

# Suman Chakraborty

## List of Publications by Year in descending order

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127  
papers

3,449  
citations

126708

33  
h-index

168136

53  
g-index

127  
all docs

127  
docs citations

127  
times ranked

2299  
citing authors

#	ARTICLE	IF	CITATIONS
1	Electroosmotically driven capillary transport of typical non-Newtonian biofluids in rectangular microchannels. <i>Analytica Chimica Acta</i> , 2007, 605, 175-184.	2.6	212
2	Electroosmosis-modulated peristaltic transport in microfluidic channels. <i>Physics of Fluids</i> , 2016, 28, .	1.6	125
3	Dynamics of capillary flow of blood into a microfluidic channel. <i>Lab on A Chip</i> , 2005, 5, 421.	3.1	115
4	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.	1.4	112
5	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.	3.0	112
6	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.	4.3	90
7	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.	1.4	81
8	Capillarity-driven blood plasma separation on paper-based devices. <i>Analyst, The</i> , 2015, 140, 6473-6476.	1.7	80
9	Electrokinetically modulated peristaltic transport of power-law fluids. <i>Microvascular Research</i> , 2016, 103, 41-54.	1.1	80
10	Mass flow-rate control through time periodic electro-osmotic flows in circular microchannels. <i>Physics of Fluids</i> , 2008, 20, .	1.6	71
11	Uniform electric-field-induced lateral migration of a sedimenting drop. <i>Journal of Fluid Mechanics</i> , 2016, 792, 553-589.	1.4	66
12	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, .	1.2	65
13	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.	1.1	64
14	Generalized Model for Time Periodic Electroosmotic Flows with Overlapping Electrical Double Layers. <i>Langmuir</i> , 2007, 23, 12421-12428.	1.6	62
15	Thermodynamics of premixed combustion in a heat recirculating micro combustor. <i>Energy</i> , 2014, 68, 510-518.	4.5	62
16	Steric effect and slip-modulated energy transfer in narrow fluidic channels with finite aspect ratios. <i>Electrophoresis</i> , 2010, 31, 843-849.	1.3	61
17	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.	1.4	60
18	Towards a generalized representation of surface effects on pressure-driven liquid flow in microchannels. <i>Applied Physics Letters</i> , 2007, 90, 034108.	1.5	56

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19	Anomalous Electrical Conductivity of Nanoscale Colloidal Suspensions. ACS Nano, 2008, 2, 2029-2036.	7.3	56
20	Numerical study of horizontal ground heat exchanger for high energy demand applications. Applied Thermal Engineering, 2015, 85, 252-263.	3.0	55
21	Modelling of turbulent molten pool convection in laser welding of a copper-nickel dissimilar couple. International Journal of Heat and Mass Transfer, 2007, 50, 1805-1822.	2.5	54
22	Transverse electrodes for improved DNA hybridization in microchannels. AIChE Journal, 2007, 53, 1086-1099.	1.8	53
23	Estimation of thermal performance and design optimization of finned multitube latent heat thermal energy storage. Journal of Energy Storage, 2018, 19, 135-144.	3.9	53
24	Study of laminar single phase frictional factor and Nusselt number in In-line micro pin-fin heat sink for electronic cooling applications. International Journal of Heat and Mass Transfer, 2019, 138, 796-808.	2.5	53
25	Performance study of a novel funnel shaped shell and tube latent heat thermal energy storage system. Renewable Energy, 2021, 165, 731-747.	4.3	53
26	A novel modeling and simulation technique of photo-thermal interactions between lasers and living biological tissues undergoing multiple changes in phase. Computers in Biology and Medicine, 2005, 35, 447-462.	3.9	51
27	Redefining electrical double layer thickness in narrow confinements: Effect of solvent polarization. Physical Review E, 2012, 85, 051508.	0.8	51
28	Analytical solutions for the rate of DNA hybridization in a microchannel in the presence of pressure-driven and electroosmotic flows. Sensors and Actuators B: Chemical, 2006, 114, 957-963.	4.0	50
29	Derivations of extended Navier-Stokes equations from upscaled molecular transport considerations for compressible ideal gas flows: Towards extended constitutive forms. Physics of Fluids, 2007, 19, .	1.6	46
30	Dynamic modelling of ORC-based solar thermal power plant integrated with multitube shell and tube latent heat thermal storage system. Applied Thermal Engineering, 2017, 123, 458-470.	3.0	45
31	Anomalous mixing behaviour in rotationally actuated microfluidic devices. Lab on A Chip, 2011, 11, 2823.	3.1	44
32	Latent heat thermal storage with variable porosity metal matrix: A numerical study. Renewable Energy, 2018, 125, 962-973.	4.3	40
33	Heat Transfer Characterization and Optimization of Latent Heat Thermal Storage System Using Fins for Medium Temperature Solar Applications. Journal of Solar Energy Engineering, Transactions of the ASME, 2017, 139, .	1.1	36
34	Effect of varying extent of PCM capsule filling on thermal stratification performance of a storage tank. Energy, 2019, 178, 1-20.	4.5	35
35	Energy and exergy analyses of medium temperature latent heat thermal storage with high porosity metal matrix. Applied Thermal Engineering, 2016, 109, 911-923.	3.0	33
36	Design and analysis of PCM based radiant heat exchanger for thermal management of buildings. Energy and Buildings, 2018, 169, 84-96.	3.1	33

