

Suman Chakraborty

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123
papers

2,444
citations

30
h-index

45
g-index

127
ext. papers

2,980
ext. citations

4.5
avg, IF

6.07
L-index

#	Paper	IF	Citations
123	Electroosmotically driven capillary transport of typical non-Newtonian biofluids in rectangular microchannels. <i>Analytica Chimica Acta</i> , 2007 , 605, 175-84	6.6	179
122	An enthalpy-based hybrid lattice-Boltzmann method for modelling solid-liquid phase transition in the presence of convective transport. <i>Journal of Fluid Mechanics</i> , 2007 , 592, 155-175	3.7	88
121	Electroosmosis-modulated peristaltic transport in microfluidic channels. <i>Physics of Fluids</i> , 2016 , 28, 052002	4.4	88
120	Dynamics of capillary flow of blood into a microfluidic channel. <i>Lab on A Chip</i> , 2005 , 5, 421-30	7.2	86
119	Modelling and experimental study of latent heat thermal energy storage with encapsulated PCMs for solar thermal applications. <i>Applied Thermal Engineering</i> , 2018 , 143, 415-428	5.8	71
118	Numerical analysis of latent heat thermal energy storage using encapsulated phase change material for solar thermal power plant. <i>Renewable Energy</i> , 2016 , 95, 323-336	8.1	68
117	Electrokinetically modulated peristaltic transport of power-law fluids. <i>Microvascular Research</i> , 2016 , 103, 41-54	3.7	63
116	Capillarity-driven blood plasma separation on paper-based devices. <i>Analyst, The</i> , 2015 , 140, 6473-6	5	61
115	Mass flow-rate control through time periodic electro-osmotic flows in circular microchannels. <i>Physics of Fluids</i> , 2008 , 20, 083602	4.4	58
114	Hydraulic jumps due to oblique impingement of circular liquid jets on a flat horizontal surface. <i>Journal of Fluid Mechanics</i> , 2007 , 573, 247-263	3.7	57
113	Steric effect and slip-modulated energy transfer in narrow fluidic channels with finite aspect ratios. <i>Electrophoresis</i> , 2010 , 31, 843-9	3.6	55
112	Uniform electric-field-induced lateral migration of a sedimenting drop. <i>Journal of Fluid Mechanics</i> , 2016 , 792, 553-589	3.7	54
111	Thermodynamics of premixed combustion in a heat recirculating micro combustor. <i>Energy</i> , 2014 , 68, 510-518	7.9	53
110	Towards a generalized representation of surface effects on pressure-driven liquid flow in microchannels. <i>Applied Physics Letters</i> , 2007 , 90, 034108	3.4	53
109	Analytical Solution for Thermally Fully Developed Combined Electroosmotic and Pressure-Driven Flows in Narrow Confinements With Thick Electrical Double Layers. <i>Journal of Heat Transfer</i> , 2011 , 133,	1.8	52
108	Transverse electrodes for improved DNA hybridization in microchannels. <i>AIChE Journal</i> , 2007 , 53, 1086-1099	3.7	52
107	Electro-osmosis of superimposed fluids in the presence of modulated charged surfaces in narrow confinements. <i>Journal of Fluid Mechanics</i> , 2015 , 776, 390-429	3.7	51

