

Tiejun Zhang

List of Publications by Year in descending order

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130
papers

4,660
citations

126858

33
h-index

102432

66
g-index

131
all docs

131
docs citations

131
times ranked

4481
citing authors

#	ARTICLE	IF	CITATIONS
1	Efficient processing of μ CT images using deep learning tools for generating digital material twins of woven fabrics. <i>Composites Science and Technology</i> , 2022, 217, 109091.	3.8	17
2	Direct solar vapor generation with micro-3D printed hydrogel device. <i>EcoMat</i> , 2022, 4, .	6.8	19
3	Biomimetic on-chip filtration enabled by direct micro-3D printing on membrane. <i>Scientific Reports</i> , 2022, 12, 8178.	1.6	7
4	Corrosion inhibition of layered double hydroxides for metal-based systems. <i>Nano Materials Science</i> , 2021, 3, 47-67.	3.9	24
5	Impact of PEGDA photopolymerization in micro-stereolithography on 3D printed hydrogel structure and swelling. <i>Soft Matter</i> , 2021, 17, 7188-7195.	1.2	17
6	Designing a next generation solar crystallizer for real seawater brine treatment with zero liquid discharge. <i>Nature Communications</i> , 2021, 12, 998.	5.8	136
7	Enhanced Liquid Propagation and Wicking Along Nanostructured Porous Surfaces. <i>Advanced Engineering Materials</i> , 2021, 23, 2100118.	1.6	7
8	Deep learning based semantic segmentation of μ CT images for creating digital material twins of fibrous reinforcements. <i>Composites Part A: Applied Science and Manufacturing</i> , 2020, 139, 106131.	3.8	33
9	Cloaking Dynamics on Lubricant-Infused Surfaces. <i>Advanced Materials Interfaces</i> , 2020, 7, 2000983.	1.9	24
10	Refractory Ultrathin Nanocomposite Solar Absorber with Superior Spectral Selectivity and Thermal Stability. <i>Advanced Optical Materials</i> , 2020, 8, 2000679.	3.6	20
11	Empowering microfluidics by micro-3D printing and solution-based mineral coating. <i>Soft Matter</i> , 2020, 16, 6841-6849.	1.2	9
12	Accelerated Development of Refractory Nanocomposite Solar Absorbers using Bayesian Optimization. <i>MRS Advances</i> , 2020, 5, 1537-1545.	0.5	2
13	Condensation of Satellite Droplets on Lubricant-Cloaked Droplets. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 22246-22255.	4.0	24
14	Imaging and characterizing fluid invasion in micro-3D printed porous devices with variable surface wettability. <i>Soft Matter</i> , 2019, 15, 6978-6987.	1.2	23
15	Microstructural evolution within mushy zone during paraffin's melting and solidification. <i>International Journal of Heat and Mass Transfer</i> , 2019, 141, 769-778.	2.5	31
16	Machine Learning for 3D Image Recognition to Determine Porosity and Lithology of Heterogeneous Carbonate Rock. , 2019, , .		3
17	Quantum Mechanical Prediction of Wettability of Multiphase Fluids in Solid Systems at Elevated Temperature. <i>Journal of Physical Chemistry C</i> , 2019, 123, 12753-12761.	1.5	4
18	Biomimetic Hierarchical TiO_2/CuO Nanowire Arrays-Coated Copper Meshes with Superwetting and Self-Cleaning Properties for Efficient Oil/Water Separation. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 2569-2577.	3.2	64