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37	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.	2.6	33
38	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.	2.5	32
39	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.	2.5	32
40	Transient performance analysis of concentrating solar thermal power plant with finned latent heat thermal energy storage. <i>Renewable Energy</i> , 2020, 145, 1957-1971.	4.3	31
41	Controlled microbubble generation on a compact disk. <i>Applied Physics Letters</i> , 2010, 97, 234103.	1.5	28
42	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.	2.5	28
43	Development and fluidic simulation of microneedles for painless pathological interfacing with living systems. <i>Journal of Applied Physics</i> , 2008, 103, 114701.	1.1	27
44	Heat transfer characterization of rhombic microchannel for H1 and H2 boundary conditions. <i>International Journal of Thermal Sciences</i> , 2017, 111, 223-233.	2.6	24
45	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.	2.6	24
46	Facile Fabrication of Nanostructured Microchannels for Flow Boiling Heat Transfer Enhancement. <i>Heat Transfer Engineering</i> , 2019, 40, 537-548.	1.2	23
47	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.	2.5	23
48	Effect of hematocrit on blood dynamics on a compact disc platform. <i>Analyst</i> , 2015, 140, 1432-1437.	1.7	22
49	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.	2.2	22
50	Performance Analysis of Heat Sinks With Phase-Change Materials Subjected to Transient and Cyclic Heating. <i>Heat Transfer Engineering</i> , 2015, 36, 1349-1359.	1.2	21
51	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.	2.6	21
52	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.	3.9	21
53	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.	1.2	20
54	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.	3.9	20

