

Tiejun Zhang

List of Publications by Year in descending order

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130
papers

4,660
citations

126907

33
h-index

102487

66
g-index

131
all docs

131
docs citations

131
times ranked

4481
citing authors

#	ARTICLE	IF	CITATIONS
1	Steam generation under one sun enabled by a floating structure with thermal concentration. <i>Nature Energy</i> , 2016, 1, .	39.5	870
2	Enhancement of Interfacial Solar Vapor Generation by Environmental Energy. <i>Joule</i> , 2018, 2, 1331-1338.	24.0	507
3	Volumetric solar heating of nanofluids for direct vapor generation. <i>Nano Energy</i> , 2015, 17, 290-301.	16.0	350
4	Superhydrophobic CuO nanoneedle-covered copper surfaces for anticorrosion. <i>Journal of Materials Chemistry A</i> , 2015, 3, 4374-4388.	10.3	202
5	Ledinegg instability in microchannels. <i>International Journal of Heat and Mass Transfer</i> , 2009, 52, 5661-5674.	4.8	155
6	Designing a next generation solar crystallizer for real seawater brine treatment with zero liquid discharge. <i>Nature Communications</i> , 2021, 12, 998.	12.8	136
7	Surface Structure Enhanced Microchannel Flow Boiling. <i>Journal of Heat Transfer</i> , 2016, 138, .	2.1	129
8	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.	12.7	120
9	Analysis and active control of pressure-drop flow instabilities in boiling microchannel systems. <i>International Journal of Heat and Mass Transfer</i> , 2010, 53, 2347-2360.	4.8	119
10	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.	9.8	97
11	Two-phase refrigerant flow instability analysis and active control in transient electronics cooling systems. <i>International Journal of Multiphase Flow</i> , 2011, 37, 84-97.	3.4	75
12	Microscopic Droplet Formation and Energy Transport Analysis of Condensation on Scalable Superhydrophobic Nanostructured Copper Oxide Surfaces. <i>Langmuir</i> , 2014, 30, 14498-14511.	3.5	72
13	Fuzzy Constrained Min-Max Model Predictive Control Based on Piecewise Lyapunov Functions. <i>IEEE Transactions on Fuzzy Systems</i> , 2007, 15, 686-698.	9.8	64
14	Unidirectional Fast Growth and Forced Jumping of Stretched Droplets on Nanostructured Microporous Surfaces. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 21776-21786.	8.0	64
15	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.	6.7	64
16	Prediction and Characterization of Dry-out Heat Flux in Micropillar Wick Structures. <i>Langmuir</i> , 2016, 32, 1920-1927.	3.5	62
17	Output tracking of constrained nonlinear processes with offset-free input-to-state stable fuzzy predictive control. <i>Automatica</i> , 2009, 45, 900-909.	5.0	59
18	Novel Receiver-Enhanced Solar Vapor Generation: Review and Perspectives. <i>Energies</i> , 2018, 11, 253.	3.1	59

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19	Stability analysis and maldistribution control of two-phase flow in parallel evaporating channels. International Journal of Heat and Mass Transfer, 2011, 54, 5298-5305.	4.8	58
20	Parametric study of thin film evaporation from nanoporous membranes. Applied Physics Letters, 2017, 111, .	3.3	53
21	Rapid Load Following of an SOFC Power System via Stable Fuzzy Predictive Tracking Controller. IEEE Transactions on Fuzzy Systems, 2009, 17, 357-371.	9.8	52
22	Approaches to Robust Filtering Design of Discrete Time Fuzzy Dynamic Systems. IEEE Transactions on Fuzzy Systems, 2008, 16, 331-340.	9.8	50
23	The steady-state modeling and optimization of a refrigeration system for high heat flux removal. Applied Thermal Engineering, 2010, 30, 2347-2356.	6.0	49
24	Sunlight-Sensitive Anti-Fouling Nanostructured TiO ₂ coated Cu Meshes for Ultrafast Oily Water Treatment. Scientific Reports, 2016, 6, 25414.	3.3	49
25	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
26	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.	9.8	42
27	Localized Surface Plasmon-Enhanced Ultrathin Film Broadband Nanoporous Absorbers. Advanced Optical Materials, 2016, 4, 1255-1264.	7.3	42
28	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.	3.7	41
29	Nanomaterials for the water-energy nexus. MRS Bulletin, 2019, 44, 59-66.	3.5	39
30	Vapor compression refrigeration cycle for electronics cooling " Part I: Dynamic modeling and experimental validation. International Journal of Heat and Mass Transfer, 2013, 66, 911-921.	4.8	37
31	CFD-based design and simulation of hydrocarbon ejector for cooling. Energy, 2019, 167, 346-358.	8.8	37
32	Insights into the Impact of Surface Hydrophobicity on Droplet Coalescence and Jumping Dynamics. Langmuir, 2017, 33, 8574-8581.	3.5	36
33	Near-Perfect Ultrathin Nanocomposite Absorber with Self-Formed Topping Plasmonic Nanoparticles. Advanced Optical Materials, 2017, 5, 1700222.	7.3	35
34	Deep learning based semantic segmentation of μ CT images for creating digital material twins of fibrous reinforcements. Composites Part A: Applied Science and Manufacturing, 2020, 139, 106131.	7.6	33
35	Microstructural evolution within mushy zone during paraffin's melting and solidification. International Journal of Heat and Mass Transfer, 2019, 141, 769-778.	4.8	31
36	Direct Prediction of Calcite Surface Wettability with First-Principles Quantum Simulation. Journal of Physical Chemistry Letters, 2017, 8, 5309-5316.	4.6	30

