

# 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  | 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         |
| 2  | 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         |
| 3  | 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         |
| 4  | Ceramic Heat Pipe for Thermal Management of a High-Frequency Inductor. , 2021, , .  |     | 1         |
| 5  | Flow-boiling canopy wick capillary-viscous limit. International Journal of Heat and Mass Transfer, 2021, 181, 121999.   | 2.5 | 4         |
| 6  | 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         |
| 7  | 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         |
| 8  | Quench subcooled-jet impingement boiling: Staggered-array jets enhancement. International Journal of Heat and Mass Transfer, 2019, 136, 888-898.  | 2.5 | 14        |
| 9  | From thermoelectricity to phonoelectricity. Applied Physics Reviews, 2019, 6, 021305.   | 5.5 | 13        |
| 10 | Thermal actuation in TRPV1: Role of embedded lipids and intracellular domains. Journal of Theoretical Biology, 2018, 444, 38-49.  | 0.8 | 16        |
| 11 | 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         |
| 12 | Pool-boiling enhancement using multilevel modulated wick. Applied Thermal Engineering, 2018, 137, 268-276.  | 3.0 | 46        |
| 13 | Thermal performance of peripheral-finned tube evaporators under frosting. International Journal of Heat and Mass Transfer, 2018, 116, 194-207.  | 2.5 | 8         |
| 14 | Flow-boiling canopy wick for extreme heat transfer. International Journal of Heat and Mass Transfer, 2018, 117, 1158-1168.  | 2.5 | 11        |
| 15 | Role of compression metallization in UO2 fission-product energy cascade track: Multiscale electron-phonon analyses. Journal of Nuclear Materials, 2018, 511, 148-163.   | 1.3 | 4         |
| 16 | Quench subcooled-jet impingement boiling: Two interacting-jet enhancement. International Journal of Heat and Mass Transfer, 2018, 126, 1302-1314.   | 2.5 | 17        |
| 17 | Minimum film-boiling quench temperature increase by CuO porous-microstructure coating. Applied Physics Letters, 2017, 110, .  | 1.5 | 16        |
| 18 | Thermophysical properties of liquid UO2, ZrO2 and corium by molecular dynamics and predictive models. Journal of Nuclear Materials, 2017, 491, 126-137.   | 1.3 | 31        |

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 19 | Nanocapillarity in Graphene Oxide Laminate and Its Effect on Critical Heat Flux. Journal of Heat Transfer, 2017, 139, .  | 1.2 | 7         |
| 20 | 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        |
| 21 | Professor Leonard L. Vasiliev on his the 80th birthday. Applied Thermal Engineering, 2017, 120, 431-432.   | 3.0 | 0         |
| 22 | 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        |
| 23 | Bilayer graphene phonovoltaic-FET: In situ phonon recycling. Physical Review B, 2017, 96, .  | 1.1 | 4         |
| 24 | Phonocatalysis. An ab initio simulation experiment. AIP Advances, 2016, 6, .   | 0.6 | 5         |
| 25 | Phonovoltaic. III. Electron-phonon coupling and figure of merit of graphene:BN. Physical Review B, 2016, 94, .   | 1.1 | 4         |
| 26 | Low phonon conductivity of layered BiCuOS, BiCuOSe, and BiCuOTe from first principles. Physical Review B, 2016, 94, .  | 1.1 | 28        |
| 27 | Phonovoltaic. I. Harvesting hot optical phonons in a nanoscale p-n junction. Physical Review B, 2016, 93, .  | 1.1 | 8         |
| 28 | Phonovoltaic. II. Tuning band gap to optical phonon in graphite. Physical Review B, 2016, 93, .  | 1.1 | 9         |
| 29 | FARO tests corium-melt cooling in water pool: Roles of melt superheat and sintering in sediment. Nuclear Engineering and Design, 2016, 305, 569-581.                         | 0.8 | 8         |
| 30 | Thermal conductivity switch: Optimal semiconductor/metal melting transition. Physical Review B, 2016, 94, .  | 1.1 | 21        |
| 31 | 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         |
| 32 | Optimized $ZT$ for $B_i T_2$   | 1.1 | 15        |
| 33 | Optical phonon production by upconversion: Heterojunction-transmitted versus native phonons. Physical Review B, 2015, 91, .  | 1.1 | 5         |
| 34 | 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        |
| 35 | Toward reversing Joule heating with a phonon-absorbing heterobarrier. Physical Review B, 2015, 91, .   | 1.1 | 5         |
| 36 | Electrical, thermal, and species transport properties of liquid eutectic Ga-In and Ga-In-Sn from first principles. Journal of Chemical Physics, 2014, 140, 064303.           | 1.2 | 109       |

