

# Massoud Kaviany

## List of Publications by Year in descending order

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86  
papers

4,192  
citations

172207

29  
h-index

118652

62  
g-index

92  
all docs

92  
docs citations

92  
times ranked

4432  
citing authors

#	ARTICLE	IF	CITATIONS
1	Effective diffusivity and water-saturation distribution in single- and two-layer PEMFC diffusion medium. <i>International Journal of Heat and Mass Transfer</i> , 2003, 46, 4595-4611.	2.5	854
2	Pool-boiling CHF enhancement by modulated porous-layer coating: theory and experiment. <i>International Journal of Heat and Mass Transfer</i> , 2001, 44, 4287-4311.	2.5	443
3	<i>Ab initio</i> and molecular dynamics predictions for electron and phonon transport in bismuth telluride. <i>Physical Review B</i> , 2008, 77, .	1.1	349
4	Micro-thermoelectric cooler: interfacial effects on thermal and electrical transport. <i>International Journal of Heat and Mass Transfer</i> , 2004, 47, 2417-2435.	2.5	208
5	Microporous layer for water morphology control in PEMFC. <i>International Journal of Heat and Mass Transfer</i> , 2009, 52, 2779-2791.	2.5	207
6	Temperature dependent band gap in PbX (X=As, Se, Te). <i>Applied Physics Letters</i> , 2013, 103, .	1.5	140
7	Effect of pore structure, randomness and size on effective mass diffusivity. <i>AIChE Journal</i> , 2002, 48, 15-24.	1.8	117
8	Electrical, thermal, and species transport properties of liquid eutectic Ga-In and Ga-In-Sn from first principles. <i>Journal of Chemical Physics</i> , 2014, 140, 064303.	1.2	109
9	Thermoelectric performance of films in the bismuth-tellurium and antimony-tellurium systems. <i>Journal of Applied Physics</i> , 2005, 97, 114903.	1.1	96
10	Principles of Convective Heat Transfer. <i>Mechanical Engineering Series</i> , 2001, , .	0.1	90
11	A Novel Role of Three Dimensional Graphene Foam to Prevent Heater Failure during Boiling. <i>Scientific Reports</i> , 2013, 3, 1960.	1.6	75
12	Roles of atomic restructuring in interfacial phonon transport. <i>Physical Review B</i> , 2010, 82, .	1.1	67
13	Role of water states on water uptake and proton transport in Nafion using molecular simulations and bimodal network. <i>Polymer</i> , 2011, 52, 2584-2593.	1.8	60
14	Low-temperature characterization and micropatterning of coevaporated Bi <sub>2</sub> Te <sub>3</sub> and Sb <sub>2</sub> Te <sub>3</sub> films. <i>Journal of Applied Physics</i> , 2008, 104, .	1.1	59
15	Structural Order-Disorder Transitions and Phonon Conductivity of Partially Filled Skutterudites. <i>Physical Review Letters</i> , 2010, 105, 265901.	2.9	56
16	Low-temperature structural and transport anomalies in $Cu_{2-x}Se$ . <i>Physical Review B</i> , 2014, 89, .	1.1	54
17	Evaporation-Combustion Affected by In-Cylinder, Reciprocating Porous Regenerator. <i>Journal of Heat Transfer</i> , 2002, 124, 184-194.	1.2	52
18	Pool boiling experiments in reduced graphene oxide colloids. Part I – Boiling characteristics. <i>International Journal of Heat and Mass Transfer</i> , 2014, 74, 501-512.	2.5	52

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19	Dynamics of water droplet on a heated nanotubes surface. Applied Physics Letters, 2013, 102, .	1.5	49
20	Pool-boiling enhancement using multilevel modulated wick. Applied Thermal Engineering, 2018, 137, 268-276.	3.0	46
21	Filler-reduced phonon conductivity of thermoelectric skutterudites: Ab initio calculations and molecular dynamics simulations. Acta Materialia, 2010, 58, 4516-4526.	3.8	41
22	Effect of thermal disorder on high figure of merit in PbTe. Physical Review B, 2012, 86, .	1.1	39
23	Anisotropic Lattice Thermal Conductivity and Suppressed Acoustic Phonons in MOF-74 from First Principles. Journal of Physical Chemistry C, 2015, 119, 26000-26008.	1.5	39
24	Phase-change-related degradation of catalyst layers in proton-exchange-membrane fuel cells. Electrochimica Acta, 2013, 95, 29-37.	2.6	36
25	Efficiency of thermoelectric energy conversion in biphenyl-dithiol junctions: Effect of electron-phonon interactions. Physical Review B, 2011, 83, .	1.1	35
26	Lattice thermal conductivity of UO <sub>2</sub> using ab-initio and classical molecular dynamics. Journal of Applied Physics, 2014, 115, 123510.	1.1	35
27	Figure of merit of high- $ZT$ $\ln$ $\text{Se}_4$	1.1	33
28	Quasi-steady front in quench subcooled-jet impingement boiling: Experiment and analysis. International Journal of Heat and Mass Transfer, 2017, 113, 622-634.	2.5	33
29	Optimization of peripheral finned-tube evaporators using entropy generation minimization. International Journal of Heat and Mass Transfer, 2012, 55, 7838-7846.	2.5	31
30	Thermophysical properties of liquid UO <sub>2</sub> , ZrO <sub>2</sub> and corium by molecular dynamics and predictive models. Journal of Nuclear Materials, 2017, 491, 126-137.	1.3	31
31	Configuring pnictogen rings in skutterudites for low phonon conductivity. Physical Review B, 2012, 86, .	1.1	30
32	Multi-artery heat-pipe spreader: monolayer-wick receding meniscus transitions and optimal performance. International Journal of Heat and Mass Transfer, 2017, 112, 343-353.	2.5	30
33	Low phonon conductivity of layered BiCuOS, BiCuOSe, and BiCuOTe from first principles. Physical Review B, 2016, 94, .	1.1	28
34	Pool boiling experiments in reduced graphene oxide colloids part II – Behavior after the CHF, and boiling hysteresis. International Journal of Heat and Mass Transfer, 2014, 78, 224-231.	2.5	27
35	Microscale-modulated porous coatings: fabrication and pool-boiling heat transfer performance. Journal of Micromechanics and Microengineering, 2010, 20, 035020.	1.5	25
36	Multistage Planar Thermoelectric Microcoolers. Journal of Microelectromechanical Systems, 2011, 20, 1201-1210.	1.7	23



