Patrick E Phelan

List of Publications by Citations

157 papers	9,974 citations	41 h-index	99 g-index
179 ext. papers	11,276 ext. citations	4.8 avg, IF	6.33 L-index

#	Paper	IF	Citations
157	Thermal conductivity of nanoscale colloidal solutions (nanofluids). *Physical Review Letters*, **2005**, 94, 025901	7.4	679
156	Measurements of nanofluid viscosity and its implications for thermal applications. *Applied Physics Letters*, **2006**, 89, 133108	3.4	558
155	Nanofluid-based direct absorption solar collector. *Journal of Renewable and Sustainable Energy*, **2010**, 2, 033102	2.5	546
154	Recent developments in phase change materials for energy storage applications: A review. *International Journal of Heat and Mass Transfer*, **2019**, 129, 491-523	4.9	542
153	Effect of aggregation kinetics on the thermal conductivity of nanoscale colloidal solutions (nanofluid). *Nano Letters*, **2006**, 6, 1529-34	11.5	529
152	Small particles, big impacts: A review of the diverse applications of nanofluids. *Journal of Applied Physics*, **2013**, 113, 011301	2.5	512
151	Predicted Efficiency of a Low-Temperature Nanofluid-Based Direct Absorption Solar Collector. *Journal of Solar Energy Engineering, Transactions of the ASME*, **2009**, 131,	2.3	419
150	Enhanced mass transport in nanofluids. *Nano Letters*, **2006**, 6, 419-23	11.5	406
149	Brownian-Motion-Based Convective-Conductive Model for the Effective Thermal Conductivity of Nanofluids. *Journal of Heat Transfer*, **2006**, 128, 588-595	1.8	392
148	Nanofluid optical property characterization: towards efficient direct absorption solar collectors. *Nanoscale Research Letters*, **2011**, 6, 225	5	356
147	Effect of aggregation and interfacial thermal resistance on thermal conductivity of nanocomposites and colloidal nanofluids. *International Journal of Heat and Mass Transfer*, **2008**, 51, 1431-1438	4.9	349
146	Optical properties of liquids for direct absorption solar thermal energy systems. *Solar Energy*, **2009**, 83, 969-977	6.8	313
145	Effect of aggregation on thermal conduction in colloidal nanofluids. *Applied Physics Letters*, **2006**, 89, 143119	3.4	313
144	Brownian dynamics simulation to determine the effective thermal conductivity of nanofluids. *Journal of Applied Physics*, **2004**, 95, 6492-6494	2.5	263
143	Increased hot-plate ignition probability for nanoparticle-laden diesel fuel. *Nano Letters*, **2008**, 8, 1410-6	11.5	254
142	Applicability of nanofluids in high flux solar collectors. *Journal of Renewable and Sustainable Energy*, **2011**, 3, 023104	2.5	246
141	Highly efficient selective metamaterial absorber for high-temperature solar thermal energy harvesting. *Solar Energy Materials and Solar Cells*, **2015**, 137, 235-242	6.4	159

