

# Yogendra K Joshi

## List of Publications by Year in descending order

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134  
papers

1,944  
citations

236912

25  
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345203

36  
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135  
all docs

135  
docs citations

135  
times ranked

1222  
citing authors

#	ARTICLE	IF	CITATIONS
1	Parametric Numerical Study of Flow and Heat Transfer in Microchannels With Wavy Walls. Journal of Heat Transfer, 2011, 133, .	2.1	154
2	Modeling of data center airflow and heat transfer: State of the art and future trends. Distributed and Parallel Databases, 2007, 21, 193-225.	1.6	90
3	Thermal Characterization of Interlayer Microfluidic Cooling of Three-Dimensional Integrated Circuits With Nonuniform Heat Flux. Journal of Heat Transfer, 2010, 132, .	2.1	82
4	A Natural Circulation Model of the Closed Loop, Two-Phase Thermosyphon for Electronics Cooling. Journal of Heat Transfer, 2002, 124, 881-890.	2.1	59
5	Thermal Characteristics of Open and Contained Data Center Cold Aisle. Journal of Heat Transfer, 2013, 135, .	2.1	57
6	Comparison of electro-thermal performance of advanced cooling techniques for electric vehicle motors. Applied Thermal Engineering, 2021, 183, 116182.	6.0	55
7	Proper Orthogonal Decomposition for Reduced Order Thermal Modeling of Air Cooled Data Centers. Journal of Heat Transfer, 2010, 132, .	2.1	47
8	A Review of Two-Phase Forced Cooling in Three-Dimensional Stacked Electronics: Technology Integration. Journal of Electronic Packaging, Transactions of the ASME, 2015, 137, .	1.8	47
9	Computational Fluid Dynamics Modeling of Flow Boiling in Microchannels With Nonuniform Heat Flux. Journal of Heat Transfer, 2018, 140, .	2.1	41
10	Downhole Electronics Cooling Using a Thermoelectric Device and Heat Exchanger Arrangement. Journal of Electronic Packaging, Transactions of the ASME, 2011, 133, .	1.8	34
11	Experimental Characterization of Various Cold Aisle Containment Configurations for Data Centers. Journal of Electronic Packaging, Transactions of the ASME, 2015, 137, .	1.8	32
12	Integrated Circuit Cooling Using Heterogeneous Micropin-Fin Arrays for Nonuniform Power Maps. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2017, 7, 1465-1475.	2.5	31
13	Size Effect on the Thermal Conductivity of Thin Metallic Films Investigated by Scanning Joule Expansion Microscopy. Journal of Heat Transfer, 2008, 130, .	2.1	30
14	High-Quality Vertically Aligned Carbon Nanotubes for Applications as Thermal Interface Materials. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2014, 4, 232-239.	2.5	30
15	Flow regimes and convective heat transfer of refrigerant flow boiling in ultra-small clearance microgaps. International Journal of Heat and Mass Transfer, 2017, 108, 1702-1713.	4.8	30
16	Multiscale Thermal Modeling Methodology for Thermoelectrically Cooled Electronic Cabinets. Numerical Heat Transfer; Part A: Applications, 2007, 53, 225-248.	2.1	28
17	Experimental Investigation of Air Flow Through a Perforated Tile in a Raised Floor Data Center. Journal of Electronic Packaging, Transactions of the ASME, 2015, 137, .	1.8	28
18	Impact of Copper Through-Package Vias on Thermal Performance of Glass Interposers. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2015, 5, 1075-1084.	2.5	28

