

Y Sungtaek Ju

List of Publications by Year in descending order

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119
papers

4,445
citations

126907

33
h-index

110387

64
g-index

119
all docs

119
docs citations

119
times ranked

4098
citing authors

#	ARTICLE	IF	CITATIONS
1	Phonon scattering in silicon films with thickness of order 100 nm. Applied Physics Letters, 1999, 74, 3005-3007.	3.3	580
2	Highly efficient electrocaloric cooling with electrostatic actuation. Science, 2017, 357, 1130-1134.	12.6	314
3	HEAT CONDUCTION IN NOVEL ELECTRONIC FILMS. Annual Review of Materials Research, 1999, 29, 261-293.	5.5	161
4	Low-stiffness silicon cantilevers with integrated heaters and piezoresistive sensors for high-density AFM thermomechanical data storage. Journal of Microelectromechanical Systems, 1998, 7, 69-78.	2.5	150
5	Heat conduction in graphite-nanoplatelet-reinforced polymer nanocomposites. Applied Physics Letters, 2006, 89, 023117.	3.3	149
6	A solid-state refrigerator based on the electrocaloric effect. Applied Physics Letters, 2012, 100, .	3.3	146
7	Sub-Continuum Simulations of Heat Conduction in Silicon-on-Insulator Transistors. Journal of Heat Transfer, 2001, 123, 130-137.	2.1	132
8	Fabrication and Characterization of the Capillary Performance of Superhydrophilic Cu Micropost Arrays. Journal of Microelectromechanical Systems, 2010, 19, 581-588.	2.5	132
9	A comparative study of the morphology and wetting characteristics of micro/nanostructured Cu surfaces for phase change heat transfer applications. Journal of Adhesion Science and Technology, 2013, 27, 2163-2176.	2.6	126
10	Multi-artery heat pipe spreader: Experiment. International Journal of Heat and Mass Transfer, 2010, 53, 2662-2669.	4.8	110
11	Experimental and Numerical Study of Single Bubble Dynamics on a Hydrophobic Surface. Journal of Heat Transfer, 2009, 131, .	2.1	108
12	Single bubble dynamics on a superhydrophilic surface with artificial nucleation sites. International Journal of Heat and Mass Transfer, 2011, 54, 1572-1577.	4.8	105
13	Planar vapor chamber with hybrid evaporator wicks for the thermal management of high-heat-flux and high-power optoelectronic devices. International Journal of Heat and Mass Transfer, 2013, 60, 163-169.	4.8	103
14	Phonon heat transport in silicon nanostructures. Applied Physics Letters, 2005, 87, 153106.	3.3	99
15	Thermal characterization of anisotropic thin dielectric films using harmonic Joule heating. Thin Solid Films, 1999, 339, 160-164.	1.8	93
16	Characterization and Modeling of the Heat Transfer Performance of Nanostructured Cu Micropost Wicks. Journal of Heat Transfer, 2011, 133, .	2.1	86
17	Solid-State Refrigeration Based on the Electrocaloric Effect for Electronics Cooling. Journal of Electronic Packaging, Transactions of the ASME, 2010, 132, .	1.8	75
18	Multi-artery heat-pipe spreader: Lateral liquid supply. International Journal of Heat and Mass Transfer, 2011, 54, 2334-2340.	4.8	74