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|----|--|-----|-----------|
| 37 | 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        |
| 38 | Pool boiling experiments in reduced graphene oxide colloids. Part I "Boiling characteristics. International Journal of Heat and Mass Transfer, 2014, 74, 501-512.                        | 2.5 | 52        |
| 39 | Low-temperature structural and transport anomalies in $Cu_2Se$ . Physical Review B, 2014, 89, .  | 1.1 | 54        |
| 40 | 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        |
| 41 | Phonon recycling. Mechanical Engineering Reviews, 2014, 1, TEP0002-TEP0002.  | 4.7 | 0         |
| 42 | Entropy production in hot-phonon energy conversion to electric potential. Journal of Applied Physics, 2013, 114, .   | 1.1 | 6         |
| 43 | Heterobarrier for converting hot-phonon energy to electric potential. Physical Review B, 2013, 87, .   | 1.1 | 9         |
| 44 | Phase-change-related degradation of catalyst layers in proton-exchange-membrane fuel cells. Electrochimica Acta, 2013, 95, 29-37.  | 2.6 | 36        |
| 45 | Coupled polaron-phonon effects on Seebeck coefficient and lattice conductivity of $B_{13}C_2$ from first principles. Physical Review B, 2013, 87, .                                      | 1.1 | 8         |
| 46 | Dynamics of water droplet on a heated nanotubes surface. Applied Physics Letters, 2013, 102, .   | 1.5 | 49        |
| 47 | 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         |
| 48 | A Novel Role of Three Dimensional Graphene Foam to Prevent Heater Failure during Boiling. Scientific Reports, 2013, 3, 1960.   | 1.6 | 75        |
| 49 | Vacancy-suppressed lattice conductivity of high- $ZT$ $Sn_4Se_3$ .   | 1.1 | 33        |
| 50 | Temperature dependent band gap in $PbX$ ( $X = S, Se, Te$ ). Applied Physics Letters, 2013, 103, .   | 1.5 | 140       |
| 51 | Effect of thermal disorder on high figure of merit in PbTe. Physical Review B, 2012, 86, .   | 1.1 | 39        |
| 52 | Configuring pnictogen rings in skutterudites for low phonon conductivity. Physical Review B, 2012, 86, .   | 1.1 | 30        |
| 53 | Optimization of peripheral finned-tube evaporators using entropy generation minimization. International Journal of Heat and Mass Transfer, 2012, 55, 7838-7846.                          | 2.5 | 31        |
| 54 | Breakthrough/drainage pressures and X-ray water visualization in gas diffusion layer of PEMFC. Current Applied Physics, 2012, 12, 105-108.   | 1.1 | 10        |