140	Impact of Pavement Thermophysical Properties on Surface Temperatures. *Journal of Materials in Civil Engineering*, **2007**, 19, 683-690	3	154
139	Prospects for solar cooling □An economic and environmental assessment. *Solar Energy*, **2012**, 86, 1287-1299	3.9	141
138	Solar Energy Harvesting Using Nanofluids-Based Concentrating Solar Collector. *Journal of Nanotechnology in Engineering and Medicine*, **2012**, 3,		140
137	Ledinegg instability in microchannels. *International Journal of Heat and Mass Transfer*, **2009**, 52, 5661-5674	4.9	132
136	Pool boiling of nanofluids: Comprehensive review of existing data and limited new data. *International Journal of Heat and Mass Transfer*, **2009**, 52, 5339-5347	4.9	131
135	Urban Heat Island: Mechanisms, Implications, and Possible Remedies. *Annual Review of Environment and Resources*, **2015**, 40, 285-307	17.2	105
134	Liquid Thermoelectrics: Review of Recent And Limited New Data of Thermogalvanic Cell Experiments. *Nanoscale and Microscale Thermophysical Engineering*, **2013**, 17, 304-323	3.7	104
133	A Scattering-Mediated Acoustic Mismatch Model for the Prediction of Thermal Boundary Resistance. *Journal of Heat Transfer*, **2001**, 123, 105-112	1.8	92
132	A biometeorology study of climate and heat-related morbidity in Phoenix from 2001 to 2006. *International Journal of Biometeorology*, **2008**, 52, 471-80	3.7	82
131	Trends and Opportunities in Direct-Absorption Solar Thermal Collectors. *Journal of Thermal Science and Engineering Applications*, **2013**, 5,	1.9	66
130	Energy conservation in compressed-air systems. *International Journal of Energy Research*, **2002**, 26, 837-849	4.9	61
129	A comparative study of the thermal and radiative impacts of photovoltaic canopies on pavement surface temperatures. *Solar Energy*, **2007**, 81, 872-883	6.8	55
128	Characterization of light-induced, volumetric steam generation in nanofluids. *International Journal of Thermal Sciences*, **2012**, 56, 1-11	4.1	54
127	Economic feasibility of combined heat and power and absorption refrigeration with commercially available gas turbines. *Energy Conversion and Management*, **2001**, 42, 1559-1573	10.6	52
126	Band-Gap Tuned Direct Absorption for a Hybrid Concentrating Solar Photovoltaic/Thermal System. *Journal of Solar Energy Engineering, Transactions of the ASME*, **2011**, 133,	2.3	51
125	Microscopic and macroscopic thermal contact resistances of pressed mechanical contacts. *Journal of Applied Physics*, **2006**, 100, 063538	2.5	51
124	Thermodynamic feasibility of harvesting data center waste heat to drive an absorption chiller. *Energy Conversion and Management*, **2012**, 58, 26-34	10.6	48
123	Multifunctional Core-Shell Nanoparticle Suspensions for Efficient Absorption. *Journal of Solar Energy Engineering, Transactions of the ASME*, **2013**, 135,	2.3	48

122	The amplifying effect of natural convection on power generation of thermogalvanic cells. *International Journal of Heat and Mass Transfer*, **2014**, 78, 423-434	4.9	47
121	Variations of Acoustic and Diffuse Mismatch Models in Predicting Thermal-Boundary Resistance. *Journal of Thermophysics and Heat Transfer*, **2000**, 14, 144-150	1.3	47
120	Modeling effects of urban heat island mitigation strategies on heat-related morbidity: a case study for Phoenix, Arizona, USA. *International Journal of Biometeorology*, **2010**, 54, 13-22	3.7	45
119	Effective Thermal Conductivity of a Thin, Randomly Oriented Composite Material. *Journal of Heat Transfer*, **1998**, 120, 971-976	1.8	45
118	Vapor generation in a nanoparticle liquid suspension using a focused, continuous laser. *Applied Physics Letters*, **2009**, 95, 161907	3.4	44
117	Techno-economic analysis of combined ammonia-water absorption refrigeration and desalination. *Energy Conversion and Management*, **2017**, 143, 493-504	10.6	42
116	NANOFLUIDS FOR HEAT TRANSFER APPLICATIONS. *Annual Review of Heat Transfer*, **2005**, 14, 255-275	2.7	41
115	Ten questions concerning future buildings beyond zero energy and carbon neutrality. *Building and Environment*, **2017**, 119, 169-182	6.5	40
114	Past visions, current trends, and future context: A review of building energy, carbon, and sustainability. *Renewable and Sustainable Energy Reviews*, **2018**, 82, 976-993	16.2	40
113	Parametric analysis of a coupled photovoltaic/thermal concentrating solar collector for electricity generation. *Journal of Applied Physics*, **2010**, 108, 114907	2.5	40
112	Experimental study of indoor and outdoor airborne bacterial concentrations in Tempe, Arizona, USA. *Aerobiologia*, **2003**, 19, 201-211	2.4	38
111	Dynamics of rotating paramagnetic particle chains simulated by particle dynamics, Stokesian dynamics and lattice Boltzmann methods. *Microfluidics and Nanofluidics*, **2008**, 5, 33-41	2.8	37
110	An Effective Unit Cell Approach to Compute the Thermal Conductivity of Composites With Cylindrical Particles. *Journal of Heat Transfer*, **2005**, 127, 553-559	1.8	37
109	Spatially Varying Extinction Coefficient for Direct Absorption Solar Thermal Collector Optimization. *Journal of Solar Energy Engineering, Transactions of the ASME*, **2011**, 133,	2.3	36
108	Core-shell and asymmetric polystyrene-gold composite particles via one-step Pickering emulsion polymerization. *Langmuir*, **2014**, 30, 75-82	4	33
107	Paramagnetic particles and mixing in micro-scale flows. *Lab on A Chip*, **2006**, 6, 247-57	7.2	33
106	Energy and exergy utilizations of the U.S. manufacturing sector. *Energy*, **2010**, 35, 3048-3065	7.9	30
105	Determining Thermal Conductivity of Paving Materials Using Cylindrical Sample Geometry. *Journal of Materials in Civil Engineering*, **2010**, 22, 186-195	3	29