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19	Bubble nucleation on hydrophobic islands provides evidence to anomalously high contact angles of nanobubbles. Applied Physics Letters, 2008, 93, .	3.3	69
20	Process-dependent thermal transport properties of silicon-dioxide films deposited using low-pressure chemical vapor deposition. Journal of Applied Physics, 1999, 85, 7130-7134.	2.5	61
21	Short-Time-Scale Thermal Mapping of Microdevices Using a Scanning Thermoreflectance Technique. Journal of Heat Transfer, 1998, 120, 306-313.	2.1	57
22	INTRINSIC-CARRIER THERMAL RUNAWAY IN SILICON MICROCANTILEVERS. Microscale Thermophysical Engineering, 1999, 3, 217-228.	1.2	54
23	Susceptibility of Primary Sensory Cortex to Spreading Depolarizations. Journal of Neuroscience, 2016, 36, 4733-4743.	3.6	54
24	EWOD (electrowetting on dielectric) digital microfluidics powered by finger actuation. Lab on A Chip, 2014, 14, 1117.	6.0	53
25	Copper-Based Conductive Composites with Tailored Thermal Expansion. ACS Applied Materials & Interfaces, 2013, 5, 10966-10974.	8.0	45
26	Cortical Sensory Plasticity in a Model of Migraine with Aura. Journal of Neuroscience, 2012, 32, 15252-15261.	3.6	43
27	Minimum conditions for the induction of cortical spreading depression in brain slices. Journal of Neurophysiology, 2014, 112, 2572-2579.	1.8	43
28	Pyroelectric energy harvesting using liquid-based switchable thermal interfaces. Sensors and Actuators A: Physical, 2013, 189, 100-107.	4.1	42
29	Short-timescale thermal mapping of semiconductor devices. IEEE Electron Device Letters, 1997, 18, 169-171.	3.9	40
30	Nanoscale Heat Conduction Across Metal-Dielectric Interfaces. Journal of Heat Transfer, 2006, 128, 919-925.	2.1	39
31	Heterogeneous incidence and propagation of spreading depolarizations. Journal of Cerebral Blood Flow and Metabolism, 2017, 37, 1748-1762.	4.3	39
32	Study of interface effects in thermoelectric microrefrigerators. Journal of Applied Physics, 2000, 88, 4135.	2.5	38
33	Experimental Study of Heat Conduction in Aqueous Suspensions of Aluminum Oxide Nanoparticles. Journal of Heat Transfer, 2008, 130, .	2.1	38
34	Experimental study of heat transfer between thin liquid films flowing down a vertical string in the Rayleigh-Plateau instability regime and a counterflowing gas stream. International Journal of Heat and Mass Transfer, 2017, 108, 830-840.	4.8	38
35	Water vapor capturing using an array of traveling liquid beads for desalination and water treatment. Science Advances, 2019, 5, eaav7662.	10.3	38
36	Head protrusion and its implications on head-disk interface reliability. IEEE Transactions on Magnetics, 2001, 37, 1842-1844.	2.1	33

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37	Thermal conductivity of sintered copper samples prepared using 3D printing-compatible polymer composite filaments. Additive Manufacturing, 2018, 24, 479-485.	3.0	33
38	Thermohydraulic characteristics of a multi-string direct-contact heat exchanger. International Journal of Heat and Mass Transfer, 2018, 126, 536-544.	4.8	33
39	Dynamics of thin liquid films on vertical cylindrical fibres. Journal of Fluid Mechanics, 2019, 865, 303-327.	3.4	33
40	Development and characterization of a microfluidic chamber incorporating fluid ports with active suction for localized chemical stimulation of brain slices. Lab on A Chip, 2011, 11, 2247.	6.0	32
41	Effects of Nozzle Geometry on the Fluid Dynamics of Thin Liquid Films Flowing down Vertical Strings in the Rayleigh-Plateau Regime. Langmuir, 2017, 33, 6292-6299.	3.5	32
42	Reversible thermal interfaces based on microscale dielectric liquid layers. Applied Physics Letters, 2009, 94, 211904.	3.3	30
43	Drag reduction in Stokes flows over spheres with nanostructured superhydrophilic surfaces. Journal of Applied Physics, 2010, 107, .	2.5	30
44	Experimental characterization of thermal conductance switching in magnetorheological fluids. Journal of Applied Physics, 2010, 107, .	2.5	29
45	Thermal mapping of interconnects subjected to brief electrical stresses. IEEE Electron Device Letters, 1997, 18, 512-514.	3.9	26
46	Thermal Conduction and Viscous Heating in Microscale Couette Flows. Journal of Heat Transfer, 2000, 122, 817-818.	2.1	26
47	Thermal conductance switching based on the actuation of liquid droplets through the electrowetting on dielectric (EWOD) phenomenon. Applied Thermal Engineering, 2016, 98, 189-195.	6.0	26
48	Nanoscale heat conduction across tunnel junctions. Applied Physics Letters, 2005, 86, 203113.	3.3	25
49	Impact of Nonequilibrium Between Electrons and Phonons on Heat Transfer in Metallic Nanoparticles Suspended in Dielectric Media. Journal of Heat Transfer, 2005, 127, 1400-1402.	2.1	25
50	An Investigation of a Tunable Magnetomechanical Thermal Switch. Journal of Heat Transfer, 2011, 133, .	2.1	24
51	Micro-post evaporator wicks with improved phase change heat transfer performance. International Journal of Heat and Mass Transfer, 2012, 55, 6163-6169.	4.8	24
52	A Combined Experimental and Numerical Modeling Study of the Deformation and Rupture of Axisymmetric Liquid Bridges under Coaxial Stretching. Langmuir, 2015, 31, 10173-10182.	3.5	24
53	Conducting thermal energy to the membrane/water interface for the enhanced desalination of hypersaline brines using membrane distillation. Journal of Membrane Science, 2021, 626, 119188.	8.2	21
54	Multifunctional integration of thin-film silicon solar cells on carbon-fiber-reinforced epoxy composites. Solar Energy, 2010, 84, 450-458.	6.1	19