#	ARTICLE	IF	CITATIONS
19	A new general model for phase-change heat transfer of waxy crude oil during the ambient-induced cooling process. Numerical Heat Transfer; Part A: Applications, 2017, 71, 511-527.	2.1	28
20	Flow boiling of R245fa in a microgap with staggered circular cylindrical pin fins. International Journal of Heat and Mass Transfer, 2018, 121, 329-342.	4.8	28
21	Numerical modeling and experimental validation of two-phase microfluidic cooling in silicon devices for vertical integration of microelectronics. International Journal of Heat and Mass Transfer, 2019, 138, 194-207.	4.8	28
22	Convective Transport Processes in Data Centers. Numerical Heat Transfer; Part A: Applications, 2006, 49, 923-945.	2.1	27
23	Flow boiling heat transfer in silicon microgaps with multiple hotspots and variable pin fin clustering. Physics of Fluids, 2019, 31, .	4.0	27
24	Hybrid Solid State/Fluidic Cooling for Hot Spot Removal. Nanoscale and Microscale Thermophysical Engineering, 2009, 13, 135-150.	2.6	26
25	Adaptable Robust Design of Multi-Scale Convective Systems Applied to Energy Efficient Data Centers. Numerical Heat Transfer; Part A: Applications, 2010, 57, 69-100.	2.1	26
26	A Compact Approach to On-Chip Interconnect Heat Conduction Modeling Using the Finite Element Method. Journal of Electronic Packaging, Transactions of the ASME, 2008, 130, .	1.8	25
27	Fluid-to-Fluid Spot-to-Spreader (F2/S2) Hybrid Heat Sink for Integrated Chip-Level and Hot Spot-Level Thermal Management. Journal of Electronic Packaging, Transactions of the ASME, 2009, 131, .	1.8	25
28	The ICECool Fundamentals Effort on Evaporative Cooling of Microelectronics. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2021, 11, 1546-1564.	2.5	25
29	Comparison of Single-Phase Convection in Additive Manufactured Versus Traditional Metal Foams. Journal of Heat Transfer, 2020, 142, .	2.1	25
30	Reduced Order Thermal Modeling of Data Centers via Distributed Sensor Data. Journal of Heat Transfer, 2012, 134, .	2.1	24
31	Experimental investigations on the effect of perforated tile air jet velocity on server air distribution in a high density data center. , 2010, , .		23
32	Flow Boiling in Microgaps for Thermal Management of High Heat Flux Microsystems. Journal of Electronic Packaging, Transactions of the ASME, 2016, 138, .	1.8	22
33	Reduced Order Thermal Models of Multiscale Microsystems. Journal of Heat Transfer, 2012, 134, .	2.1	21
34	Thermal Performance Metrics for Arranging Forced Air Cooled Servers in a Data Processing Cabinet. Journal of Electronic Packaging, Transactions of the ASME, 2005, 127, 452-459.	1.8	20
35	Numerical Modeling of Perforated Tile Flow Distribution in a Raised-Floor Data Center. Journal of Electronic Packaging, Transactions of the ASME, 2010, 132, .	1.8	19
36	Rapid Temperature Predictions in Data Centers using Multi-Parameter Proper Orthogonal Decomposition. Numerical Heat Transfer; Part A: Applications, 2014, 66, 41-63.	2.1	19

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37	Hotspot Thermal Management With Flow Boiling of Refrigerant in Ultrasmall Microgaps. Journal of Electronic Packaging, Transactions of the ASME, 2017, 139, .	1.8	19
38	Capillary-Assisted Evaporation/Boiling in PDMS Microchannel Integrated with Wicking Microstructures. Langmuir, 2020, 36, 12143-12149.	3.5	19
39	Heat Transfer in Microchannels With Suspended Solid Particles: Lattice-Boltzmann Based Computations. Journal of Heat Transfer, 2010, 132, .	2.1	17
40	Dynamics of cold aisle air distribution in a raised floor data center. , 2010, , .		17
41	Room Level Modeling of Air Flow in a Contained Data Center Aisle. Journal of Electronic Packaging, Transactions of the ASME, 2014, 136, .	1.8	17
42	Capillary Performance of Micropillar Arrays in Different Arrangements. Nanoscale and Microscale Thermophysical Engineering, 2018, 22, 97-113.	2.6	17
43	Three-Dimensional Integrated Circuit With Embedded Microfluidic Cooling: Technology, Thermal Performance, and Electrical Implications. Journal of Electronic Packaging, Transactions of the ASME, 2016, 138, .	1.8	16
44	A semianalytical solution for the 3D method including the effect of heater thermal conduction. Journal of Applied Physics, 2008, 103, 113517.	2.5	14
45	Coordinated Optimization of Cooling and IT Power in Data Centers. Journal of Electronic Packaging, Transactions of the ASME, 2010, 132, .	1.8	14
46	Two-Phase Convective Cooling for Ultrahigh Power Dissipation in Microprocessors. Journal of Heat Transfer, 2016, 138, .	2.1	14
47	The Thermal Design of a Next Generation Data Center: A Conceptual Exposition. , 2007, , .		13
48	Further study on the thermal characteristic of a buried waxy crude oil pipeline during its cooling process after a shutdown. Numerical Heat Transfer; Part A: Applications, 2017, 71, 137-152.	2.1	13
49	Thermal Performance Analysis of Biporous Metal Foam Heat Sink. Journal of Heat Transfer, 2017, 139, .	2.1	13
50	Coupled Electro-Thermal Analysis of Permanent Magnet Synchronous Motor for Electric Vehicles. , 2020, , .		13
51	Experimental characterization of cold aisle containment for data centers. , 2013, , .		12
52	Boiling of Water at Subatmospheric Conditions With Enhanced Structures: Effect of Liquid Fill Volume. Journal of Electronic Packaging, Transactions of the ASME, 2008, 130, .	1.8	11
53	Experimental characterization of a micro-scale thin film evaporative cooling device. , 2010, , .		11
54	Effect of server load variation on rack air flow distribution in a raised floor data center. , 2011, , .		11

