James E Braun

List of Publications by Year
in descending order

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	A Carbon Nanotube-Functional Polymer Composite Film for Low-Power Indoor CO₂ Monitoring. IEEE Sensors Journal, 2022, 22, 11233-11240.	4.7	3
2	Techno-economic analysis of metal-hydride energy storage to enable year-round load-shifting for residential heat pumps. Energy and Buildings, 2022, 256, 111700.	6.7	6
3	Vapor compression refrigeration testing on parabolic flights: Part 1 - cycle stability. International Journal of Refrigeration, 2022, 136, 152-161.	3.4	5
4	Concentrated radiative cooling. Applied Energy, 2022, 310, 118368.	10.1	18
5	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
6	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
7	MySmartE – An eco-feedback and gaming platform to promote energy conserving thermostat-adjustment behaviors in multi-unit residential buildings. Building and Environment, 2022, 221, 109252.	6.9	11
8	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
9	Review of vapor compression refrigeration in microgravity environments. International Journal of Refrigeration, 2021, 123, 169-179.	3.4	14
10	Automated laboratory load-based testing and performance rating of residential cooling equipment. International Journal of Refrigeration, 2021, 123, 124-137.	3.4	11
11	Load-based testing using a thermostat environment emulator. International Journal of Refrigeration, 2021, 126, 109-122.	3.4	4
12	Manipulating polymer composition to create low-cost, high-fidelity sensors for indoor CO2 monitoring. Scientific Reports, 2021, 11, 13237.	3.3	9
13	Proper orthogonal decomposition for reduced order dynamic modeling of vapor compression systems. International Journal of Refrigeration, 2021, 132, 145-155.	3.4	2
14	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
15	PDSim: Demonstrating the capabilities of an open-source simulation framework for positive displacement compressors and expanders. International Journal of Refrigeration, 2020, 110, 323-339.	3.4	22
16	Theoretical analysis of dynamic characteristics in linear compressors. International Journal of Refrigeration, 2020, 109, 114-127.	3.4	27
17	PDSim: A general quasi-steady modeling approach for positive displacement compressors and expanders. International Journal of Refrigeration, 2020, 110, 310-322.	3.4	27
18	Development, implementation, and evaluation of a fault detection and diagnostics system based on integrated virtual sensors and fault impact models. Energy and Buildings, 2020, 228, 110368.	6.7	21

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19	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
20	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
21	Experimental validation and sensitivity analysis of a dynamic simulation model for linear compressors. International Journal of Refrigeration, 2020, 117, 369-380.	3.4	10
22	Methodology to assess â€œno-touchâ€•building audit software using simulated utility data. Science and Technology for the Built Environment, 2020, 26, 873-887.	1.7	2
23	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
24	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
25	Development and evaluation of a generalized rule-based control strategy for residential ice storage systems. Energy and Buildings, 2019, 197, 99-111.	6.7	22
26	Representing Small Commercial Building Faults in EnergyPlus, Part II: Model Validation. Buildings, 2019, 9, 239.	3.1	10
27	Representing Small Commercial Building Faults in EnergyPlus, Part I: Model Development. Buildings, 2019, 9, 233.	3.1	21
28	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
29	Analysis of an organic Rankine cycle with liquid-flooded expansion and internal regeneration (ORCLFE). Energy, 2018, 144, 1092-1106.	8.8	11
30	Hierarchical Model Predictive Control Approach for Optimal Demand Response for Small/Medium-sized Commercial Buildings. , 2018, , .		1
31	Experimental and numerical analyses of a 5 kWe oil-free open-drive scroll expander for small-scale organic Rankine cycle (ORC) applications. Applied Energy, 2018, 230, 1140-1156.	10.1	58
32	Review and update on the geometry modeling of single-screw machines with emphasis on expanders. International Journal of Refrigeration, 2018, 92, 10-26.	3.4	25
33	An empirical model for simulating the effects of refrigerant charge faults on air conditioner performance. Science and Technology for the Built Environment, 2017, 23, 776-786.	1.7	6
34	Non-symmetric approach to single-screw expander and compressor modeling. IOP Conference Series: Materials Science and Engineering, 2017, 232, 012076.	0.6	4
35	Development and a Validation of a Charge Sensitive Organic Rankine Cycle (ORC) Simulation Tool. Energies, 2016, 9, 389.	3.1	29
36	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