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|----|--|-----|-----------|
| 55 | Heat transfer and pressure drop characteristics of peripheral-finned tube heat exchangers. International Journal of Heat and Mass Transfer, 2012, 55, 2835-2843.     | 2.5 | 10        |
| 56 | Multistage Planar Thermoelectric Microcoolers. Journal of Microelectromechanical Systems, 2011, 20, 1201-1210.   | 1.7 | 23        |
| 57 | Efficiency of thermoelectric energy conversion in biphenyl-dithiol junctions: Effect of electron-phonon interactions. Physical Review B, 2011, 83, .                 | 1.1 | 35        |
| 58 | Interflake thermal conductance of edge-passivated graphene. Physical Review B, 2011, 84, .   | 1.1 | 8         |
| 59 | Role of water states on water uptake and proton transport in Nafion using molecular simulations and bimodal network. Polymer, 2011, 52, 2584-2593.                   | 1.8 | 60        |
| 60 | Air-Side Heat Transfer and Pressure Drop Characteristics of Peripheral Fin Heat Exchangers. , 2010, , .  |     | 2         |
| 61 | Filler-reduced phonon conductivity of thermoelectric skutterudites: Ab initio calculations and molecular dynamics simulations. Acta Materialia, 2010, 58, 4516-4526. | 3.8 | 41        |
| 62 | Roles of atomic restructuring in interfacial phonon transport. Physical Review B, 2010, 82, .  | 1.1 | 67        |
| 63 | Phonon-assisted absorption enhancement in amorphous Si solar photovoltaic. , 2010, , .   |     | 0         |
| 64 | Visualization of water on through-plane direction of GDL using X-ray radiography. , 2010, , .  |     | 0         |
| 65 | Microscale-modulated porous coatings: fabrication and pool-boiling heat transfer performance. Journal of Micromechanics and Microengineering, 2010, 20, 035020.      | 1.5 | 25        |
| 66 | Structural Order-Disorder Transitions and Phonon Conductivity of Partially Filled Skutterudites. Physical Review Letters, 2010, 105, 265901.                         | 2.9 | 56        |
| 67 | Electrowetting Purged Surface Condensate in Evaporators. Heat Transfer Engineering, 2010, 31, 101-107.   | 1.2 | 15        |
| 68 | Phonon-coupling enhanced absorption of alloyed amorphous silicon for solar photovoltaics. Physical Review B, 2010, 82, .   | 1.1 | 6         |
| 69 | Enhanced laser cooling of CO <sub>2</sub> -Xe gas using (0200) excitation. Journal of Applied Physics, 2009, 106, 124910.  | 1.1 | 0         |
| 70 | Microporous layer for water morphology control in PEMFC. International Journal of Heat and Mass Transfer, 2009, 52, 2779-2791.                                       | 2.5 | 207       |
| 71 | Ab initio calculations of $f$ -orbital electron-phonon interaction in laser cooling. Physical Review B, 2009, 79, .  | 1.1 | 4         |
| 72 | Phonon recycling in ion-doped lasers. Applied Physics Letters, 2009, 95, .   | 1.5 | 5         |

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|----|--|-----|-----------|
| 73 | <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       |
| 74 | Material metrics for laser cooling of solids. <i>Physical Review B</i> , 2008, 77, .   | 1.1 | 11        |
| 75 | A multistage in-plane micro-thermoelectric cooler. <i>Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS)</i> , 2008, , .                                | 0.0 | 3         |
| 76 | 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        |
| 77 | Peripheral fins for blockage robustness. <i>International Journal of Heat and Mass Transfer</i> , 2007, 50, 2514-2520.   | 2.5 | 6         |
| 78 | Thermoelectric performance of films in the bismuth-tellurium and antimony-tellurium systems. <i>Journal of Applied Physics</i> , 2005, 97, 114903.   | 1.1 | 96        |
| 79 | Measured Performance of a Micro Thermoelectric Cooler. , 2004, , 415.  |     | 4         |
| 80 | 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       |
| 81 | 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       |
| 82 | Evaporation-Combustion Affected by In-Cylinder, Reciprocating Porous Regenerator. <i>Journal of Heat Transfer</i> , 2002, 124, 184-194.  | 1.2 | 52        |
| 83 | Effect of pore structure, randomness and size on effective mass diffusivity. <i>AIChE Journal</i> , 2002, 48, 15-24.   | 1.8 | 117       |
| 84 | 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       |
| 85 | Principles of Convective Heat Transfer. <i>Mechanical Engineering Series</i> , 2001, , .   | 0.1 | 90        |
| 86 | Gradient destruction in flow through a rigid matrix. <i>Journal of Fluid Mechanics</i> , 1986, 165, 221.   | 1.4 | 6         |