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19	Nanomaterials for the water-energy nexus. MRS Bulletin, 2019, 44, 59-66.	1.7	39
20	CFD-based design and simulation of hydrocarbon ejector for cooling. Energy, 2019, 167, 346-358.	4.5	37
21	Enhancement of Interfacial Solar Vapor Generation by Environmental Energy. Joule, 2018, 2, 1331-1338.	11.7	507
22	NMR-MRI Characterization of Low-Salinity Water Alternating CO2 Flooding in tight Carbonate. , 2018, , .		0
23	Directional Passive Transport of Microdroplets in Oil-Infused Diverging Channels for Effective Condensate Removal. ACS Applied Materials & Interfaces, 2018, 10, 20910-20919.	4.0	22
24	Enhancing Visible Light Photocatalysis with Hydrogenated Titanium Dioxide for Anti-Fouling Applications. MRS Advances, 2018, 3, 3181-3187.	0.5	1
25	Novel Receiver-Enhanced Solar Vapor Generation: Review and Perspectives. Energies, 2018, 11, 253.	1.6	59
26	Effect of Mini/Micro/Nanostructures on Filmwise Condensation of Low-Surface-Tension Fluids. Journal of Heat Transfer, 2018, 140, .	1.2	6
27	Sputtered SiC coatings for radiative cooling and light absorption. Journal of Photonics for Energy, 2018, 9, 1.	0.8	9
28	MORPHOLOGICAL EVOLUTION OF MUSHY ZONE AND EFFECT OF MUSHY ZONE CONSTANT DURING MELTING PROCESS. , 2018, , .		1
29	EFFECTIVE SOLAR DISTILLATION WITH THERMAL CONCENTRATION AND ANTI-FOULING WICK. , 2018, , .		0
30	DAYTIME RADIATIVE COOLING WITH POLYMER COATINGS. , 2018, , .		0
31	Imaging micro-scale multiphase flow in 3D-printed porous micromodels. , 2018, , .		3
32	Suppressing high-frequency temperature oscillations in microchannels with surface structures. Applied Physics Letters, 2017, 110, .	1.5	28
33	How Nanostructures Affect Water Droplet Nucleation on Superhydrophobic Surfaces. Journal of Heat Transfer, 2017, 139, .	1.2	26
34	Parametric study of thin film evaporation from nanoporous membranes. Applied Physics Letters, 2017, 111, .	1.5	53
35	Direct Prediction of Calcite Surface Wettability with First-Principles Quantum Simulation. Journal of Physical Chemistry Letters, 2017, 8, 5309-5316.	2.1	30
36	Plasmonic nanofluids enhanced solar thermal transfer liquid. AIP Conference Proceedings, 2017, , .	0.3	5

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37	Near-Perfect Ultrathin Nanocomposite Absorber with Self-Formed Topping Plasmonic Nanoparticles. <i>Advanced Optical Materials</i> , 2017, 5, 1700222.	3.6	35
38	Nanostructured TiO ₂ /CuO dual-coated copper meshes with superhydrophilic, underwater superoleophobic and self-cleaning properties for highly efficient oil/water separation. <i>Chemical Engineering Journal</i> , 2017, 328, 497-510.	6.6	120
39	Insights into the Impact of Surface Hydrophobicity on Droplet Coalescence and Jumping Dynamics. <i>Langmuir</i> , 2017, 33, 8574-8581.	1.6	36
40	A novel approach to the analysis of squeezed-film air damping in microelectromechanical systems. <i>Journal of Micromechanics and Microengineering</i> , 2017, 27, 015012.	1.5	15
41	Condensation of Low-Surface-Tension Fluids on Microstructured Surfaces at Low Temperature. , 2017, , .		0
42	Dynamics of Microscale Liquid Propagation in Micropillar Arrays. <i>Langmuir</i> , 2017, 33, 6620-6629.	1.6	16
43	Localized Surface Plasmon-Enhanced Ultrathin Film Broadband Nanoporous Absorbers. <i>Advanced Optical Materials</i> , 2016, 4, 1255-1264.	3.6	42
44	Controlled Wetting in Nanoporous Membranes for Thin Film Evaporation. <i>Journal of Heat Transfer</i> , 2016, 138, .	1.2	9
45	Surface Structure Enhanced Microchannel Flow Boiling. <i>Journal of Heat Transfer</i> , 2016, 138, .	1.2	129
46	Design of high-performance refrigerant ejector for sub-ambient cooling. , 2016, , .		1
47	Prediction of Refrigerant Flow Boiling Hysteresis With an Augmented Separated-Flow Model. , 2016, , .		0
48	Water recovery in a concentrated solar power plant. <i>AIP Conference Proceedings</i> , 2016, , .	0.3	7
49	Effective dielectric constants and spectral density analysis of plasmonic nanocomposites. <i>Journal of Applied Physics</i> , 2016, 120, 163103.	1.1	29
50	Suppressed Dry-out in Two-Phase Microchannels via Surface Structures. <i>Journal of Heat Transfer</i> , 2016, 138, .	1.2	3
51	Effect of Surface Wettability and Gas/Liquid Velocity Ratio on Microscale Two-Phase Flow Patterns. , 2016, , .		2
52	Unidirectional Fast Growth and Forced Jumping of Stretched Droplets on Nanostructured Microporous Surfaces. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 21776-21786.	4.0	64
53	Analysis of squeeze film air damping in MEMS with lattice Boltzmann method. , 2016, , .		1
54	Steam generation under one sun enabled by a floating structure with thermal concentration. <i>Nature Energy</i> , 2016, 1, .	19.8	870