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55	Design of a collector shape for uniform flow distribution in microchannels. Journal of Micromechanics and Microengineering, 2017, 27, 075026.	1.5	19
56	Magneto hydrodynamic buoyancy driven Al <sub>2</sub> O <sub>3</sub> -water nanofluid flow in a differentially heated trapezoidal enclosure with a cylindrical barrier. International Communications in Heat and Mass Transfer, 2020, 114, 104593.	2.9	19
57	Forced convective flow and heat transfer past an unconfined blunt headed cylinder at different angles of incidence. Applied Mathematical Modelling, 2020, 82, 888-915.	2.2	18
58	Fluid flow and mixed convective heat transfer around a semi-circular cylinder at incidence with a tandem downstream square cylinder in cross flow. International Journal of Thermal Sciences, 2017, 121, 13-29.	2.6	17
59	Experimental and numerical study of latent heat thermal energy storage with high porosity metal matrix under intermittent heat loads. Applied Energy, 2020, 263, 114649.	5.1	17
60	Thermomechanical characterisations of PTFE, PEEK, PEKK as encapsulation materials for medium temperature solar applications. Energy, 2020, 194, 116921.	4.5	16
61	Thermal-hydraulic characteristics of purge gas in a rectangular packed pebble bed of a fusion reactor using DEM-CFD and porous medium analyses. Fusion Engineering and Design, 2020, 160, 111848.	1.0	16
62	Fluid flow and heat transfer in microchannel with porous bio-inspired roughness. International Journal of Thermal Sciences, 2021, 161, 106729.	2.6	16
63	Response Surface Methodology-based prediction model for working fluid temperature during stand-alone operation of vertical cylindrical thermal energy storage tank. Renewable Energy, 2022, 188, 619-636.	4.3	15
64	A design method for rectangular microchannel counter flow heat exchangers. International Journal of Heat and Mass Transfer, 2014, 74, 1-12.	2.5	14
65	Haemoglobin content modulated deformation dynamics of red blood cells on a compact disc. Lab on A Chip, 2015, 15, 4571-4577.	3.1	13
66	Numerical modelling of bubble growth in microchannel using Level Set Method. International Journal of Heat and Mass Transfer, 2016, 101, 719-732.	2.5	13
67	Evaluation of transient characteristics of medium temperature solar thermal systems utilizing thermal stratification. Applied Energy, 2018, 224, 69-85.	5.1	13
68	Microgroove geometry dictates slippery hydrodynamics on superhydrophobic substrates. Physics of Fluids, 2018, 30, 122007.	1.6	13
69	Single phase laminar fluid flow and heat transfer in microchannel with cylindrical and parallelepiped micro-fins. Heat and Mass Transfer, 2019, 55, 613-626.	1.2	13
70	Three-dimensional numerical study of flow physics of single-phase laminar flow through diamond (diverging-converging) microchannel. SN Applied Sciences, 2019, 1, 1.	1.5	13
71	Comparative Evaluation of Circular Truncated-Cone and Paraboloid Shapes for Thermal Energy Storage Tank based on Thermal Stratification Performance. Journal of Energy Storage, 2021, 34, 102191.	3.9	13
72	Air-water meniscus shape in superhydrophobic triangular microgroove is dictated by a critical pressure under dynamic conditions. Physics of Fluids, 2019, 31, .	1.6	12

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73	Numerical study of thermal management of data centre using porous medium approach. Journal of Building Engineering, 2019, 22, 200-215.	1.6	12
74	An ingenious fluidic capacitor for complete suppression of thermal fluctuations in two-phase microchannel heat sinks. International Communications in Heat and Mass Transfer, 2020, 110, 104347.	2.9	12
75	Effect of shrinkage void on thermal performance of pure and binary phase change materials based thermal energy storage system: A semi-analytical approach. Applied Thermal Engineering, 2020, 167, 114706.	3.0	12
76	Performance enhancement of tapered helical coil receiver using novel nanostructured carbon florets coating. Applied Thermal Engineering, 2021, 194, 117065.	3.0	12
77	Generation of droplets to serpentine threads on a rotating compact-disk platform. Applied Physics Letters, 2015, 107, .	1.5	11
78	Comparison of the quasi-steady-state heat transport in phase-change and classical Rayleigh-Bénard convection for a wide range of Stefan number and Rayleigh number. Physics of Fluids, 2019, 31, .	1.6	11
79	Confluence of channel dimensions and groove width dictates slippery hydrodynamics in grooved hydrophobic confinements. Microfluidics and Nanofluidics, 2020, 24, 1.	1.0	11
80	Performance analysis of a packed bed latent heat thermal energy storage with cylindrical-shaped encapsulation. International Journal of Energy Research, 2021, 45, 13130-13148.	2.2	11
81	Thermal and structural characterizations of packed bed thermal energy storage with cylindrical micro-encapsulated phase change materials. Journal of Energy Storage, 2022, 48, 103948.	3.9	11
82	Quasi-steady state moving boundary reduced order model of two-phase flow for ORC refrigerant in solar-thermal heat exchanger. Renewable Energy, 2018, 126, 830-843.	4.3	10
83	Numerical Study on Effect of Secondary Surface on Rectangular Vortex Generator. Journal of Thermal Science and Engineering Applications, 2021, 13, .	0.8	10
84	Study of hydrothermal transport phenomena and performance characteristics for a flow through a diamond (diverging-converging) microchannel. Thermal Science and Engineering Progress, 2022, 29, 101195.	1.3	10
85	Effect of axial conduction in integral rough friction stir channels: experimental thermo-hydraulic characteristics analyses. Heat and Mass Transfer, 2020, 56, 1725-1738.	1.2	9
86	Evolution of solid-liquid interface in bottom heated cavity for low Prandtl number using lattice Boltzmann method. Physics of Fluids, 2021, 33, 057102.	1.6	9
87	Complete suppression of flow boiling instability in microchannel heat sinks using a combination of inlet restrictor and flexible dampener. International Journal of Heat and Mass Transfer, 2022, 182, 121937.	2.5	9
88	Physics of fluid flow in an hourglass (converging-diverging) microchannel. Physics of Fluids, 2022, 34, .	1.6	9
89	CFD Investigation of helium gas flow in sphere packed (Pebble bed) in a rectangular canister using OpenFOAM. Fusion Engineering and Design, 2021, 172, 112858.	1.0	8
90	A portable rotating disc as blood rheometer. Biomicrofluidics, 2019, 13, 064120.	1.2	7