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55	Effect of rack server population on temperatures in data centers. , 2012, , .		11
56	Comparison of the Volume of Fluid and CLSVOF Methods for the Assessment of Flow Boiling in Silicon Microgaps. Journal of Heat Transfer, 2017, 139, .	2.1	11
57	Two-Phase Heat Spreaders Utilizing Microfabricated Boiling Enhancement Structures. Heat Transfer Engineering, 2004, 25, 26-36.	1.9	10
58	Parametric thermal modeling of heat transfer in handheld electronic devices. Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, 2008, , .	0.0	10
59	Experimental investigation of hotspot removal using superlattice cooler. , 2010, , .		10
60	Cooling power optimization for hybrid solid-state and liquid cooling in integrated circuit chips with hotspots. , 2012, , .		10
61	Rapid modeling of air flow through perforated tiles in a raised floor data center. , 2014, , .		10
62	Experimental Characterization of Hybrid Solid-State and Fluidic Cooling for Thermal Management of Localized Hotspots. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2015, 5, 57-64.	2.5	10
63	Energy and Exergy Analysis of Modular Data Centers. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2017, 7, 1440-1452.	2.5	10
64	Single-Phase Microfluidic Cooling of 2.5D-SICs for Heterogeneous Integration. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2020, 10, 1499-1506.	2.5	10
65	Flow-Assisted Evaporative Cooling for Electric Motor. IEEE Transactions on Transportation Electrification, 2022, 8, 1128-1143.	7.8	10
66	Compact Transient Thermal Model of Microfluidically Cooled Three-Dimensional Stacked Chips With Pin-Fin Enhanced Microgap. Journal of Electronic Packaging, Transactions of the ASME, 2021, 143, .	1.8	10
67	EFFECT OF CONDENSER LOCATION AND IMPOSED CIRCULATION ON THE PERFORMANCE OF A COMPACT TWO-PHASE THERMOSYPHON. Microscale Thermophysical Engineering, 2003, 7, 163-179.	1.2	9
68	Proper Orthogonal Decomposition-Based Modeling Framework for Improving Spatial Resolution of Measured Temperature Data. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2014, 4, 848-858.	2.5	9
69	Algebraic Multigrid Preconditioned Krylov Subspace Methods for Fluid Flow and Heat Transfer on Unstructured Meshes. Numerical Heat Transfer, Part B: Fundamentals, 2006, 49, 197-221.	0.9	8
70	A Proper Orthogonal Decomposition Based System-Level Thermal Modeling Methodology for Shipboard Power Electronics Cabinets. Heat Transfer Engineering, 2008, 29, 198-215.	1.9	8
71	Application of Thermoelectric-Adsorption Cooler for Harsh Environment Electronics Under Varying Heat Load. Journal of Thermal Science and Engineering Applications, 2010, 2, .	1.5	8
72	Hybrid Liquid Immersion and Synthetic Jet Heat Sink for Cooling 3-D Stacked Electronics. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2012, 2, 817-824.	2.5	8