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55	Pore-Scale Experimental and Numerical Study on Permeability Characterization of Abu Dhabi Offshore Carbonate Micromodel. , 2016, , .		1
56	Broadband light absorption by silver nanoparticle decorated silica nanospheres. RSC Advances, 2016, 6, 107951-107959.	1.7	10
57	Prediction of thin liquid film evaporation characteristics with a thermal lattice boltzmann method. , 2016, , .		1
58	Model optimization of dry-out heat flux from micropillar wick structures. , 2016, , .		1
59	Sunlight-Sensitive Anti-Fouling Nanostructured TiO ₂ coated Cu Meshes for Ultrafast Oily Water Treatment. Scientific Reports, 2016, 6, 25414.	1.6	49
60	Characteristics of Jumping Droplet-Enhanced Condensation on Nanostructured Micromesh Surface. , 2016, , .		3
61	An optimal approach to output-feedback robust model predictive control of LPV systems with disturbances. International Journal of Robust and Nonlinear Control, 2016, 26, 3253-3273.	2.1	41
62	Decreasing a Horizon Robust Model Predictive Control With Specified Settling Time To A Terminal Constraint Set. Asian Journal of Control, 2016, 18, 664-673.	1.9	6
63	Synthesis and optical characterization of carbon nanotube arrays. Materials Research Bulletin, 2016, 77, 243-252.	2.7	19
64	Prediction and Characterization of Dry-out Heat Flux in Micropillar Wick Structures. Langmuir, 2016, 32, 1920-1927.	1.6	62
65	Design of High-Throughput Superoleophobic Copper Meshes for Oil-Water Separation. Materials Research Society Symposia Proceedings, 2015, 1745, 8.	0.1	2
66	Pore-Scale Lattice Boltzmann Simulation of Oil-Water Flow in Carbonate Rock with Variable Wettability. , 2015, , .		3
67	Lattice Boltzmann Simulation of Rarefied Gas Flow Along Moving Rigid Objects in Micro-Cavities. , 2015, , .		1
68	Conceptual Design and Analysis of Hydrocarbon-Based Solar Thermal Power and Ejector Cooling Systems in Hot Climates. Journal of Solar Energy Engineering, Transactions of the ASME, 2015, 137, .	1.1	25
69	Superhydrophobic CuO nanoneedle-covered copper surfaces for anticorrosion. Journal of Materials Chemistry A, 2015, 3, 4374-4388.	5.2	202
70	Characterization of a Compact Organic Rankine Cycle Prototype for Low-grade Transient Solar Energy Conversion. Energy Procedia, 2015, 69, 1113-1122.	1.8	14
71	Reducing instability and enhancing critical heat flux using integrated micropillars in two-phase microchannel heat sinks. , 2015, , .		8
72	Characterization of Energy Efficient Vapor Compression Cycle Prototype with a Linear Compressor. Energy Procedia, 2015, 75, 3253-3258.	1.8	13