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55	Experimental study of a string-based counterflow wet electrostatic precipitator for collection of fine and ultrafine particles. Journal of the Air and Waste Management Association, 2021, 71, 851-865.	1.9	19
56	An innovative passive cooling method for high performance light-emitting diodes. , 2012, , .		18
57	Direct characterization of the electrocaloric effects in thin films supported on substrates. Applied Physics Letters, 2013, 103, .	3.3	18
58	A highly effective multi-string humidifier with a low gas stream pressure drop for desalination. Desalination, 2019, 449, 92-100.	8.2	18
59	Impact of Interface Resistance on Pulsed Thermoelectric Cooling. Journal of Heat Transfer, 2008, 130, .	2.1	17
60	A combined experimental and numerical study of temperature rise in GMR sensors due to self-heating. IEEE Transactions on Magnetics, 2001, 37, 1701-1703.	2.1	16
61	Patterning damage in narrow trackwidth spin-valve sensors. Applied Physics Letters, 2003, 83, 401-403.	3.3	15
62	Comparative Study of Copper Oxidation Schemes and Their Effects on Surface Wettability. , 2008, , .		14
63	Microchannel cooling device with perforated side walls: Design and modeling. International Journal of Heat and Mass Transfer, 2014, 68, 174-183.	4.8	14
64	THERMAL CHARACTERIZATION OF IC PASSIVATION LAYERS USING JOULE HEATING AND OPTICAL THERMOMETRY. Microscale Thermophysical Engineering, 1998, 2, 101-110.	1.2	13
65	A Coupled Thermal and Mechanical Model of a Thermal Energy Harvesting Device. , 2009, , .		13
66	Electric field dependence of the Curie temperature of ferroelectric poly(vinylidene fluoride-trifluoroethylene) co-polymers for pyroelectric energy harvesting. Smart Materials and Structures, 2012, 21, 022001.	3.5	13
67	Solid-Liquid Hybrid Thermal Interfaces for Low-Contact Pressure Thermal Switching. Journal of Heat Transfer, 2014, 136, .	2.1	13
68	Wake vortex regimes of a pitching cantilever plate in quiescent air and their correlation with mean flow generation. Journal of Fluids and Structures, 2019, 84, 408-420.	3.4	13
69	Modelling film flows down a fibre influenced by nozzle geometry. Journal of Fluid Mechanics, 2020, 901, .	3.4	13
70	Thermal management and control of wearable devices. IScience, 2022, 25, 104587.	4.1	13
71	Three-dimensional characteristics of the jet flows induced by a pitching plate in a quiescent fluid. Journal of Fluid Mechanics, 2020, 887, .	3.4	12
72	Switchable Thermal Interfaces Based on Discrete Liquid Droplets. Micromachines, 2012, 3, 10-20.	2.9	11

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73	Thermally-driven coalescence in thin liquid film flowing down a fibre. Journal of Fluid Mechanics, 2021, 916, .	3.4	11
74	Exploration of thermolithography for micro- and nanomanufacturing. Applied Physics Letters, 2006, 88, 123110.	3.3	10
75	Mechanisms of power dissipation in piezoelectric fans and their correlation with convective heat transfer performance. Sensors and Actuators A: Physical, 2018, 272, 242-252.	4.1	10
76	Thermal switches based on coplanar EWOD for satellite thermal control. Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 2008, , .	0.0	9
77	Finger-powered electrophoretic transport of discrete droplets for portable digital microfluidics. Lab on A Chip, 2016, 16, 2521-2531.	6.0	9
78	Desalinating a real hyper-saline pre-treated produced water via direct-heat vacuum membrane distillation. Water Research, 2022, 218, 118503.	11.3	9
79	Metal-Matrix Nanocomposites with Tailored Coefficients of Thermal Expansion for Improved Thermomechanical Reliability. Journal of Electronic Materials, 2012, 41, 1020-1023.	2.2	8
80	Brownian Microscopy for Simultaneous <i>In Situ</i> Measurements of the Viscosity and Velocity Fields in Steady Laminar Microchannel Flows. Journal of Microelectromechanical Systems, 2008, 17, 1135-1143.	2.5	7
81	High-power density pyroelectric energy harvesters incorporating switchable liquid-based thermal interfaces. , 2012, , .		6
82	Process dependence of the thermal conductivity of image reversal photoresist layers. Journal of Vacuum Science & Technology B, 2007, 25, 224.	1.3	5
83	Thermal engineering of giant magnetoresistive (GMR) sensors: alternative dielectric gap. IEEE Transactions on Magnetics, 2002, 38, 2259-2261.	2.1	4
84	A tunable hemispherical platform for non-stretching curved flexible electronics and optoelectronics. Journal of Applied Physics, 2014, 116, 044508.	2.5	4
85	Capillary-Driven Rise of Well-Wetting Liquid on the Outer Surface of Cylindrical Nozzles. Langmuir, 2021, 37, 10413-10423.	3.5	4
86	Nanostructured c-post wicks for advanced heat pipes. , 2011, , .		3
87	Characterization of the electrocaloric effect and hysteresis loss in relaxor ferroelectric thin films under alternating current bias fields. Applied Physics Letters, 2014, 104, 251913.	3.3	3
88	Study of the Fluid Dynamics of Thin Liquid Films Flowing Down a Vertical String With Counterflow of Gas. , 2015, , .		3
89	Analysis of thermocapacitive effects in electric double layers under a size modified mean field theory. Applied Physics Letters, 2017, 111, .	3.3	3
90	Nanoscale Heat Conduction Across Metal-Dielectric Interfaces. , 2005, , 205.		2