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73	Flow boiling of R245fa in a microgap with integrated staggered pin fins. , 2016, , .		8
74	Active Fluidic Cooling on Energy Constrained System-on-Chip Systems. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2017, 7, 1813-1822.	2.5	8
75	Single phase liquid cooling of hotspots in a heterogeneous pin-fin-enhanced microgap with non-uniform fin array. , 2017, , .		8
76	Predictive Model Development and Validation for Raised Floor Plenum Data Center. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.8	8
77	Use of airside economizer for data center thermal management. , 2008, , .		7
78	A Modular Stackable Concept for Heat Removal From 3-D Stacked Chip Electronics by Interleaved Solid Spreaders and Synthetic Jets. IEEE Transactions on Advanced Packaging, 2009, 32, 431-439.	1.6	7
79	A novel conduction-convection based cooling solution for 3D stacked electronics. , 2010, , .		7
80	Multiphysics challenges with Heterogeneous Integrated Voltage Regulator based Power Delivery Architectures. , 2020, , .		6
81	Scanning Joule Expansion Microscopy of a Constriction in Thin Metallic Film. Journal of Heat Transfer, 2005, 127, 809-809.	2.1	5
82	Screening and Evaluation of Mixture Formulations for Electronics Thermal Management Using Pool Boiling. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2011, 1, 1387-1394.	2.5	5
83	Dynamic thermal management of high heat flux devices using embedded solid-liquid phase change materials and solid state coolers. , 2012, , .		5
84	Anemometric tool for air flow rate measurement through perforated tiles in a raised floor data center. , 2015, , .		5
85	Flow visualization of two phase flow of R245fa in a microgap with integrated staggered pin fins. , 2016, , .		5
86	Pool Boiling Using Thin Enhanced Structures Under Top-Confined Conditions. Journal of Heat Transfer, 2006, 128, 1302-1311.	2.1	4
87	Fluid-to-fluid spot-to-spreader (F2/S2) hybrid heat sink for integrated chip-level and hotspot-level thermal management. Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, 2008, , .	0.0	4
88	Hybrid solid state/fluidic cooling for hotspot removal. Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, 2008, , .	0.0	4
89	Rapid multi-scale transient thermal modeling of packaged microprocessors using hybrid approach. , 2012, , .		4
90	Single Phase Liquid Cooling of High Heat Flux Devices With Local Hotspot in a Microgap With Nonuniform Fin Array. Journal of Heat Transfer, 2021, 143, .	2.1	4

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91	Development of a prototype thermal management solution for 3-D stacked chip electronics by interleaved solid spreaders and synthetic jets. , 2007, , .		3
92	Thermal characterization of planar interconnect architectures under different rapid transient currents using the transmission line matrix and finite element methods. , 2010, , .		3
93	Energy reduction in server cooling via real time thermal control. , 2012, , .		3
94	Evaluation of modified body force (MBF) model for rapid air flow modeling through perforated tiles. , 2015, , .		3
95	Experimental characterization of in-package microfluidic cooling on a System-on-Chip. , 2015, , .		3
96	Augmented PEEC for direct time-domain thermal and power estimation of Integrated Voltage Regulator architectures arising in Heterogeneous Integration. , 2020, , .		3
97	Thermosyphon Cooled Three Dimensional Stacked Heat Sources. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2021, , 1-1.	2.5	3
98	Parametric Analysis of Microfluidic Cooling Systems for Three-Dimensional-Stacked Silicon Microelectronics by Inferential Statistic Approaches. Journal of Heat Transfer, 2021, 143, .	2.1	3
99	Heat Spreading and Heat Removal Needs of a Novel Power Electronics Package with Integrated Cooling. , 2021, , .		3
100	Reduced order modeling of power electronics cabinet with double-sided cooling. Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems, 2008, , .	0.0	2
101	Thermal capacitance matching in 3D many-core architectures. , 2011, , .		2
102	Characterization of steady and transient heating of interconnects - a review. , 2011, , .		2
103	Transient Characterization of Hybrid Microfluidic-Thermoelectric Cooling Scheme for Dynamic Thermal Management of Microprocessor. Journal of Electronic Packaging, Transactions of the ASME, 2014, 136, .	1.8	2
104	Computational and Experimental Investigation of Thermal Coupling Between Superlattice Coolers. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2014, 4, 622-631.	2.5	2
105	Two phase convective cooling for ultra-high power dissipation in microprocessors. , 2014, , .		2
106	Compact Model-Based Microfluidic Controller for Energy Efficient Thermal Management Using Single Tier and Three-Dimensional Stacked Pin-Fin Enhanced Microgap. Journal of Electronic Packaging, Transactions of the ASME, 2015, 137, .	1.8	2
107	CFD study of flow boiling in silicon microgaps with staggered pin fins for the 3D-stacking of ICs. , 2016, , .		2
108	Dielectric Fluids for the Direct Forced Convection Cooling of Power Electronics. , 2021, , .		2