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37	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.	5.2	29
38	Effective dielectric constants and spectral density analysis of plasmonic nanocomposites. Journal of Applied Physics, 2016, 120, 163103.	2.5	29
39	Suppressing high-frequency temperature oscillations in microchannels with surface structures. Applied Physics Letters, 2017, 110, .	3.3	28
40	How Nanostructures Affect Water Droplet Nucleation on Superhydrophobic Surfaces. Journal of Heat Transfer, 2017, 139, .	2.1	26
41	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, .	1.8	25
42	Cloaking Dynamics on Lubricant-Infused Surfaces. Advanced Materials Interfaces, 2020, 7, 2000983.	3.7	24
43	Condensation of Satellite Droplets on Lubricant-Cloaked Droplets. ACS Applied Materials & Interfaces, 2020, 12, 22246-22255.	8.0	24
44	Corrosion inhibition of layered double hydroxides for metal-based systems. Nano Materials Science, 2021, 3, 47-67.	8.8	24
45	Imaging and characterizing fluid invasion in micro-3D printed porous devices with variable surface wettability. Soft Matter, 2019, 15, 6978-6987.	2.7	23
46	Directional Passive Transport of Microdroplets in Oil-Infused Diverging Channels for Effective Condensate Removal. ACS Applied Materials & Interfaces, 2018, 10, 20910-20919.	8.0	22
47	Output regulation of discrete-time piecewise-linear systems with application to controlling chaos. IEEE Transactions on Circuits and Systems Part 2: Express Briefs, 2006, 53, 249-253.	2.2	20
48	Refractory Ultrathin Nanocomposite Solar Absorber with Superior Spectral Selectivity and Thermal Stability. Advanced Optical Materials, 2020, 8, 2000679.	7.3	20
49	Vapor compression refrigeration cycle for electronics cooling " Part II: gain-scheduling control for critical heat flux avoidance. International Journal of Heat and Mass Transfer, 2013, 66, 922-929.	4.8	19
50	Transient Characterization of Multiple Parabolic Trough Collector Loops in a 100 MW CSP Plant for Solar Energy Harvesting. Energy Procedia, 2015, 69, 24-33.	1.8	19
51	Synthesis and optical characterization of carbon nanotube arrays. Materials Research Bulletin, 2016, 77, 243-252.	5.2	19
52	Direct solar vapor generation with <sc>micro-3D</sc> printed hydrogel device. EcoMat, 2022, 4, .	11.9	19
53	Impact of PEGDA photopolymerization in micro-stereolithography on 3D printed hydrogel structure and swelling. Soft Matter, 2021, 17, 7188-7195.	2.7	17
54	Efficient processing of 1/4CT images using deep learning tools for generating digital material twins of woven fabrics. Composites Science and Technology, 2022, 217, 109091.	7.8	17