104	Development of a Zero-Dimensional Mesoscale Thermal Model for Urban Climate. *Journal of Applied Meteorology and Climatology*, **2009**, 48, 657-668	2.7	25
103	Thermal contact conductance across filled polyimide films at cryogenic temperatures. *Cryogenics*, **1999**, 39, 803-809	1.8	25
102	Impact of Size and Scattering Mode on the Optimal Solar Absorbing Nanofluid **2009**,		24
101	Experimental investigation of a solar-heated direct contact membrane distillation system using evacuated tube collectors. *Desalination*, **2020**, 487, 114497	10.3	22
100	Thermophysical properties enhancement of ternary carbonates with carbon materials for high-temperature thermal energy storage. *Solar Energy*, **2017**, 155, 661-669	6.8	22
99	Predicted Efficiency of a Nanofluid-Based Direct Absorption Solar Receiver **2007**, 729		22
98	Modeling of Radiative and Optical Behavior of Nanofluids Based on Multiple and Dependent Scattering Theories **2005**, 739		22
97	Non-dimensional size effects on the thermodynamic properties of solids. *International Journal of Heat and Mass Transfer*, **1999**, 42, 1991-2001	4.9	22
96	Performance analysis of a thermal energy storage system based on paired metal hydrides for concentrating solar power plants. *Applied Thermal Engineering*, **2018**, 144, 1017-1029	5.8	22
95	The relationship among CPU utilization, temperature, and thermal power for waste heat utilization. *Energy Conversion and Management*, **2015**, 95, 297-303	10.6	21
94	Experimental investigation of the latent heat of vaporization in aqueous nanofluids. *Applied Physics Letters*, **2014**, 104, 151908	3.4	20
93	An Experimental Investigation of Pressure Drop in Expanding Microchannel Arrays. *Journal of Heat Transfer*, **2014**, 136,	1.8	18
92	Investigation of electrostrictive polymers as actuators for mesoscale devices. *International Journal of Advanced Manufacturing Technology*, **2004**, 23, 176-182	3.2	18
91	Experimental Investigation of a Bio-Based Phase Change Material to Improve Building Energy Performance **2010**,		17
90	Review of Thermal Boundary Resistance of High-Temperature Superconductors. *Journal of Superconductivity and Novel Magnetism*, **1997**, 10, 473-484		17
89	Techno-Economic Assessment of CHP Systems in Wastewater Treatment Plants. *Environments - MDPI*, **2020**, 7, 74	3.2	17
88	Solar Energy Harvesting Using Nanofluids-Based Concentrating Solar Collector **2012**,		16
87	Experimental Measurements of Critical Heat Flux in Expanding Microchannel Arrays. *Journal of Heat Transfer*, **2013**, 135,	1.8	16