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91	A Tunable Magnetomechanical Thermal Switch for Thermal Management Purposes. , 2009, , .		2
92	Micro- and nanoscale thermal phenomena in thin-film magnetic recording heads. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 1276-1283.	2.1	1
93	Single Bubble Dynamics on a Hydrophobic Surface. , 2007, , 687.		1
94	Experimental Study of Heat Conduction in Aqueous Suspensions of Aluminum Oxide Nanoparticles. , 2007, , .		1
95	Bubble Nucleation on Nanoscopically Smooth Hydrophobic Islands. , 2008, , .		1
96	Microscale liquid-based mechanical elements for multifunctional integration. Journal of Composite Materials, 2013, 47, 65-75.	2.4	1
97	Deployable and Conformal Planar Micro-Devices: Design and Model Validation. Micromachines, 2014, 5, 528-546.	2.9	1
98	Development of High Temperature Liquid Metal Heat Transfer Fluids for CSP Applications. , 2014, , .		1
99	Flow and Heat Transfer in Liquid Films Flowing Over Highly Curved Surfaces. , 2015, , .		1
100	Heat Transfer Augmentation Using Scale-Roughened Surfaces for Low-Reynolds Number Flows Generated by Piezoelectric Fans. , 2019, , .		1
101	Analysis and Experimental Characterization of Statistical Errors in Brownian Microscopy. , 2006, , .		1
102	Microfabricated Electrode Array Compatible With Optical Imaging of Intrinsic Signals During Somatosensory Stimulation and Cortical Spreading Depression. , 2006, , .		1
103	Short-timescale thermal mapping of interconnects. , 0, , .		0
104	A study of heat generation and transport in tunnel junctions. , 0, , .		0
105	Experimental and Numerical Study of Single Bubble Dynamics on a Hydrophobic Surface. , 2007, , 301.		0
106	Thermal patterning of amorphous fluoropolymer layers. Sensors and Actuators A: Physical, 2008, 148, 111-114.	4.1	0
107	On-chip characterization of the transport properties of liquids using microfluidic channel-based Brownian microscopy. Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 2008, , .	0.0	0
108	On-chip characterization of the mass diffusivity of binary mixtures using Brownian microscopy. Sensors and Actuators A: Physical, 2009, 155, 39-46.	4.1	0

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109	The Effect of Surface Treatment on the Drag Characteristics in Laminar Flow. , 2009, , .		0
110	Liquid-Mediated Reversible Thermal Interface for Satellite Thermal Management. , 2009, , .		0
111	Heat Transfer Performance of Superhydrophilic Nanostructured Cu Micropost Wicks for Micro Heat Pipes. , 2010, , .		0
112	Performance Modeling of Micropost Wicks for Micro Heat Pipes at Low Heat Fluxes. , 2010, , .		0
113	Microfluidic chamber with active suction ports for localized chemical stimulation of brain slices. , 2010, , .		0
114	Finger-triggered digital microfluidics. , 2013, , .		0
115	Theoretical Analysis of Pyroelectric Harvesting of Low-Grade Exhaust Waste Heat. , 2015, , .		0
116	Finger-powered droplet actuation by electrophoretic force for portable microfluidics. , 2015, , .		0
117	Finger-Powered Electro-Digital-Microfluidics. Methods in Molecular Biology, 2017, 1572, 293-311.	0.9	0
118	Impact of Micro/Nanoscale Heat Transfer in Silicon Substrates on Thermal Interface Resistance Characterization. , 2008, , .		0
119	Deployable MEMS Devices for Minimally Invasive Monitoring of Cortical Activities. , 2013, , .		0