106	Generalized model for time periodic electroosmotic flows with overlapping electrical double layers. <i>Langmuir</i> , 2007 , 23, 12421-8	4	51
105	Modelling of turbulent molten pool convection in laser welding of a copper-tickel dissimilar couple. <i>International Journal of Heat and Mass Transfer</i> , 2007 , 50, 1805-1822	4.9	50
104	A novel modeling and simulation technique of photo-thermal interactions between lasers and living biological tissues undergoing multiple changes in phase. <i>Computers in Biology and Medicine</i> , 2005 , 35, 447-62	7	49
103	Mixed convective flow stability of nanofluids past a square cylinder by dynamic mode decomposition. <i>International Journal of Heat and Fluid Flow</i> , 2013 , 44, 624-634	2.4	47
102	Analytical solutions for the rate of DNA hybridization in a microchannel in the presence of pressure-driven and electroosmotic flows. <i>Sensors and Actuators B: Chemical</i> , 2006 , 114, 957-963	8.5	47
101	Redefining electrical double layer thickness in narrow confinements: effect of solvent polarization. <i>Physical Review E</i> , 2012 , 85, 051508	2.4	46
100	Anomalous electrical conductivity of nanoscale colloidal suspensions. <i>ACS Nano</i> , 2008 , 2, 2029-36	16.7	46
99	Numerical study of horizontal ground heat exchanger for high energy demand applications. <i>Applied Thermal Engineering</i> , 2015 , 85, 252-263	5.8	42
98	Study of laminar single phase frictional factor and Nusselt number in In-line micro pin-fin heat sink for electronic cooling applications. <i>International Journal of Heat and Mass Transfer</i> , 2019 , 138, 796-808	4.9	37
97	Derivations of extended Navier-Stokes equations from upscaled molecular transport considerations for compressible ideal gas flows: Towards extended constitutive forms. <i>Physics of Fluids</i> , 2007 , 19, 088104	4.4	37
96	Estimation of thermal performance and design optimization of finned multitube latent heat thermal energy storage. <i>Journal of Energy Storage</i> , 2018 , 19, 135-144	7.8	33
95	Anomalous mixing behaviour in rotationally actuated microfluidic devices. <i>Lab on A Chip</i> , 2011 , 11, 2823-6.2	6.2	33
94	Dynamic modelling of ORC-based solar thermal power plant integrated with multitube shell and tube latent heat thermal storage system. <i>Applied Thermal Engineering</i> , 2017 , 123, 458-470	5.8	31
93	Heat transfer in an evaporating thin liquid film moving slowly along the walls of an inclined microchannel. <i>International Journal of Heat and Mass Transfer</i> , 2005 , 48, 2801-2805	4.9	28
92	Latent heat thermal storage with variable porosity metal matrix: A numerical study. <i>Renewable Energy</i> , 2018 , 125, 962-973	8.1	27
91	Heat Transfer Characterization and Optimization of Latent Heat Thermal Storage System Using Fins for Medium Temperature Solar Applications. <i>Journal of Solar Energy Engineering, Transactions of the ASME</i> , 2017 , 139,	2.3	26
90	Controlled microbubble generation on a compact disk. <i>Applied Physics Letters</i> , 2010 , 97, 234103	3.4	26
89	Energy and exergy analyses of medium temperature latent heat thermal storage with high porosity metal matrix. <i>Applied Thermal Engineering</i> , 2016 , 109, 911-923	5.8	26