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109	Packaging Environmental Sensors for Monitoring Urban-Microclimates. ASME Journal of Engineering for Sustainable Buildings and Cities, 2020, 1, .	0.9	2
110	Two-Phase Heat Transfer and Flow Regimes in Pin Fin-Enhanced Microgapsâ€”Effect of Pin Spacing. Journal of Heat Transfer, 2021, 143, .	2.1	2
111	Performance of two-step thermoelectric-adsorption heat pump for harsh environment electronics cooling. , 2010, , .		1
112	Thermal characteristics of TIMs with elliptical particles. , 2010, , .		1
113	Reliability assessment of hydrofoil-shaped micro-pin fins. , 2016, , .		1
114	Shutter control for cooling air flow management in data center servers. , 2016, , .		1
115	Flow boiling of water at sub-atmospheric pressure in staggered micro pin-fin heat sink. , 2016, , .		1
116	Design, Characterization, and Application of a Field-Programmable Thermal Emulation Platform. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2016, 6, 1330-1339.	2.5	1
117	Thermal Management of Outdoor Digital Displays - A Review. , 2019, , .		1
118	Thermal Modeling of Air Cooled Outdoor Digital Displays. , 2019, , .		1
119	Energy-Efficient Task Distribution Using Neural Network Temperature Prediction in a Data Center. , 2019, , .		1
120	Augmented finite element method (AFEM) for the linear steady-state thermal and thermomechanical analysis of heterogeneous integration architectures. , 2021, , .		1
121	Vandal Glass Heat Distribution and the Effect of Glass Gap Adjustments in Outdoor Digital Display Components. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.8	1
122	Multi-physics Modeling of a Power Electronics Package with Integrated Cooling. , 2021, , .		1
123	Closure to â€œDiscussion of â€”Effect of Tip Clearance on the Thermal and Hydrodynamic Performance of a Shrouded Pin Fin Arrayâ€”(2006, ASME J. Heat Transfer, 128, pp. 855â€”856). Journal of Heat Transfer, 2006, 128, 857-857.		0
124	Interconnect Joule Heating under Transient Currents using the Transmission Line Matrix Method. Journal of Electronic Packaging, Transactions of the ASME, 2012, 134, .	1.8	0
125	Performance of an air-cooled heat sink with microscale dimples under transitional flow conditions. , 2012, , .		0
126	Crossing the length scale divide to address thermal challenges for sustainable data centers. , 2012, , .		0

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127	ENERGY EFFICIENT SOLID-STATE COOLING FOR HOT SPOT REMOVAL. WSPC Series in Advanced Integration and Packaging, 2014, , 195-226.	0.0	0
128	Energy Efficient Solid-State Cooling for Hot Spot Removal. , 2014, , 169-196.		0
129	A Cabinet Level Thermal Test Vehicle to Evaluate Hybrid Double-Sided Cooling Schemes. , 2014, , 289-310.		0
130	A CABINET LEVEL THERMAL TEST VEHICLE TO EVALUATE HYBRID DOUBLE-SIDED COOLING SCHEMES. WSPC Series in Advanced Integration and Packaging, 2014, , 333-356.	0.0	0
131	Impact of a rotary regenerative heat exchanger on energy efficiency of an air cooled data center. , 2016, , .		0
132	In Memoriam Prof. Avram Bar-Cohen. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2021, 11, 1153-1155.	2.5	0
133	In Memoriam - A Tribute: Prof. Avram Bar-Cohen. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2021, 11, 1519-1523.	2.5	0
134	Multiphysics Challenges and Opportunities for Integrated Voltage Regulators in Power Delivery Architectures. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2022, 12, 131-146.	2.5	0