

Eckhard A Groll

List of Publications by Year in descending order

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86
papers

2,935
citations

236612

25
h-index

174990

52
g-index

87
all docs

87
docs citations

87
times ranked

1319
citing authors

#	ARTICLE	IF	CITATIONS
1	Transcritical CO ₂ refrigeration cycle with ejector-expansion device. International Journal of Refrigeration, 2005, 28, 766-773.	1.8	284
2	Two-stage air-source heat pump for residential heating and cooling applications in northern U.S. climates. International Journal of Refrigeration, 2008, 31, 1282-1292.	1.8	228
3	Efficiencies of transcritical CO ₂ cycles with and without an expansion turbine. International Journal of Refrigeration, 1998, 21, 577-589.	1.8	224
4	Mathematical modeling of scroll compressors" part I: compression process modeling. International Journal of Refrigeration, 2002, 25, 731-750.	1.8	174
5	New correlation to predict the heat transfer coefficient during in-tube cooling of turbulent supercritical CO ₂ . International Journal of Refrigeration, 2002, 25, 887-895.	1.8	167
6	Refrigerant flow boiling heat transfer in parallel microchannels as a function of local vapor quality. International Journal of Heat and Mass Transfer, 2008, 51, 4775-4787.	2.5	162
7	Review and Comparative Analysis of Studies on Saturated Flow Boiling in Small Channels. Nanoscale and Microscale Thermophysical Engineering, 2008, 12, 187-227.	1.4	113
8	Mathematical modeling of scroll compressors" part II: overall scroll compressor modeling. International Journal of Refrigeration, 2002, 25, 751-764.	1.8	105
9	A comparison of moving-boundary and finite-volume formulations for transients in centrifugal chillers. International Journal of Refrigeration, 2008, 31, 1437-1452.	1.8	101
10	Performance enhancement of CO ₂ air conditioner with a controllable ejector. International Journal of Refrigeration, 2012, 35, 1604-1616.	1.8	87
11	A comprehensive model of a miniature-scale linear compressor for electronics cooling. International Journal of Refrigeration, 2011, 34, 63-73.	1.8	75
12	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.	5.1	58
13	Modeling of a semi-hermetic CO ₂ reciprocating compressor including lubrication submodels for piston rings and bearings. International Journal of Refrigeration, 2013, 36, 1925-1937.	1.8	41
14	A hybrid method for refrigerant flow balancing in multi-circuit evaporators: Upstream versus downstream flow control. International Journal of Refrigeration, 2009, 32, 1271-1282.	1.8	40
15	Review of stationary and transport CO ₂ refrigeration and air conditioning technologies. Applied Thermal Engineering, 2021, 185, 116422.	3.0	40
16	Performance limit for economized cycles with continuous refrigerant injection. International Journal of Refrigeration, 2011, 34, 234-242.	1.8	39
17	Linear compressors for electronics cooling: Energy recovery and its benefits. International Journal of Refrigeration, 2013, 36, 2007-2013.	1.8	38
18	Liquid-flooded compression and expansion in scroll machines " Part I: Model development. International Journal of Refrigeration, 2012, 35, 1878-1889.	1.8	37

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19	Experimental Analysis of the Effects of Particulate Fouling on Heat Exchanger Heat Transfer and Air-Side Pressure Drop for a Hybrid Dry Cooler. <i>Heat Transfer Engineering</i> , 2011, 32, 264-271.	1.2	32
20	A computationally efficient hybrid leakage model for positive displacement compressors and expanders. <i>International Journal of Refrigeration</i> , 2013, 36, 1965-1973.	1.8	29
21	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.	3.0	29
22	Development and a Validation of a Charge Sensitive Organic Rankine Cycle (ORC) Simulation Tool. <i>Energies</i> , 2016, 9, 389.	1.6	29
23	Performance of vapor compression systems with compressor oil flooding and regeneration. <i>International Journal of Refrigeration</i> , 2011, 34, 225-233.	1.8	28
24	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.	1.8	28
25	Evaluation of a hybrid method for refrigerant flow balancing in multi-circuit evaporators. <i>International Journal of Refrigeration</i> , 2009, 32, 1283-1292.	1.8	27
26	Comprehensive analytic solutions for the geometry of symmetric constant-wall-thickness scroll machines. <i>International Journal of Refrigeration</i> , 2014, 45, 223-242.	1.8	27
27	Two-phase injected and vapor-injected compression: Experimental results and mapping correlation for a R-407C scroll compressor. <i>International Journal of Refrigeration</i> , 2018, 86, 449-462.	1.8	27
28	Theoretical analysis of dynamic characteristics in linear compressors. <i>International Journal of Refrigeration</i> , 2020, 109, 114-127.	1.8	27
29	PDSim: A general quasi-steady modeling approach for positive displacement compressors and expanders. <i>International Journal of Refrigeration</i> , 2020, 110, 310-322.	1.8	27
30	Sensitivity analysis of a comprehensive model for a miniature-scale linear compressor for electronics cooling. <i>International Journal of Refrigeration</i> , 2013, 36, 1998-2006.	1.8	25
31	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.	1.8	25
32	Improved methodologies for simulating unitary air conditioners at off-design conditions. <i>International Journal of Refrigeration</i> , 2009, 32, 1837-1849.	1.8	24
33	Variable wall thickness scroll geometry modeling with use of a control volume approach. <i>International Journal of Refrigeration</i> , 2013, 36, 1809-1820.	1.8	24
34	Feasibility study of a bowtie compressor with novel capacity modulation. <i>International Journal of Refrigeration</i> , 2007, 30, 1427-1438.	1.8	23
35	Modeling of a Two-Stage Rotary Compressor. <i>HVAC and R Research</i> , 2008, 14, 719-748.	0.9	23
36	Experimental analysis of oil flooded R410A scroll compressor. <i>International Journal of Refrigeration</i> , 2014, 46, 185-195.	1.8	23