86	Thermal boundary resistance for thin-film high-Tc superconductors at varying interfacial temperature drops. *International Journal of Heat and Mass Transfer*, **1997**, 40, 2637-2645	4.9	16
85	Comparative analysis of thermally activated, environmentally friendly cooling systems. *Energy Conversion and Management*, **2008**, 49, 1091-1097	10.6	16
84	Phase sensitive enhancement for biochemical detection using rotating paramagnetic particle chains. *Journal of Applied Physics*, **2004**, 96, 6831-6838	2.5	16
83	Optical characterization and durability of immersion cooling liquids for high concentration III-V photovoltaic systems. *Solar Energy Materials and Solar Cells*, **2018**, 174, 124-131	6.4	16
82	Socioeconomic impacts of heat transfer research. *International Communications in Heat and Mass Transfer*, **2012**, 39, 1467-1473	5.8	15
81	Characterization of the temperature oscillation technique to measure the thermal conductivity of fluids. *International Journal of Heat and Mass Transfer*, **2006**, 49, 2950-2956	4.9	15
80	Thermo-responsiveness and tunable optical properties of asymmetric polystyrene/PNIPAM-gold composite particles. *Journal of Colloid and Interface Science*, **2014**, 425, 12-9	9.3	14
79	A sustainable data center with heat-activated cooling **2010**,		14
78	Microchannel Two-Phase Flow Oscillation Control With an Adjustable Inlet Orifice. *Journal of Heat Transfer*, **2012**, 134,	1.8	14
77	U.S. manufacturing aggregate energy intensity decomposition: The application of multivariate regression analysis. *International Journal of Energy Research*, **2008**, 32, 91-106	4.5	14
76	Thermal properties of ternary carbonate/T-ZnOw for thermal energy storage in high-temperature concentrating solar power systems. *Composites Part A: Applied Science and Manufacturing*, **2017**, 93, 177-184	8.4	13
75	Thermal performance analysis of a metal hydride reactor encircled by a phase change material sandwich bed. *International Journal of Hydrogen Energy*, **2020**, 45, 23076-23092	6.7	13
74	Solar-heated submerged vacuum membrane distillation system with agitation techniques for desalination. *Separation and Purification Technology*, **2021**, 256, 117855	8.3	12
73	Ultrasound-assisted regeneration of zeolite/water adsorption pair. *Ultrasonics Sonochemistry*, **2020**, 64, 105042	8.9	11
72	Optimized Expanding Microchannel Geometry for Flow Boiling. *Journal of Heat Transfer*, **2013**, 135,	1.8	11
71	Forecasting the electricity consumption of the Mexican border states maquiladoras. *International Journal of Energy Research*, **2004**, 28, 641-660	4.5	11
70	Modeling and Forecasting End-Use Energy Consumption for Residential Buildings in Kuwait Using a Bottom-Up Approach. *Energies*, **2020**, 13, 1981	3.1	10
69	Applicability of Nanofluids in Concentrated Solar Energy Harvesting **2010**,		10

68	Theoretical analysis of a solar-powered multi-effect distillation integrated with concentrating photovoltaic/thermal system. *Desalination*, **2019**, 468, 114074	10.3	9
67	Critical Review of the Novel Applications and Uses of Nanofluids **2012**,		9
66	Modeling and forecasting the U.S. manufacturing aggregate energy intensity. *International Journal of Energy Research*, **2008**, 32, 501-513	4.5	9
65	Impact of Pavement Thickness on Surface Diurnal Temperatures. *Journal of Green Building*, **2007**, 2, 121-130		9
64	Technological Advances to Maximize Solar Collector Energy Output: A Review. *Journal of Electronic Packaging, Transactions of the ASME*, **2018**, 140,	2	8
63	Efficiency, economics, and the urban heat island. *Environment and Urbanization*, **2017**, 29, 183-194	3.7	8
62	Assessing the relative efficiency of energy use among similar manufacturing industries. *International Journal of Energy Research*, **2011**, 35, 477-488	4.5	8
61	Thermal peeling stress analysis of thin-film high-TC superconductors. *Applied Superconductivity*, **1998**, 6, 19-29		8
60	Experimental and numerical assessment of using coconut oil as a phase-change material for unconditioned buildings. *International Journal of Energy Research*, **2020**, 44, 5177-5196	4.5	7
59	Enhanced Efficiency in a Coupled Photovoltaic/Thermal Concentrating Solar Collector **2010**,		7
58	Feasibility of lowering the condenserÍs inlet water temperature of a chiller using thermal water storage. *Applied Energy*, **2000**, 66, 339-356	10.7	7
57	A review of energy storage technologies for demand-side management in industrial facilities. *Journal of Cleaner Production*, **2021**, 307, 127322	10.3	7
56	Thermoelectric-based sustainable self-cooling for fine-grained processor hot spots **2016**,		7
55	The effective latent heat of aqueous nanofluids. *Materials Research Express*, **2015**, 2, 065004	1.7	6
54	Assessment of a novel heat-driven cycle to produce shaft power and refrigeration. *Applied Energy*, **2018**, 215, 751-764	10.7	6
53	Thermodynamic analysis of a novel sodium hydroxide-water solution absorption refrigeration, heating and power system for low-temperature heat sources. *Applied Energy*, **2018**, 222, 1-12	10.7	6
52	Energy and Exergy Analyses of Different Aluminum Reduction Technologies. *Sustainability*, **2018**, 10, 1216	3.6	6
51	Impact of the Urban Heat Island on Light Duty Vehicle Emissions for the Phoenix, AZ Area. *International Journal of Sustainable Transportation*, **2010**, 4, 1-13	3.6	6

