Pranab Kumar Mondal

List of Publications by Year
in descending order

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106 papers	2,132 citations	172386 29 h-index	345118 36 g-index
107 all docs	107 docs citations	107 times ranked	719 citing authors

#	Article	IF	Citations
1	Electroosmotic flow of Phan-Thienâ€“Tanner fluids at high zeta potentials: An exact analytical solution. Physics of Fluids, 2018, 30, .	1.6	69
2	A review of the state-of-the-art nanofluid spray and jet impingement cooling. Physics of Fluids, 2020, 32, .	1.6	61
3	Electric-field-driven contact-line dynamics of two immiscible fluids over chemically patterned surfaces in narrow confinements. Physical Review E, 2013, 88, 023022.	0.8	59
4	Numerical study of the vortexâ€induced electroosmotic mixing of nonâ€Newtonian biofluids in a nonuniformly charged wavy microchannel: Effect of finite ion size. Electrophoresis, 2021, 42, 2498-2510.	1.3	58
5	Unsteady electro-osmotic flow of couple stress fluid in a rotating microchannel: An analytical solution. Physics of Fluids, 2020, 32, .	1.6	51
6	Transiences in rotational electro-hydrodynamics microflows of a viscoelastic fluid under electrical double layer phenomena. Journal of Non-Newtonian Fluid Mechanics, 2016, 231, 56-67.	1.0	46
7	Investigation into the thermo-hydrodynamics of ferrofluid flow under the influence of constant and alternating magnetic field by InfraRed Thermography. International Journal of Heat and Mass Transfer, 2019, 135, 1233-1247.	2.5	46
8	Entropy Generation Minimization in an Electroosmotic Flow of Non-Newtonian Fluid: Effect of Conjugate Heat Transfer. Journal of Heat Transfer, 2016, 138, .	1.2	43
9	Irreversibility analysis of hybrid nanofluid flow over a rotating disk: Effect of thermal radiation and magnetic field. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2022, 635, 128077.	2.3	43
10	Towards the minimization of thermodynamic irreversibility in an electrically actuated microflow of a viscoelastic fluid under electrical double layer phenomenon. Physics of Fluids, 2017, 29, .	1.6	40
11	Transport of neutral solutes in a viscoelastic solvent through a porous microchannel. Physics of Fluids, 2019, 31, .	1.6	38
12	Softness Induced Enhancement in Net Throughput of Non-Linear Bio-Fluids in Nanofluidic Channel under EDL Phenomenon. Scientific Reports, 2018, 8, 7893.	1.6	37
13	Electrothermally modulated contact line dynamics of a binary fluid in a patterned fluidic environment. Physics of Fluids, 2018, 30, .	1.6	36
14	Rotational electrohydrodynamics of a non-Newtonian fluid under electrical double-layer phenomenon: the role of lateral confinement. Microfluidics and Nanofluidics, 2017, 21, 1.	1.0	35
15	Magneto-hydrodynamic (MHD) micropump of nanofluids in a rotating microchannel under electrical double-layer effect. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2020, 234, 318-330.	1.4	35
16	Non-linear drag induced entropy generation analysis in a microporous channel: The effect of conjugate heat transfer. International Journal of Heat and Mass Transfer, 2017, 108, 2217-2228.	2.5	34
17	Thermocapillary-actuated contact-line motion of immiscible binary fluids over substrates with patterned wettability in narrow confinement. Physical Review E, 2014, 90, 023011.	0.8	33
18	Rheology-modulated contact line dynamics of an immiscible binary system under electrical double layer phenomena. Soft Matter, 2015, 11, 6692-6702.	1.2	32