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37	PDSim: Demonstrating the capabilities of an open-source simulation framework for positive displacement compressors and expanders. International Journal of Refrigeration, 2020, 110, 323-339.	1.8	22
38	A comprehensive model of a novel rotating spool compressor. International Journal of Refrigeration, 2013, 36, 1974-1981.	1.8	21
39	Analytical model for an electrostatically actuated miniature diaphragm compressor. Journal of Micromechanics and Microengineering, 2008, 18, 035010.	1.5	20
40	Experimental testing of an oil-flooded hermetic scroll compressor. International Journal of Refrigeration, 2013, 36, 1866-1873.	1.8	20
41	Comparative analysis of battery electric vehicle thermal management systems under long-range drive cycles. Applied Thermal Engineering, 2021, 198, 117506.	3.0	20
42	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.	1.8	19
43	Vapor injected compression with economizing in packaged air conditioning systems for high temperature climate. International Journal of Refrigeration, 2018, 94, 136-150.	1.8	18
44	Theoretical Performance Comparison of CO ₂ Transcritical Cycle Technology Versus HCFC-22 Technology for a Military Packaged Air Conditioner Application. HVAC and R Research, 2000, 6, 325-348.	0.9	16
45	Application of interleaved circuitry to improve evaporator effectiveness and COP of a packaged AC system. International Journal of Refrigeration, 2017, 79, 114-129.	1.8	16
46	Thermodynamic analysis of a liquid-flooded Ericsson cycle cooler. International Journal of Refrigeration, 2007, 30, 1176-1186.	1.8	15
47	Experimental investigation of a liquid-flooded Ericsson cycle cooler. International Journal of Refrigeration, 2008, 31, 1241-1252.	1.8	15
48	Optimization of a scroll compressor for liquid flooding. International Journal of Refrigeration, 2012, 35, 1901-1913.	1.8	15
49	Performance analysis of liquid flooded compression with regeneration for cold climate heat pumps. International Journal of Refrigeration, 2016, 68, 50-58.	1.8	15
50	Review of vapor compression refrigeration in microgravity environments. International Journal of Refrigeration, 2021, 123, 169-179.	1.8	14
51	Optimization of electrostatically actuated miniature compressors for electronics cooling. International Journal of Refrigeration, 2009, 32, 1517-1525.	1.8	13
52	Dynamic analysis of an electrostatic compressor. International Journal of Refrigeration, 2010, 33, 889-896.	1.8	12
53	Modeling of a novel spool compressor with multiple vapor refrigerant injection ports. International Journal of Refrigeration, 2013, 36, 1982-1997.	1.8	12
54	Analysis of an organic Rankine cycle with liquid-flooded expansion and internal regeneration (ORCLFE). Energy, 2018, 144, 1092-1106.	4.5	11