88	Thermohydraulic characterization of flow boiling in a nanostructured microchannel heat sink with vapor venting manifold. <i>International Journal of Heat and Mass Transfer</i> , 2019 , 130, 1249-1259	4.9	21
87	Effect of varying extent of PCM capsule filling on thermal stratification performance of a storage tank. <i>Energy</i> , 2019 , 178, 1-20	7.9	20
86	Effect of hematocrit on blood dynamics on a compact disc platform. <i>Analyst, The</i> , 2015 , 140, 1432-7	5	19
85	Development and fluidic simulation of microneedles for painless pathological interfacing with living systems. <i>Journal of Applied Physics</i> , 2008 , 103, 114701	2.5	19
84	Design and analysis of PCM based radiant heat exchanger for thermal management of buildings. <i>Energy and Buildings</i> , 2018 , 169, 84-96	7	18
83	Mixed convective vertically upward flow past side-by-side square cylinders at incidence. <i>International Journal of Heat and Mass Transfer</i> , 2018 , 127, 927-947	4.9	18
82	Heat transfer characterization of rhombic microchannel for H1 and H2 boundary conditions. <i>International Journal of Thermal Sciences</i> , 2017 , 111, 223-233	4.1	18
81	Performance Analysis of Heat Sinks With Phase-Change Materials Subjected to Transient and Cyclic Heating. <i>Heat Transfer Engineering</i> , 2015 , 36, 1349-1359	1.7	17
80	Analytical Solutions for Heat Transfer During Cyclic Melting and Freezing of a Phase Change Material Used in Electronic or Electrical Packaging. <i>Journal of Electronic Packaging, Transactions of the ASME</i> , 2003 , 125, 126-133	2	17
79	Experimental and numerical investigations of fluid flow and heat transfer in a bioinspired surface enriched microchannel. <i>International Journal of Thermal Sciences</i> , 2019 , 135, 44-60	4.1	17
78	Transient performance analysis of concentrating solar thermal power plant with finned latent heat thermal energy storage. <i>Renewable Energy</i> , 2020 , 145, 1957-1971	8.1	17
77	Design of a collector shape for uniform flow distribution in microchannels. <i>Journal of Micromechanics and Microengineering</i> , 2017 , 27, 075026	2	16
76	Modeling of microchannel heat sinks for electronic cooling applications using volume averaging approach. <i>International Journal of Heat and Mass Transfer</i> , 2017 , 115, 395-409	4.9	15
75	Facile Fabrication of Nanostructured Microchannels for Flow Boiling Heat Transfer Enhancement. <i>Heat Transfer Engineering</i> , 2019 , 40, 537-548	1.7	15
74	Magnetohydrodynamic buoyancy driven Al ₂ O ₃ -water nanofluid flow in a differentially heated trapezoidal enclosure with a cylindrical barrier. <i>International Communications in Heat and Mass Transfer</i> , 2020 , 114, 104593	5.8	14
73	Performance study of a novel funnel shaped shell and tube latent heat thermal energy storage system. <i>Renewable Energy</i> , 2021 , 165, 731-747	8.1	14
72	A design method for rectangular microchannel counter flow heat exchangers. <i>International Journal of Heat and Mass Transfer</i> , 2014 , 74, 1-12	4.9	13
71	Fluid flow and mixed convective heat transfer around a semi-circular cylinder at incidence with a tandem downstream square cylinder in cross flow. <i>International Journal of Thermal Sciences</i> , 2017 , 121, 13-29	4.1	13