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73	Transient Characterization of Multiple Parabolic Trough Collector Loops in a 100 MW CSP Plant for Solar Energy Harvesting. <i>Energy Procedia</i> , 2015, 69, 24-33.	1.8	19
74	Volumetric solar heating of nanofluids for direct vapor generation. <i>Nano Energy</i> , 2015, 17, 290-301.	8.2	350
75	TRANSIENT CHARACTERISTICS AND CONTROL OF ACTIVE THERMAL MANAGEMENT SYSTEMS. <i>Annual Review of Heat Transfer</i> , 2015, 18, 245-328.	0.3	5
76	Microscopic Droplet Formation and Energy Transport Analysis of Condensation on Scalable Superhydrophobic Nanostructured Copper Oxide Surfaces. <i>Langmuir</i> , 2014, 30, 14498-14511.	1.6	72
77	Robust Model Predictive Control for Discrete-Time Takagi-Sugeno Fuzzy Systems With Structured Uncertainties and Persistent Disturbances. <i>IEEE Transactions on Fuzzy Systems</i> , 2014, 22, 1213-1228.	6.5	97
78	Quasi-min-max fuzzy model predictive control of direct methanol fuel cells. <i>Fuzzy Sets and Systems</i> , 2014, 248, 39-60.	1.6	8
79	Output Feedback Model Predictive Control of Linear Parameter Varying Systems. , 2014, , .		1
80	Thin Film Evaporation in Microchannel Membrane for Solar Vapor Generation. , 2014, , .		1
81	Vapor compression refrigeration cycle for electronics cooling – Part I: Dynamic modeling and experimental validation. <i>International Journal of Heat and Mass Transfer</i> , 2013, 66, 911-921.	2.5	37
82	Vapor compression refrigeration cycle for electronics cooling – Part II: gain-scheduling control for critical heat flux avoidance. <i>International Journal of Heat and Mass Transfer</i> , 2013, 66, 922-929.	2.5	19
83	First-Principle Dynamic Modeling of a Linear Micro-Compressor. , 2013, , .		1
84	High Efficiency Solar to Electric Energy Conversion through Spectrum Splitting and Multi-channel Full Spectrum Harvesting. <i>Materials Research Society Symposia Proceedings</i> , 2013, 1493, 31-36.	0.1	1
85	Fundamental Considerations for Designing Compact Solar Thermal Power and Ejector Cooling Systems in Hot Climates. , 2013, , .		1
86	Robust model predictive control of uncertain linear systems with persistent disturbances and input constraints. , 2013, , .		6
87	Investigation of Two-Phase Frictional Pressure Drop and Thermal Entrance Length in a Minichannel Helical Heat Exchanger. , 2013, , .		0
88	A Separated-Flow Model for Predicting Flow Boiling Critical Heat Flux and Pressure Drop Characteristics in Microchannels. , 2012, , .		1
89	Design of a microscale organic Rankine cycle for high-concentration photovoltaics waste thermal power generation. , 2012, , .		8
90	Pre- and Post-Critical Heat Flux Analyses in a Saturated Refrigerant Flow Boiling System. , 2012, , .		0

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91	Flow Stability Analysis of Two-Phase Cooling Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 3096-3101.	0.4	0
92	Transient Vapor Compression Refrigeration Cycle for Electronics Cooling: Part 1—Distributed Model Validation. , 2011, , .		0
93	Stability analysis and maldistribution control of two-phase flow in parallel evaporating channels. International Journal of Heat and Mass Transfer, 2011, 54, 5298-5305.	2.5	58
94	Two-phase refrigerant flow instability analysis and active control in transient electronics cooling systems. International Journal of Multiphase Flow, 2011, 37, 84-97.	1.6	75
95	Experimental Model Identification and Controller Design of a Vapor Compression Cycle for Electronics Cooling. , 2010, , .		0
96	Active Flow Instability Control for Transient Two-Phase Electronics Cooling. , 2010, , .		0
97	The steady-state modeling and optimization of a refrigeration system for high heat flux removal. Applied Thermal Engineering, 2010, 30, 2347-2356.	3.0	49
98	Analysis and active control of pressure-drop flow instabilities in boiling microchannel systems. International Journal of Heat and Mass Transfer, 2010, 53, 2347-2360.	2.5	119
99	Experimental identification of evaporator dynamics for vapor compression refrigeration cycle during phase transition. , 2010, , .		4
100	Parallel-channel flow instabilities and active control schemes in two-phase microchannel heat exchanger systems. , 2010, , .		3
101	Extremum seeking micro-thermal-fluid control for active two-phase microelectronics cooling. , 2010, , .		3
102	Piecewise affine model-based H _∞ static output feedback control of constrained non-linear processes. IET Control Theory and Applications, 2010, 4, 2315-2330.	1.2	16
103	Two-phase flow instability analysis for transient electronics cooling. , 2010, , .		0
104	Micro-thermal-fluid transient analysis and active control for two-phase microelectronics cooling. , 2010, , .		2
105	Experimental Model Identification and Controller Design of a Vapor Compression Cycle for Electronics Cooling. , 2010, , .		0
106	Stability analysis of heat exchanger dynamics. , 2009, , .		4
107	Piecewise Fuzzy Anti-Windup Dynamic Output Feedback Control of Nonlinear Processes With Amplitude and Rate Actuator Saturations. IEEE Transactions on Fuzzy Systems, 2009, 17, 253-264.	6.5	42
108	The Steady-State Modeling and Analysis of a Two-Loop Cooling System for High Heat Flux Removal. , 2009, , .		1