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91	Experimental and numerical study of thermal performance of helical coil receiver with Fresnel lens. Applied Thermal Engineering, 2020, 165, 114608.	3.0	7
92	Study of bubble growth and microchannel flow boiling heat transfer characteristics using dynamic contact angle model. Thermal Science and Engineering Progress, 2020, 20, 100743.	1.3	7
93	Study of the interactions of sneezing droplets with particulate matter in a polluted environment. Physics of Fluids, 2021, 33, 113310.	1.6	7
94	Controlled splitting and focusing of a stream of nanoparticles in a convergingâ€“diverging microchannel. Lab on A Chip, 2014, 14, 3800.	3.1	6
95	Interplay of Coriolis effect with rheology results in unique blood dynamics on a compact disc. Analyst, The, 2019, 144, 3782-3789.	1.7	6
96	Forced convection past a semi-circular cylinder at incidence with a downstream circular cylinder: Thermofluidic transport and stability analysis. Physics of Fluids, 2021, 33, 023603.	1.6	6
97	Onset of Nucleate Boiling, Void Fraction, and Liquid Film Thickness. , 2016, , 5-90.		5
98	A numerical approach on achieving uniform thickness distribution in pressure thermoforming. Manufacturing Letters, 2019, 21, 24-27.	1.1	5
99	Experimental and numerical study of effect of secondary surfaces fixed over rectangular vortex generator with an overview of dynamic mode decomposition. Physics of Fluids, 2020, 32, 057101.	1.6	5
100	Enhanced Design of PPE Based on Electrostatic Principle to Eliminate Viruses (SARS-CoV-2). , 2020, 5, 337-341.		5
101	NUMERICAL STUDY OF BUBBLE GROWTH AND HEAT TRANSFER IN MICROCHANNEL USING DYNAMIC CONTACT ANGLE MODELS. Computational Thermal Sciences, 2020, 12, 41-54.	0.5	5
102	Development of scaling laws for prototyping and heat loss correlations for upward facing cylindrical helical coil and conical spiral coil receivers. International Journal of Heat and Mass Transfer, 2022, 190, 122773.	2.5	5
103	Experimental investigation of heat dispatch controllability through simultaneous charging-discharging and stand-alone discharging operations in vertical cylindrical sensible heat storage tank. Journal of Energy Storage, 2022, 54, 105268.	3.9	5
104	A Numerical Study on Condensation Heat Transfer Characteristics of R134a in Microchannel Under Varying Gravity Conditions. Microgravity Science and Technology, 2021, 33, 1.	0.7	4
105	Capillary Filling Dynamics of Electromagnetohydrodynamic Flow of Non-Newtonian Fluids. Journal of Fluids Engineering, Transactions of the ASME, 2020, 142, .	0.8	4
106	Study of shrinkage effect of aluminium based binary alloys as phase change materials for latent heat thermal energy storage applications. Journal of Energy Storage, 2022, 47, 103587.	3.9	4
107	Comparative Study of Thermal Performance of Parallel Plate and Rectangular Microchannel Counter Flow Heat Exchangers. Heat Transfer Engineering, 2017, 38, 1404-1414.	1.2	3
108	An Investigation of Two-Phase Flow Regimes for Microchannels Based on Void Fraction. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2019, 9, 2189-2199.	1.4	3