70	Empirical correlation of laminar forced convective flow in trapezoidal microchannel based on experimental and 3D numerical study. <i>International Journal of Thermal Sciences</i> , 2019 , 142, 422-433	4.1	12
69	Forced convective flow and heat transfer past an unconfined blunt headed cylinder at different angles of incidence. <i>Applied Mathematical Modelling</i> , 2020 , 82, 888-915	4.5	12
68	Haemoglobin content modulated deformation dynamics of red blood cells on a compact disc. <i>Lab on A Chip</i> , 2015 , 15, 4571-7	7.2	11
67	Evaluation of transient characteristics of medium temperature solar thermal systems utilizing thermal stratification. <i>Applied Energy</i> , 2018 , 224, 69-85	10.7	11
66	Generation of droplets to serpentine threads on a rotating compact-disk platform. <i>Applied Physics Letters</i> , 2015 , 107, 244101	3.4	11
65	Experimental and numerical study of latent heat thermal energy storage with high porosity metal matrix under intermittent heat loads. <i>Applied Energy</i> , 2020 , 263, 114649	10.7	10
64	Quasi-steady state moving boundary reduced order model of two-phase flow for ORC refrigerant in solar-thermal heat exchanger. <i>Renewable Energy</i> , 2018 , 126, 830-843	8.1	9
63	Numerical modelling of bubble growth in microchannel using Level Set Method. <i>International Journal of Heat and Mass Transfer</i> , 2016 , 101, 719-732	4.9	9
62	Exergetic and performance analyses of two-layered packed bed latent heat thermal energy storage system. <i>International Journal of Energy Research</i> , 2020 , 44, 2208-2225	4.5	9
61	Combined effect of inlet restrictor and nanostructure on two-phase flow performance of parallel microchannel heat sinks. <i>International Journal of Thermal Sciences</i> , 2020 , 153, 106339	4.1	9
60	Thermomechanical characterisations of PTFE, PEEK, PEKK as encapsulation materials for medium temperature solar applications. <i>Energy</i> , 2020 , 194, 116921	7.9	8
59	Air-water meniscus shape in superhydrophobic triangular microgroove is dictated by a critical pressure under dynamic conditions. <i>Physics of Fluids</i> , 2019 , 31, 102004	4.4	7
58	Comparison of the quasi-steady-state heat transport in phase-change and classical Rayleigh-B�ard convection for a wide range of Stefan number and Rayleigh number. <i>Physics of Fluids</i> , 2019 , 31, 096605	4.4	7
57	Single phase laminar fluid flow and heat transfer in microchannel with cylindrical and parallelepiped micro-fins. <i>Heat and Mass Transfer</i> , 2019 , 55, 613-626	2.2	7
56	Microgroove geometry dictates slippery hydrodynamics on superhydrophobic substrates. <i>Physics of Fluids</i> , 2018 , 30, 122007	4.4	7
55	Computational study of performance of cascaded multi-layered packed-bed thermal energy storage for high temperature applications. <i>Journal of Energy Storage</i> , 2020 , 32, 101930	7.8	6
54	Three-dimensional numerical study of flow physics of single-phase laminar flow through diamond (diverging/converging) microchannel. <i>SN Applied Sciences</i> , 2019 , 1, 1	1.8	6
53	Controlled splitting and focusing of a stream of nanoparticles in a converging-diverging microchannel. <i>Lab on A Chip</i> , 2014 , 14, 3800-8	7.2	6

52	An ingenious fluidic capacitor for complete suppression of thermal fluctuations in two-phase microchannel heat sinks. <i>International Communications in Heat and Mass Transfer</i> , 2020 , 110, 104347	5.8	6
51	Fluid flow and heat transfer in microchannel with porous bio-inspired roughness. <i>International Journal of Thermal Sciences</i> , 2021 , 161, 106729	4.1	6
50	Interplay of Coriolis effect with rheology results in unique blood dynamics on a compact disc. <i>Analyst, The</i> , 2019 , 144, 3782-3789	5	5
49	Confluence of channel dimensions and groove width dictates slippery hydrodynamics in grooved hydrophobic confinements. <i>Microfluidics and Nanofluidics</i> , 2020 , 24, 1	2.8	5
48	Experimental and numerical study of thermal performance of helical coil receiver with Fresnel lens. <i>Applied Thermal Engineering</i> , 2020 , 165, 114608	5.8	5
47	Effect of shrinkage void on thermal performance of pure and binary phase change materials based thermal energy storage system: A semi-analytical approach. <i>Applied Thermal Engineering</i> , 2020 , 167, 114706	5.8	5
46	Thermal-hydraulic characteristics of purge gas in a rectangular packed pebble bed of a fusion reactor using DEM-CFD and porous medium analyses. <i>Fusion Engineering and Design</i> , 2020 , 160, 111848	1.7	5
45	Evolution of solid-liquid interface in bottom heated cavity for low Prandtl number using lattice Boltzmann method. <i>Physics of Fluids</i> , 2021 , 33, 057102	4.4	5
44	Numerical study of thermal management of data centre using porous medium approach. <i>Journal of Building Engineering</i> , 2019 , 22, 200-215	5.2	5
43	Forced convection past a semi-circular cylinder at incidence with a downstream circular cylinder: Thermofluidic transport and stability analysis. <i>Physics of Fluids</i> , 2021 , 33, 023603	4.4	5
42	Comparative Evaluation of Circular Truncated-Cone and Paraboloid Shapes for Thermal Energy Storage Tank based on Thermal Stratification Performance. <i>Journal of Energy Storage</i> , 2021 , 34, 102191	7.8	5
41	Experimental and numerical study of effect of secondary surfaces fixed over rectangular vortex generator with an overview of dynamic mode decomposition. <i>Physics of Fluids</i> , 2020 , 32, 057101	4.4	4
40	Numerical Study on Effect of Secondary Surface on Rectangular Vortex Generator. <i>Journal of Thermal Science and Engineering Applications</i> , 2021 , 13,	1.9	4
39	NUMERICAL STUDY OF BUBBLE GROWTH AND HEAT TRANSFER IN MICROCHANNEL USING DYNAMIC CONTACT ANGLE MODELS. <i>Computational Thermal Sciences</i> , 2020 , 12, 41-54	1.9	4
38	Enhanced Design of PPE Based on Electrostatic Principle to Eliminate Viruses (SARS-CoV-2) 2020 , 5, 337-341		4
37	Performance enhancement of tapered helical coil receiver using novel nanostructured carbon florets coating. <i>Applied Thermal Engineering</i> , 2021 , 194, 117065	5.8	4
36	Comparative Study of Thermal Performance of Parallel Plate and Rectangular Microchannel Counter Flow Heat Exchangers. <i>Heat Transfer Engineering</i> , 2017 , 38, 1404-1414	1.7	3
35	Effect of axial conduction in integral rough friction stir channels: experimental thermo-hydraulic characteristics analyses. <i>Heat and Mass Transfer</i> , 2020 , 56, 1725-1738	2.2	3