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109	Experimental Identification of Component Parameters for Multiple-Evaporator Vapor Compression Refrigeration Cycle. , 2009, , .		1
110	Ledinegg instability in microchannels. International Journal of Heat and Mass Transfer, 2009, 52, 5661-5674.	2.5	155
111	Output tracking and synchronization of chaotic Chua's circuit with disturbances via model predictive regulator. Chaos, Solitons and Fractals, 2009, 39, 810-820.	2.5	10
112	Output tracking of constrained nonlinear processes with offset-free input-to-state stable fuzzy predictive control. Automatica, 2009, 45, 900-909.	3.0	59
113	Stability analysis of refrigeration systems for electronics cooling. , 2009, , .		2
114	Rapid Load Following of an SOFC Power System via Stable Fuzzy Predictive Tracking Controller. IEEE Transactions on Fuzzy Systems, 2009, 17, 357-371.	6.5	52
115	Approaches to Robust Filtering Design of Discrete Time Fuzzy Dynamic Systems. IEEE Transactions on Fuzzy Systems, 2008, 16, 331-340.	6.5	50
116	Model predictive control for nonlinear boiler-turbine system based on fuzzy gain scheduling. , 2008, , .		8
117	Robust Constrained Fuzzy Affine Model Predictive Control With Application to a Fluidized Bed Combustion Plant. IEEE Transactions on Control Systems Technology, 2008, 16, 1047-1056.	3.2	29
118	Fuzzy dynamic modeling and predictive load following control of a solid oxide fuel cell power system. , 2008, , .		2
119	Dynamic Modeling of Refrigeration Cycle for Electronics Cooling. , 2008, , .		9
120	The Steady-State Modeling and Static System Design of a Refrigeration System for High Heat Flux Removal. , 2008, , .		3
121	A Multi-Objective Optimizing Control Method for Boiler-Turbine Coordinated Control. , 2007, , .		2
122	Stable Model Predictive Control of Fuzzy Affine Systems with Input and State Constraints. IEEE International Conference on Fuzzy Systems, 2007, , .	0.0	2
123	Output Tracking of Piecewise-Linear Systems via Error Feedback Regulator With Application to Synchronization of Nonlinear Chua's Circuit. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2007, 54, 1852-1863.	0.1	47
124	Fuzzy Constrained Min-Max Model Predictive Control Based on Piecewise Lyapunov Functions. IEEE Transactions on Fuzzy Systems, 2007, 15, 686-698.	6.5	64
125	Robust Output Feedback Control of Constrained Nonlinear Processes via Piecewise Fuzzy Anti-Windup Dynamic Compensator. Proceedings of the American Control Conference, 2007, , .	0.0	1
126	Terminal Cost Constraint based Stable Fuzzy Model Predictive Control of A Nonlinear Fluidized Bed Combustion Plant. , 2007, , .		0

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127	A PSO-BASED MULTIVARIABLE FUZZY DECISION-MAKING PREDICTIVE CONTROLLER FOR A ONCE-THROUGH 300-MW POWER PLANT. <i>Cybernetics and Systems</i> , 2006, 37, 417-441.	1.6	7
128	Output regulation of discrete-time piecewise-linear systems with application to controlling chaos. <i>IEEE Transactions on Circuits and Systems Part 2: Express Briefs</i> , 2006, 53, 249-253.	2.3	20
129	Observer based Fuzzy Integral Model Predictive Control using Piecewise Lyapunov Functions. , 2006, , .		0
130	Output Tracking of Discrete-Time Piecewise Linear Systems via Error Feedback. , 2006, , .		4