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55	Modeling of Hermetic Scroll Compressors: Model Development. HVAC and R Research, 2004, 10, 129-152.	0.9	10
56	Mitigation of air flow maldistribution in evaporators. Applied Thermal Engineering, 2014, 73, 879-887.	3.0	10
57	Experimental validation and sensitivity analysis of a dynamic simulation model for linear compressors. International Journal of Refrigeration, 2020, 117, 369-380.	1.8	10
58	A generalized moving-boundary algorithm to predict the heat transfer rate of transcritical CO ₂ gas coolers. International Journal of Refrigeration, 2020, 118, 491-503.	1.8	10
59	Thermodynamic comparison of organic Rankine cycles employing liquid-flooded expansion or a solution circuit. Applied Thermal Engineering, 2013, 61, 859-865.	3.0	9
60	Approaching the performance limit for economized cycles using simplified cycles. International Journal of Refrigeration, 2014, 45, 64-72.	1.8	8
61	The chemical looping heat pump: Thermodynamic modeling. International Journal of Refrigeration, 2019, 98, 302-310.	1.8	8
62	Impacts of fouling and cleaning on the performance of plate fin and spine fin heat exchangers. Journal of Mechanical Science and Technology, 2003, 17, 1801-1811.	0.4	7
63	Development of a loss pareto for a rotating spool compressor using high-speed pressure measurements and friction analysis. Applied Thermal Engineering, 2016, 99, 392-401.	3.0	7
64	Compressor driven metal hydride heat pumps using an adsorptive slurry and isothermal compression. Science and Technology for the Built Environment, 2016, 22, 565-575.	0.8	7
65	A Dynamic Simulation Framework for the Analysis of Battery Electric Vehicle Thermal Management Systems. , 2020, , .		7
66	Vapor compression refrigeration testing on parabolic flights: Part 2 - heat exchanger performance. International Journal of Refrigeration, 2022, 135, 254-260.	1.8	6
67	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.	0.9	5
68	Analysis on a net-zero energy renovation of a 1920s vintage home. Science and Technology for the Built Environment, 2016, 22, 1060-1073.	0.8	5
69	Experimental analyses of different control strategies of an R-410A split-system heat pump by employing a turbomachinery expansion recovery device. International Journal of Refrigeration, 2020, 112, 189-200.	1.8	5
70	Design and commissioning of a modular multi-stage two-evaporator transcritical CO ₂ test stand. International Journal of Refrigeration, 2021, 130, 392-403.	1.8	5
71	Vapor compression refrigeration testing on parabolic flights: Part 1 - cycle stability. International Journal of Refrigeration, 2022, 136, 152-161.	1.8	5
72	Effect of orientation on the steady-state performance of vapor compression cycles. Applied Thermal Engineering, 2022, 207, 118174.	3.0	5

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73	Development of a virtual EXV flow sensor for applications with two-phase flow inlet conditions. International Journal of Refrigeration, 2014, 45, 243-250.	1.8	4
74	Non-symmetric approach to single-screw expander and compressor modeling. IOP Conference Series: Materials Science and Engineering, 2017, 232, 012076.	0.3	4
75	Application of Second-Law Analysis for the Environmental Control Unit at High Ambient Temperature. Energies, 2020, 13, 3274.	1.6	4
76	Modeling of an Oil-Free Carbon Dioxide Compressor Using Sanderson-Rocker Arm Motion (S-RAM) Mechanism. IOP Conference Series: Materials Science and Engineering, 2015, 90, 012023.	0.3	3
77	Performance evaluation of a novel single-screw compressor and expander design. IOP Conference Series: Materials Science and Engineering, 2019, 604, 012074.	0.3	3
78	Modeling and analysis of an open-drive Z-compressor. IOP Conference Series: Materials Science and Engineering, 2017, 232, 012062.	0.3	2
79	Novel approach to single-screw compressors and expanders design. IOP Conference Series: Materials Science and Engineering, 2018, 425, 012011.	0.3	2
80	Modeling high-performance buildings. HVAC and R Research, 2011, 17, 231-234.	0.9	0
81	Numerical analysis of gas bearings in oil-free linear compressors. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2020, , 095440892094381.	1.4	0
82	Research of transverse dynamic oscillation for the piston in labyrinth compressor. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2021, 235, 959-972.	1.4	0
83	Professor Raymond Cohen 1923â€“2020. Science and Technology for the Built Environment, 2021, 27, 391-392.	0.8	0
84	Discussion of Numerical Methods used in Positive Displacement Comprehensive Mechanistic Models: Case Study using the Z-Compressor. Journal of Physics: Conference Series, 2021, 1909, 012065.	0.3	0
85	Adhesive Bonding of Copper Prepared by Laser-Interference near the Interference Structuring Limits. Materials, 2021, 14, 3485.	1.3	0
86	A Pressure and Temperature Cycling Test Stand with Hot-Gas Bypass Control for Evaluation of Adhesive Joints in HVAC&R Applications. International Journal of Refrigeration, 2022, , .	1.8	0