50	Cyclic behaviors of a novel design of a metal hydride reactor encircled by cascaded phase change materials. *International Journal of Hydrogen Energy*, **2020**, 45, 32285-32297	6.7	6
49	Temperature Dependent Optical Properties of Nanoparticle Suspensions **2012**,		5
48	Modeling microflow and stirring around a microrotor in creeping flow using a quasi-steady-state analysis. *Lab on A Chip*, **2004**, 4, 201-8	7.2	5
47	Hot Spot Cooling and Harvesting Central Processing Unit Waste Heat Using Thermoelectric Modules. *Journal of Electronic Packaging, Transactions of the ASME*, **2015**, 137,	2	5
46	Experimental study of an evacuated tube solar adsorption cooling module and its optimal adsorbent bed design. *Solar Energy*, **2020**, 211, 183-191	6.8	5
45	Low-Temperature Melting of Silver Nanoparticles in Subcooled and Saturated Water. *Journal of Heat Transfer*, **2016**, 138,	1.8	4
44	Thermogalvanic Waste Heat Recovery System in Automobiles **2015**,		4
43	Light-Induced Energy Conversion in Liquid Nanoparticle Suspensions. *Computational and Physical Processes in Mechanics and Thermal Science*, **2012**, 123-142		4
42	Characterization of a Nanofluid Volumetric Solar Absorber / Steam Generator **2011**,		4
41	Finite element analysis of residual-stress-induced flatness deviation in banded carbon seals. *Finite Elements in Analysis and Design*, **2002**, 38, 785-801	2.2	4
40	Experimental results for a hydraulic refrigeration system using n-butane. *International Journal of Refrigeration*, **2001**, 24, 325-337	3.8	4
39	Effects of Rooftop Photovoltaics on Building Cooling Demand and Sensible Heat Flux Into the Environment for an Installation on a White Roof. *ASME Journal of Engineering for Sustainable Buildings and Cities*, **2020**, 1,	0.4	4
38	Performance enhancement of a submerged vacuum membrane distillation (S-VMD) system using low-power ultrasound. *Journal of Membrane Science*, **2021**, 621, 119004	9.6	4
37	Effect of transient low-grade solar heat on liquid thermogalvanic cells. *Materials Today: Proceedings* , **2021**, 38, 767-772	1.4	4
36	Investigations of III V concentrator solar cells with liquid immersion for high concentrating photovoltaic systems. *Solar Energy*, **2017**, 158, 728-736	6.8	3
35	Controllable Optical Properties of Polystyrene/PNIPAM-Gold Composite Nanoparticles. *Plasmonics*, **2015**, 10, 17-25	2.4	3
34	Multipetal-Structured and Dumbbell-Structured Gold-Polymer Composite Particles with Self-Modulated Catalytic Activity. *Langmuir*, **2015**, 31, 13191-200	4	3
33	Hot Spot Cooling and Harvesting CPU Waste Heat Using Thermoelectric Modules **2014**,		3