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55	Thermal performance of peripheral-finned tube evaporators under frosting. International Journal of Heat and Mass Transfer, 2018, 116, 194-207.	2.5	8
56	UO <sub>2</sub> bicrystal phonon grain-boundary resistance by molecular dynamics and predictive models. International Journal of Heat and Mass Transfer, 2016, 100, 243-249.	2.5	7
57	Nanocapillarity in Graphene Oxide Laminate and Its Effect on Critical Heat Flux. Journal of Heat Transfer, 2017, 139, .	1.2	7
58	Gradient destruction in flow through a rigid matrix. Journal of Fluid Mechanics, 1986, 165, 221.	1.4	6
59	Peripheral fins for blockage robustness. International Journal of Heat and Mass Transfer, 2007, 50, 2514-2520.	2.5	6
60	Phonon-coupling enhanced absorption of alloyed amorphous silicon for solar photovoltaics. Physical Review B, 2010, 82, .	1.1	6
61	Entropy production in hot-phonon energy conversion to electric potential. Journal of Applied Physics, 2013, 114, .	1.1	6
62	Analytic characterization and operational limits of a hybrid two-phase mechanically pumped fluid loop based on the capillary pumped loop. International Journal of Heat and Mass Transfer, 2022, 183, 122019.	2.5	6
63	Phonon recycling in ion-doped lasers. Applied Physics Letters, 2009, 95, .	1.5	5
64	Optical phonon production by upconversion: Heterojunction-transmitted versus native phonons. Physical Review B, 2015, 91, .	1.1	5
65	Toward reversing Joule heating with a phonon-absorbing heterobarrier. Physical Review B, 2015, 91, .	1.1	5
66	Phonocatalysis. An ab initio simulation experiment. AIP Advances, 2016, 6, .	0.6	5
67	Measured Performance of a Micro Thermoelectric Cooler. , 2004, , 415.		4
68	<i>Ab initio</i> calculations of $f$ -orbital electron-phonon interaction in laser cooling. Physical Review B, 2009, 79, .	1.1	4
69	Phonovoltaic. III. Electron-phonon coupling and figure of merit of graphene:BN. Physical Review B, 2016, 94, .	1.1	4
70	Bilayer graphene phonovoltaic-FET: In situ phonon recycling. Physical Review B, 2017, 96, .	1.1	4
71	Sensitivity and uncertainty analyses of ex-vessel molten core cooling in a flooded cavity during a severe accident. Nuclear Engineering and Design, 2018, 328, 121-133.	0.8	4
72	Role of compression metallization in UO <sub>2</sub> fission-product energy cascade track: Multiscale electron-phonon analyses. Journal of Nuclear Materials, 2018, 511, 148-163.	1.3	4

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73	Geometric-confinement suppression of flow-boiling instability using perforated wick: Part I CHF and conductance enhancement. International Journal of Heat and Mass Transfer, 2020, 159, 120080.	2.5	4
74	Flow-boiling canopy wick capillary-viscous limit. International Journal of Heat and Mass Transfer, 2021, 181, 121999.	2.5	4
75	A multistage in-plane micro-thermoelectric cooler. Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 2008, , .	0.0	3
76	Role of quenching method on cooling rate and microstructure of steels: Variations in coolant and its flow arrangement. International Journal of Heat and Mass Transfer, 2022, 189, 122702.	2.5	3
77	Air-Side Heat Transfer and Pressure Drop Characteristics of Peripheral Fin Heat Exchangers. , 2010, , .		2
78	Roles of core-shell and $\hat{\Gamma}$ -ray kinetics in layered BN $\hat{\Gamma}$ -voltaic efficiency. Journal of Applied Physics, 2013, 113, 063703.	1.1	2
79	Direct simulation of flow-boiling crisis and its porous-metasurface control for very large dryout limit. International Journal of Heat and Mass Transfer, 2022, 194, 123051.	2.5	2
80	Geometric-confinement suppression of flow-boiling instability using perforated wick: Part II CHF limits and wick properties. International Journal of Heat and Mass Transfer, 2020, 159, 120079.	2.5	1
81	Ceramic Heat Pipe for Thermal Management of a High-Frequency Inductor. , 2021, , .		1
82	Enhanced laser cooling of CO <sub>2</sub> –Xe gas using (0200) excitation. Journal of Applied Physics, 2009, 106, 124910.	1.1	0
83	Phonon-assisted absorption enhancement in amorphous Si solar photovoltaic. , 2010, , .		0
84	Visualization of water on through-plane direction of GDL using X-ray radiography. , 2010, , .		0
85	Phonon recycling. Mechanical Engineering Reviews, 2014, 1, TEP0002-TEP0002.	4.7	0
86	Professor Leonard L. Vasiliev on his the 80th birthday. Applied Thermal Engineering, 2017, 120, 431-432.	3.0	0