34	A numerical approach on achieving uniform thickness distribution in pressure thermoforming. <i>Manufacturing Letters</i> , 2019 , 21, 24-27	4.5	3
33	Capillary Filling Dynamics of Electromagneto-hydrodynamic Flow of Non-Newtonian Fluids. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2020 , 142,	2.1	3
32	Surface Nanostructure-Wettability Coupling Leads to Unique Topological Evolution Dictating Water Transport over Nanometer Scales. <i>Langmuir</i> , 2020 , 36, 8111-8122	4	2
31	Study of hydrothermal transport phenomena and performance characteristics for a flow through a diamond (diverging-converging) microchannel. <i>Thermal Science and Engineering Progress</i> , 2022 , 29, 101195	3.6	2
30	Thermal and structural characterizations of packed bed thermal energy storage with cylindrical micro-encapsulated phase change materials. <i>Journal of Energy Storage</i> , 2022 , 48, 103948	7.8	2
29	Study of bubble growth and microchannel flow boiling heat transfer characteristics using dynamic contact angle model. <i>Thermal Science and Engineering Progress</i> , 2020 , 20, 100743	3.6	2
28	Onset of Nucleate Boiling, Void Fraction, and Liquid Film Thickness 2016 , 5-90		2
27	A portable rotating disc as blood rheometer. <i>Biomicrofluidics</i> , 2019 , 13, 064120	3.2	2
26	Investigation of flow distribution and effect of aspect ratio on critical heat flux in multiple parallel microchannel flow boiling. <i>Heat and Mass Transfer</i> , 2021 , 57, 647-663	2.2	2
25	An Investigation of Two-Phase Flow Regimes for Microchannels Based on Void Fraction. <i>IEEE Transactions on Components, Packaging and Manufacturing Technology</i> , 2019 , 9, 2189-2199	1.7	1
24	Novel dimension scaling for optimal mass flow rate estimation in low temperature flat plate solar collector based on thermal performance parameters. <i>Thermal Science and Engineering Progress</i> , 2020 , 19, 100569	3.6	1
23	Study of hot stress dynamic IR thermography for detecting surface cancerous tissue. <i>Journal of Medical Engineering and Technology</i> , 2020 , 44, 284-298	1.8	1
22	Study of the interactions of sneezing droplets with particulate matter in a polluted environment. <i>Physics of Fluids</i> , 2021 , 33, 113310	4.4	1
21	Performance analysis of a packed bed latent heat thermal energy storage with cylindrical-shaped encapsulation. <i>International Journal of Energy Research</i> , 2021 , 45, 13130-13148	4.5	1
20	Reduced Order Heat Exchanger Models for Low-to-Medium Temperature Range Solar Thermal Applications. <i>Energy, Environment, and Sustainability</i> , 2019 , 357-393	0.8	1
19	Novel Method for Discontinuity Detection in Pipelines Carrying Oils and Gases. <i>Journal of Pipeline Systems Engineering and Practice</i> , 2021 , 12, 04020071	1.5	1
18	Hydrothermal and Second Law Analyses of Fluid Flow in Converging-Diverging (Hourglass) Microchannel. <i>Heat Transfer Engineering</i> , 1-26	1.7	1
17	Response Surface Methodology-based prediction model for working fluid temperature during stand-alone operation of vertical cylindrical thermal energy storage tank. <i>Renewable Energy</i> , 2022 , 188, 619-636	8.1	1