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37	Performance analysis of liquid flooded compression with regeneration for cold climate heat pumps. International Journal of Refrigeration, 2016, 68, 50-58.	3.4	15
38	General approaches for determining the savings potential of optimal control for cooling in commercial buildings having both energy and demand charges. Science and Technology for the Built Environment, 2016, 22, 733-750.	1.7	22
39	A multi-agent control based demand response strategy for multi-zone buildings. , 2016, , .		12
40	Compressor driven metal hydride heat pumps using an adsorptive slurry and isothermal compression. Science and Technology for the Built Environment, 2016, 22, 565-575.	1.7	7
41	Minimizing data collection for field calibration of steady-state virtual sensors for HVAC equipment. International Journal of Refrigeration, 2016, 69, 96-105.	3.4	7
42	Development and evaluation of virtual refrigerant mass flow sensors for fault detection and diagnostics. International Journal of Refrigeration, 2016, 63, 184-198.	3.4	24
43	Semi-empirical modeling and analysis of oil flooded R410A scroll compressors with liquid injection for use in vapor compression systems. International Journal of Refrigeration, 2016, 66, 50-63.	3.4	19
44	Virtual sensors for rooftop unit air-side diagnostics. Science and Technology for the Built Environment, 2016, 22, 189-200.	1.7	13
45	A generalized control heuristic and simplified model predictive control strategy for direct-expansion air-conditioning systems. Science and Technology for the Built Environment, 2015, 21, 773-788.	1.7	7
46	Extension of a virtual refrigerant charge sensor. International Journal of Refrigeration, 2015, 55, 224-235.	3.4	32
47	Dynamic programming based approaches to optimal rooftop unit coordination. Science and Technology for the Built Environment, 2015, 21, 752-760.	1.7	3
48	A general approach for generating reduced-order models for large multi-zone buildings. Journal of Building Performance Simulation, 2015, 8, 435-448.	2.0	28
49	Review of modelling approaches for passive ceiling cooling systems. Journal of Building Performance Simulation, 2015, 8, 145-172.	2.0	27
50	A generalized moving-boundary algorithm to predict the heat transfer rate of counterflow heat exchangers for any phase configuration. Applied Thermal Engineering, 2015, 79, 192-201.	6.0	29
51	Performance mapping for variable-speed ductless heat pump systems in heating and defrost operation. HVAC and R Research, 2014, 20, 545-558.	0.6	4
52	Component-based, gray-box modeling of ductless multi-split heat pump systems. International Journal of Refrigeration, 2014, 38, 30-45.	3.4	13
53	Comprehensive analytic solutions for the geometry of symmetric constant-wall-thickness scroll machines. International Journal of Refrigeration, 2014, 45, 223-242.	3.4	27
54	Experimental analysis of oil flooded R410A scroll compressor. International Journal of Refrigeration, 2014, 46, 185-195.	3.4	23

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55	Performance comparisons for variable-speed ductless and single-speed ducted residential heat pumps. International Journal of Refrigeration, 2014, 47, 15-25.	3.4	12
56	Development of a virtual EXV flow sensor for applications with two-phase flow inlet conditions. International Journal of Refrigeration, 2014, 45, 243-250.	3.4	4
57	Modeling of a novel spool compressor with multiple vapor refrigerant injection ports. International Journal of Refrigeration, 2013, 36, 1982-1997.	3.4	12
58	A computationally efficient hybrid leakage model for positive displacement compressors and expanders. International Journal of Refrigeration, 2013, 36, 1965-1973.	3.4	29
59	Experimental testing of an oil-flooded hermetic scroll compressor. International Journal of Refrigeration, 2013, 36, 1866-1873.	3.4	20
60	Application of a hybrid control of expansion valves to a domestic heat pump and a walk-in cooler refrigeration system. HVAC and R Research, 2013, 19, 800-813.	0.6	5
61	Evaluating the performance of fault detection and diagnostics protocols applied to air-cooled unitary air-conditioning equipment. HVAC and R Research, 2013, 19, 882-891.	0.6	37
62	Thermodynamic comparison of organic Rankine cycles employing liquid-flooded expansion or a solution circuit. Applied Thermal Engineering, 2013, 61, 859-865.	6.0	9
63	Performance evaluation of a virtual refrigerant charge sensor. International Journal of Refrigeration, 2013, 36, 1130-1141.	3.4	28
64	Simulation of fault impacts for vapor compression systems by inverse modeling. Part I: Component modeling and validation. HVAC and R Research, 2013, 19, 892-906.	0.6	30
65	Simulation of fault impacts for vapor compression systems by inverse modeling. Part II: System modeling and validation. HVAC and R Research, 2013, 19, 907-921.	0.6	30
66	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
67	Liquid flooded compression and expansion in scroll machines – Part II: Experimental testing and model validation. International Journal of Refrigeration, 2012, 35, 1890-1900.	3.4	28
68	Liquid-flooded compression and expansion in scroll machines – Part I: Model development. International Journal of Refrigeration, 2012, 35, 1878-1889.	3.4	37
69	Optimization of a scroll compressor for liquid flooding. International Journal of Refrigeration, 2012, 35, 1901-1913.	3.4	15
70	Modeling high-performance buildings. HVAC and R Research, 2011, 17, 231-234.	0.6	0
71	Performance of vapor compression systems with compressor oil flooding and regeneration. International Journal of Refrigeration, 2011, 34, 225-233.	3.4	28
72	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