32	Investigating a relationship among CPU and system temperatures, thermal power, and CPU tasking levels **2012**,		3
31	A New Approach to Study and Compare the Annual Performance of Liquid and Solid Desiccant Cooling Systems. *Journal of Thermal Science and Engineering Applications*, **2011**, 3,	1.9	3
30	Optimized Expanding Microchannel Geometry for Flow Boiling **2011**,		3
29	Experimental study of water freezing process improvement using ultrasound. *Applied Thermal Engineering*, **2022**, 202, 117827	5.8	3
28	Improving Seebeck coefficient of thermoelectrochemical cells by controlling ligand complexation at metal redox centers. *Applied Physics Letters*, **2021**, 118, 253901	3.4	3
27	Thermodynamic and economic analysis of a micro-combined polygeneration system coupled with solar energy and fuels for distributed applications. *Journal of Thermal Analysis and Calorimetry*, **2021**, 145, 581-595	4.1	3
26	Stochastic framework for peak demand reduction opportunities with solar energy for manufacturing facilities. *Journal of Cleaner Production*, **2021**, 313, 127891	10.3	3
25	Applicability of Controllable Nanoparticle Radiative Properties for Spacecraft Heat Rejection. *Journal of Thermophysics and Heat Transfer*, **2015**, 29, 869-874	1.3	2
24	Effect of Cross-Sectional Perturbation on Critical Heat Flux Criteria in Microchannels. *Journal of Heat Transfer*, **2013**, 135,	1.8	2
23	Surface Plasmon Resonance Shifts of a Dispersion of Core-Shell Nanoparticles for Efficient Solar Absorption **2012**,		2
22	Nanofluid Extinction Coefficients for Photothermal Energy Conversion **2011**,		2
21	Solar Cooling With Ice Storage **2012**,		2
20	Thermochemical Conversion of Biomass Using Solar Energy: Use of Nanoparticle-Laden Molten Salt as the Working Fluid **2009**,		2
19	CFD analysis of paramagnetic particle containment in microwells. *Lab on A Chip*, **2005**, 5, 1075-82	7.2	2
18	Application of ultrasound in regeneration of silica gel for industrial gas drying processes. *Drying Technology*,1-9	2.6	2
17	Plasmon-Enhanced Properties of Metallic Nanostructures and Their Application to Direct Solar Absorption Receivers **2012**,		1
16	Tuning the Extinction Coefficient for Direct Absorption Solar Thermal Collector Optimization **2010**,		1
15	Band-Gap Tuned Direct Absorption for Hybrid Concentrating Solar Photovoltaic/Thermal System **2011**,		1

14	Optimization of Cell Configuration for Maximizing Performance of a Cu/Cu2+ Aqueous Thermogalvanic Cell **2012**,		1
13	Experimental Results for Light-Induced Boiling in Water-Based Graphite Nanoparticle Suspensions **2009**,		1
12	Parametric Experimental Study of Viscosity of Nanofluids **2006**, 21		1
11	The Thermal Conductance of Indium-Filled Contacts at Cryogenic Temperatures **2004**, 753		1
10	Thermal and economic performance evaluation of a novel sCO2 recompression Brayton–steam Rankine–absorption cooling system based on solar energy. *Journal of Thermal Analysis and Calorimetry*,1	4.1	1
9	Analysis of Heat-Driven Combined Cooling and Desalination **2016**,		1
8	Review of Residential Air Conditioning Systems Operating under High Ambient Temperatures. *Energies*, **2022**, 15, 2880	3.1	1
7	Ultrasound-assisted regeneration of activated alumina/water adsorption pair for drying and dehumidification processes. *Ultrasonics*, **2022**, 124, 106769	3.5	1
6	Improved Air-Conditioning Demand Response of Connected Communities over Individually Optimized Buildings. *Energies*, **2021**, 14, 5926	3.1	0
5	Mini Containers to Improve the Cold Chain Energy Efficiency and Carbon Footprint. *Climate*, **2022**, 10, 76	3.1	0
4	Relationship between Ambient Temperature and Mental Health in the USA. *Environments - MDPI*, **2017**, 4, 71	3.2	
3	A Unified Microscopic and Macroscopic Thermal Contact Resistance Model **2006**, 525		
2	An Effective Unit Cell Approach to Compute the Thermal Conductivity of Composites With Cylindrical Particles **2003**, 201		
1	Flow Boiling Enhancement via Cross-Sectional Expansion **2016**, 1-22		