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109	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, .	1.6	3
110	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.	1.3	3
111	Study of hot stress dynamic IR thermography for detecting surface cancerous tissue. <i>Journal of Medical Engineering and Technology</i> , 2020, 44, 284-298.	0.8	3
112	Surface Nanostructureâ€™Wettability Coupling Leads to Unique Topological Evolution Dictating Water Transport over Nanometer Scales. <i>Langmuir</i> , 2020, 36, 8111-8122.	1.6	3
113	Hybridisation of geothermal source with ORC-based load loop for uninterrupted generation of steady power. <i>International Journal of Sustainable Energy</i> , 2022, 41, 58-84.	1.3	3
114	Forced convective flow and heat transfer past a blunt headed cylinder with corner modification. <i>Physics of Fluids</i> , 2021, 33, 103106.	1.6	3
115	Transient performance analysis of a novel design of portable magnetic refrigeration system. <i>Physics of Fluids</i> , 2022, 34, 013611.	1.6	3
116	Reduced Order Heat Exchanger Models for Low-to-Medium Temperature Range Solar Thermal Applications. <i>Energy, Environment, and Sustainability</i> , 2019, , 357-393.	0.6	2
117	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.	1.2	2
118	Effect of outlet plenum design on flow boiling heat transfer in microchannel heat sinks. <i>Thermal Science and Engineering Progress</i> , 2021, 23, 100868.	1.3	2
119	Laminar Forced Convective Heat Transfer Performance Analysis of Elliptical and Semicircular Microchannels. <i>Journal of Thermophysics and Heat Transfer</i> , 2022, 36, 836-847.	0.9	2
120	Hydrothermal and Second Law Analyses of Fluid Flow in Converging-Diverging (Hourglass) Microchannel. <i>Heat Transfer Engineering</i> , 2023, 44, 277-302.	1.2	2
121	Development of numerical model to study the effect of condensate liquid layer on condensation heat transfer of R134a in minichannel. <i>Heat and Mass Transfer</i> , 0, , .	1.2	2
122	Novel Method for Discontinuity Detection in Pipelines Carrying Oils and Gases. <i>Journal of Pipeline Systems Engineering and Practice</i> , 2021, 12, 04020071.	0.9	1
123	NUMERICAL INVESTIGATION OF ENTROPY GENERATION DURING THE DISCHARGE OF ENCAPSULATED PHASE CHANGE MATERIAL-BASED THERMAL ENERGY STORAGE. <i>Heat Transfer Research</i> , 2020, 51, 517-535.	0.9	1
124	Dynamics of phase change of gallium under magnetic field and thermocapillary effects under variable gravity conditions. <i>Thermal Science and Engineering Progress</i> , 2022, 29, 101234.	1.3	1
125	10.1063/1.5110295.1. , 2019, , .		0
126	Reduced Order Model of Encapsulated PCMs-Based Thermal Energy Storage. <i>Springer Proceedings in Energy</i> , 2020, , 285-295.	0.2	0



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127	Multiscale Concentrated Solar Power. Lecture Notes in Energy, 2020, , 87-132.	0.2	0