	Modeling high-performance buildings. HVAC and R Research, 2011, 17, 231-234.	0.6	0
105	An evolving learning method "growing Gaussian mixture regression" for modeling passive chilled beam systems in buildings. Energy and Buildings, 2022, 268, 112227.	6.7	0
106	Comparing the economic performance of ice storage and batteries for buildings with on-site PV through model predictive control and optimal sizing. Journal of Building Performance Simulation, 2022, 15, 691-715.	2.0	0