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55	Piecewise affine model-based H ∞ static output feedback control of constrained non-linear processes. IET Control Theory and Applications, 2010, 4, 2315-2330.	2.1	16
56	Dynamics of Microscale Liquid Propagation in Micropillar Arrays. Langmuir, 2017, 33, 6620-6629.	3.5	16
57	A novel approach to the analysis of squeezed-film air damping in microelectromechanical systems. Journal of Micromechanics and Microengineering, 2017, 27, 015012.	2.6	15
58	Characterization of a Compact Organic Rankine Cycle Prototype for Low-grade Transient Solar Energy Conversion. Energy Procedia, 2015, 69, 1113-1122.	1.8	14
59	Characterization of Energy Efficient Vapor Compression Cycle Prototype with a Linear Compressor. Energy Procedia, 2015, 75, 3253-3258.	1.8	13
60	Output tracking and synchronization of chaotic Chua's circuit with disturbances via model predictive regulator. Chaos, Solitons and Fractals, 2009, 39, 810-820.	5.1	10
61	Broadband light absorption by silver nanoparticle decorated silica nanospheres. RSC Advances, 2016, 6, 107951-107959.	3.6	10
62	Dynamic Modeling of Refrigeration Cycle for Electronics Cooling. , 2008, , .		9
63	Controlled Wetting in Nanoporous Membranes for Thin Film Evaporation. Journal of Heat Transfer, 2016, 138, .	2.1	9
64	Empowering microfluidics by micro-3D printing and solution-based mineral coating. Soft Matter, 2020, 16, 6841-6849.	2.7	9
65	Sputtered SiC coatings for radiative cooling and light absorption. Journal of Photonics for Energy, 2018, 9, 1.	1.3	9
66	Model predictive control for nonlinear boiler-turbine system based on fuzzy gain scheduling. , 2008, , .		8
67	Design of a microscale organic Rankine cycle for high-concentration photovoltaics waste thermal power generation. , 2012, , .		8
68	Quasi-min-max fuzzy model predictive control of direct methanol fuel cells. Fuzzy Sets and Systems, 2014, 248, 39-60.	2.7	8
69	Reducing instability and enhancing critical heat flux using integrated micropillars in two-phase microchannel heat sinks. , 2015, , .		8
70	A PSO-BASED MULTIVARIABLE FUZZY DECISION-MAKING PREDICTIVE CONTROLLER FOR A ONCE-THROUGH 300-MW POWER PLANT. Cybernetics and Systems, 2006, 37, 417-441.	2.5	7
71	Water recovery in a concentrated solar power plant. AIP Conference Proceedings, 2016, , .	0.4	7
72	Enhanced Liquid Propagation and Wicking Along Nanostructured Porous Surfaces. Advanced Engineering Materials, 2021, 23, 2100118.	3.5	7

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73	Biomimetic on-chip filtration enabled by direct micro-3D printing on membrane. Scientific Reports, 2022, 12, 8178.	3.3	7
74	Robust model predictive control of uncertain linear systems with persistent disturbances and input constraints. , 2013, , .		6
75	Decreasingâ€œhorizon Robust Model Predictive Control With Specified Settling Time To A Terminal Constraint Set. Asian Journal of Control, 2016, 18, 664-673.	3.0	6
76	Effect of Mini/Micro/Nanostructures on Filmwise Condensation of Low-Surface-Tension Fluids. Journal of Heat Transfer, 2018, 140, .	2.1	6
77	Plasmonic nanofluids enhanced solar thermal transfer liquid. AIP Conference Proceedings, 2017, , .	0.4	5
78	TRANSIENT CHARACTERISTICS AND CONTROL OF ACTIVE THERMAL MANAGEMENT SYSTEMS. Annual Review of Heat Transfer, 2015, 18, 245-328.	1.0	5
79	Output Tracking of Discrete-Time Piecewise Linear Systems via Error Feedback. , 2006, , .		4
80	Stability analysis of heat exchanger dynamics. , 2009, , .		4
81	Experimental identification of evaporator dynamics for vapor compression refrigeration cycle during phase transition. , 2010, , .		4
82	Quantum Mechanical Prediction of Wettability of Multiphase Fluidsâ€œSolid Systems at Elevated Temperature. Journal of Physical Chemistry C, 2019, 123, 12753-12761.	3.1	4
83	The Steady-State Modeling and Static System Design of a Refrigeration System for High Heat Flux Removal. , 2008, , .		3
84	Parallel-channel flow instabilities and active control schemes in two-phase microchannel heat exchanger systems. , 2010, , .		3
85	Extremum seeking micro-thermal-fluid control for active two-phase microelectronics cooling. , 2010, , .		3
86	Pore-Scale Lattice Boltzmann Simulation of Oil-Water Flow in Carbonate Rock with Variable Wettability. , 2015, , .		3
87	Suppressed Dry-out in Two-Phase Microchannels via Surface Structures. Journal of Heat Transfer, 2016, 138, .	2.1	3
88	Characteristics of Jumping Droplet-Enhanced Condensation on Nanostructured Micromesh Surface. , 2016, , .		3
89	Machine Learning for 3D Image Recognition to Determine Porosity and Lithology of Heterogeneous Carbonate Rock. , 2019, , .		3
90	Imaging micro-scale multiphase flow in 3D-printed porous micromodels. , 2018, , .		3