16	Study of melting of paraffin dispersed with copper nanoparticles in square cavity subjected to external magnetic field. <i>Journal of Energy Storage</i> , 2022 , 50, 104338	7.8	1
15	Physics of fluid flow in an hourglass (converging-diverging) microchannel. <i>Physics of Fluids</i> , 2022 , 34, 052006	4.4	1
14	Transient performance analysis of a novel design of portable magnetic refrigeration system.. <i>Physics of Fluids</i> , 2022 , 34, 013611	4.4	0
13	Study of shrinkage effect of aluminium based binary alloys as phase change materials for latent heat thermal energy storage applications. <i>Journal of Energy Storage</i> , 2021 , 47, 103587	7.8	0
12	Forced convective flow and heat transfer past a blunt headed cylinder with corner modification. <i>Physics of Fluids</i> , 2021 , 33, 103106	4.4	0
11	A Numerical Study on Condensation Heat Transfer Characteristics of R134a in Microchannel Under Varying Gravity Conditions. <i>Microgravity Science and Technology</i> , 2021 , 33, 1	1.6	0
10	Effect of outlet plenum design on flow boiling heat transfer in microchannel heat sinks. <i>Thermal Science and Engineering Progress</i> , 2021 , 23, 100868	3.6	0
9	CFD Investigation of helium gas flow in sphere packed (Pebble bed) in a rectangular canister using OpenFOAM. <i>Fusion Engineering and Design</i> , 2021 , 172, 112858	1.7	0
8	Complete suppression of flow boing instability in microchannel heat sinks using a combination of inlet restrictor and flexible dampener. <i>International Journal of Heat and Mass Transfer</i> , 2022 , 182, 121937-9	4.9	0
7	Laminar Forced Convective Heat Transfer Performance Analysis of Elliptical and Semicircular Microchannels. <i>Journal of Thermophysics and Heat Transfer</i> , 1-12	1.3	0
6	Development of scaling laws for prototyping and heat loss correlations for upward facing cylindrical helical coil and conical spiral coil receivers. <i>International Journal of Heat and Mass Transfer</i> , 2022 , 190, 122773	4.9	0
5	Dynamics of Phase Change of Gallium under Magnetic Field and Thermocapillary Effects under Variable Gravity Conditions. <i>Thermal Science and Engineering Progress</i> , 2022 , 101234	3.6	
4	Reduced Order Model of Encapsulated PCMs-Based Thermal Energy Storage. <i>Springer Proceedings in Energy</i> , 2020 , 285-295	0.2	
3	Multiscale Concentrated Solar Power. <i>Lecture Notes in Energy</i> , 2020 , 87-132	0.4	
2	Study of effect of magnetic field on the axisymmetric vortices produced by a novel vortex generator in a rectangular channel using dynamic mode decomposition. <i>Physics of Fluids</i> , 2020 , 32, 115111-4	4.4	
1	Hybridisation of geothermal source with ORC-based load loop for uninterrupted generation of steady power. <i>International Journal of Sustainable Energy</i> , 1-27	2.7	