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73	Review of Modern Spacecraft Thermal Control Technologies. HVAC and R Research, 2010, 16, 189-220.	0.6	55
74	Editorial: Smart HVAC&R Equipmentâ€"Coming to a Building Near You?. HVAC and R Research, 2009, 15, 1-2.	0.6	0
75	A Smart Mixed-Air Temperature Sensor. HVAC and R Research, 2009, 15, 101-115.	0.6	18
76	Fault Detection and Diagnostics for Commercial Coolers and Freezers. HVAC and R Research, 2009, 15, 77-99.	0.6	21
77	Virtual Refrigerant Pressure Sensors for Use in Monitoring and Fault Diagnosis of Vapor-Compression Equipment. HVAC and R Research, 2009, 15, 597-616.	0.6	32
78	Development, Evaluation, and Demonstration of a Virtual Refrigerant Charge Sensor. HVAC and R Research, 2009, 15, 117-136.	0.6	62
79	Phase of acoustic impedance and performance of standing wave thermoacoustic coolers. Journal of Mechanical Science and Technology, 2009, 23, 1476-1484.	1.5	4
80	Model-based demand-limiting control of building thermal mass. Building and Environment, 2008, 43, 1633-1646.	6.9	129
81	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
82	Experimental investigation of a liquid-flooded Ericsson cycle cooler. International Journal of Refrigeration, 2008, 31, 1241-1252.	3.4	15
83	Evaluation of methods for determining demand-limiting setpoint trajectories in buildings using short-term measurements. Building and Environment, 2008, 43, 1769-1783.	6.9	40
84	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
85	Modeling of a Two-Stage Rotary Compressor. HVAC and R Research, 2008, 14, 719-748.	0.6	23
86	Reducing Peak Cooling Loads through Model-Based Control of Zone Temperature Setpoints. Proceedings of the American Control Conference, 2007, , .	0.0	9
87	A Methodology for Diagnosing Multiple Simultaneous Faults in Vapor-Compression Air Conditioners. HVAC and R Research, 2007, 13, 369-395.	0.6	84
88	Intelligent Building Systems - Past, Present, and Future. Proceedings of the American Control Conference, 2007, , .	0.0	36
89	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
90	The impact of evaporator fouling and filtration on the performance of packaged air conditioners. International Journal of Refrigeration, 2007, 30, 506-514.	3.4	36

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91	Thermodynamic analysis of a liquid-flooded Ericsson cycle cooler. International Journal of Refrigeration, 2007, 30, 1176-1186.	3.4	15
92	The impact of fouling on the performance of filter–evaporator combinations. International Journal of Refrigeration, 2007, 30, 489-498.	3.4	47
93	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
94	Characterizing heat transfer coefficients for heat exchangers in standing wave thermoacoustic coolers. Journal of the Acoustical Society of America, 2005, 118, 2271-2280.	1.1	43
95	Modeling of Hermetic Scroll Compressors: Model Development. HVAC and R Research, 2004, 10, 129-152.	0.6	10
96	An Inverse Gray-Box Model for Transient Building Load Prediction. HVAC and R Research, 2002, 8, 73-99.	0.6	247
97	Mathematical modeling of scroll compressors–part I: compression process modeling. International Journal of Refrigeration, 2002, 25, 731-750.	3.4	174
98	Mathematical modeling of scroll compressorsÂ– part II: overall scroll compressor modeling. International Journal of Refrigeration, 2002, 25, 751-764.	3.4	105
99	Evaluating the Performance of Building Thermal Mass Control Strategies. HVAC and R Research, 2001, 7, 403-428.	0.6	131
100	Common Faults and Their Impacts for Rooftop Air Conditioners. HVAC and R Research, 1998, 4, 303-318.	0.6	125
101	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
102	Minimizing Operating Costs of Vapor Compression Equipment with Optimal Service Scheduling. HVAC and R Research, 1996, 2, 3-25.	0.6	13
103	Development and Evaluation of a Rule-Based Control Strategy for Ice Storage Systems. HVAC and R Research, 1996, 2, 312-334.	0.6	45
104	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
105	Modeling of Area-Constrained Ice Storage Tanks. HVAC and R Research, 1995, 1, 143-158.	0.6	27
106	Evaluation of Vortex-Shedding Flow Meters for Monitoring Air Flows in HVAC Applications. HVAC and R Research, 1995, 1, 282-305.	0.6	7