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91	A Multi-Objective Optimizing Control Method for Boiler-Turbine Coordinated Control. , 2007, , .		2
92	Stable Model Predictive Control of Fuzzy Affine Systems with Input and State Constraints. IEEE International Conference on Fuzzy Systems, 2007, , .	0.0	2
93	Fuzzy dynamic modeling and predictive load following control of a solid oxide fuel cell power system. , 2008, , .		2
94	Stability analysis of refrigeration systems for electronics cooling. , 2009, , .		2
95	Micro-thermal-fluid transient analysis and active control for two-phase microelectronics cooling. , 2010, , .		2
96	Design of High-Throughput Superoleophobic Copper Meshes for Oil-Water Separation. Materials Research Society Symposia Proceedings, 2015, 1745, 8.	0.1	2
97	Effect of Surface Wettability and Gas/Liquid Velocity Ratio on Microscale Two-Phase Flow Patterns. , 2016, , .		2
98	Accelerated Development of Refractory Nanocomposite Solar Absorbers using Bayesian Optimization. MRS Advances, 2020, 5, 1537-1545.	0.9	2
99	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
100	The Steady-State Modeling and Analysis of a Two-Loop Cooling System for High Heat Flux Removal. , 2009, , .		1
101	Experimental Identification of Component Parameters for Multiple-Evaporator Vapor Compression Refrigeration Cycle. , 2009, , .		1
102	A Separated-Flow Model for Predicting Flow Boiling Critical Heat Flux and Pressure Drop Characteristics in Microchannels. , 2012, , .		1
103	First-Principle Dynamic Modeling of a Linear Micro-Compressor. , 2013, , .		1
104	High Efficiency Solar to Electric Energy Conversion through Spectrum Splitting and Multi-channel Full Spectrum Harvesting. Materials Research Society Symposia Proceedings, 2013, 1493, 31-36.	0.1	1
105	Fundamental Considerations for Designing Compact Solar Thermal Power and Ejector Cooling Systems in Hot Climates. , 2013, , .		1
106	Output Feedback Model Predictive Control of Linear Parameter Varying Systems. , 2014, , .		1
107	Lattice Boltzmann Simulation of Rarefied Gas Flow Along Moving Rigid Objects in Micro-Cavities. , 2015, , .		1
108	Design of high-performance refrigerant ejector for sub-ambient cooling. , 2016, , .		1

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109	Analysis of squeeze film air damping in MEMS with lattice Boltzmann method. , 2016, , .		1
110	Pore-Scale Experimental and Numerical Study on Permeability Characterization of Abu Dhabi Offshore Carbonate Micromodel. , 2016, , .		1
111	Prediction of thin liquid film evaporation characteristics with a thermal lattice boltzmann method. , 2016, , .		1
112	Model optimization of dry-out heat flux from micropillar wick structures. , 2016, , .		1
113	Enhancing Visible Light Photocatalysis with Hydrogenated Titanium Dioxide for Anti-Fouling Applications. MRS Advances, 2018, 3, 3181-3187.	0.9	1
114	MORPHOLOGICAL EVOLUTION OF MUSHY ZONE AND EFFECT OF MUSHY ZONE CONSTANT DURING MELTING PROCESS. , 2018, , .		1
115	Thin Film Evaporation in Microchannel Membrane for Solar Vapor Generation. , 2014, , .		1
116	Observer based Fuzzy Integral Model Predictive Control using Piecewise Lyapunov Functions. , 2006, , .		0
117	Terminal Cost Constraint based Stable Fuzzy Model Predictive Control of A Nonlinear Fluidized Bed Combustion Plant. , 2007, , .		0
118	Experimental Model Identification and Controller Design of a Vapor Compression Cycle for Electronics Cooling. , 2010, , .		0
119	Active Flow Instability Control for Transient Two-Phase Electronics Cooling. , 2010, , .		0
120	Two-phase flow instability analysis for transient electronics cooling. , 2010, , .		0
121	Flow Stability Analysis of Two-Phase Cooling Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 3096-3101.	0.4	0
122	Transient Vapor Compression Refrigeration Cycle for Electronics Cooling: Part 1â€™Distributed Model Validation. , 2011, , .		0
123	Prediction of Refrigerant Flow Boiling Hysteresis With an Augmented Separated-Flow Model. , 2016, , .		0
124	Condensation of Low-Surface-Tension Fluids on Microstructured Surfaces at Low Temperature. , 2017, , .		0
125	NMR-MRI Characterization of Low-Salinity Water Alternating CO2 Flooding in tight Carbonate. , 2018, , .		0
126	Experimental Model Identification and Controller Design of a Vapor Compression Cycle for Electronics Cooling. , 2010, , .		0

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127	Pre- and Post-Critical Heat Flux Analyses in a Saturated Refrigerant Flow Boiling System. , 2012, , .		0
128	Investigation of Two-Phase Frictional Pressure Drop and Thermal Entrance Length in a Minichannel Helical Heat Exchanger. , 2013, , .		0
129	EFFECTIVE SOLAR DISTILLATION WITH THERMAL CONCENTRATION AND ANTI-FOULING WICK. , 2018, , .		0
130	DAYTIME RADIATIVE COOLING WITH POLYMER COATINGS. , 2018, , .		0