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19	Electroosmotic transport of immiscible binary system with a layer of nonâ€conducting fluid under interfacial slip: The role applied pressure gradient. Electrophoresis, 2016, 37, 1998-2009.	1.3	32
20	Slip driven micro-pumping of binary system with a layer of non-conducting fluid under electrical double layer phenomenon. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2017, 518, 166-172.	2.3	32
21	Rotating electroosmotic flow through a polyelectrolyte-grafted microchannel: An analytical solution. Physics of Fluids, 2019, 31, .	1.6	32
22	Field driven evaporation kinetics of a sessile ferrofluid droplet on a soft substrate. Soft Matter, 2020, 16, 6619-6632.	1.2	32
23	Contact line dynamics of electroosmotic flows of incompressible binary fluid system with density and viscosity contrasts. Physics of Fluids, 2015, 27, 032109.	1.6	31
24	Flow dynamics of a viscoelastic fluid squeezed and extruded between two parallel plates. Journal of Non-Newtonian Fluid Mechanics, 2016, 227, 56-64.	1.0	31
25	Confinement effects on the rotational microflows of a viscoelastic fluid under electrical double layer phenomenon. Journal of Non-Newtonian Fluid Mechanics, 2017, 244, 123-137.	1.0	31
26	Effect of couple stresses on the rheology and dynamics of linear Maxwell viscoelastic fluids. Physics of Fluids, 2020, 32, .	1.6	31
27	Magnetofluidic mixing of a ferrofluid droplet under the influence of a time-dependent external field. Journal of Fluid Mechanics, 2021, 917, .	1.4	31
28	Investigation of the crosswind-influenced thermal performance of a natural draft counterflow cooling tower. International Journal of Heat and Mass Transfer, 2015, 85, 1049-1057.	2.5	30
29	Two-phase flow boiling in a microfluidic channel at high mass flux. Physics of Fluids, 2020, 32, .	1.6	30
30	Effect of conjugate heat transfer on the thermo-electro-hydrodynamics of nanofluids: entropy optimization analysis. Journal of Thermal Analysis and Calorimetry, 2022, 147, 599-614.	2.0	27
31	Efficient electroosmotic mixing in a narrow-fluidic channel: the role of a patterned soft layer. Soft Matter, 2020, 16, 6304-6316.	1.2	27
32	Multilayer Graphene Oxide Membrane in Forward Osmosis: Molecular Insights. ACS Applied Nano Materials, 2018, 1, 4450-4460.	2.4	26
33	Pulsating electric field modulated contact line dynamics of immiscible binary systems in narrow confinements under an electrical double layer phenomenon. Soft Matter, 2014, 10, 8512-8523.	1.2	25
34	Non-linear drag induced irreversibility minimization in a viscous dissipative flow through a micro-porous channel. Energy, 2017, 119, 588-600.	4.5	25
35	Heat Transfer and Entropy Generation Characteristics of a Non-Newtonian Fluid Squeezed and Extruded Between Two Parallel Plates. Journal of Heat Transfer, 2017, 139, .	1.2	25
36	Entropy Generation Minimization in a Pressure-Driven Microflow of Viscoelastic Fluid With Slippage at the Wall: Effect of Conjugate Heat Transfer. Journal of Heat Transfer, 2018, 140, .	1.2	25

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37	Irreversibility analysis in a slip aided electroosmotic flow through an asymmetrically heated microchannel: The effects of joule heating and the conjugate heat transfer. Analytica Chimica Acta, 2019, 1045, 85-97.	2.6	24
38	Magnetic field driven actuation of sessile ferrofluid droplets in the presence of a time dependent magnetic field. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2020, 586, 124116.	2.3	24
39	Dynamics of viscoelastic fluid in a rotating soft microchannel. Physics of Fluids, 2020, 32, .	1.6	24
40	Effect of conjugate heat transfer on the irreversibility generation rate in a combined Couetteâ€“Poiseuille flow between asymmetrically heated parallel plates: The entropy minimization analysis. Energy, 2015, 83, 55-64.	4.5	23
41	Surface Tension Driven Filling in a Soft Microchannel: Role of Streaming Potential. Industrial & Engineering Chemistry Research, 2020, 59, 3839-3853.	1.8	21
42	Entropy analysis for the Couette flow of non-Newtonian fluids between asymmetrically heated parallel plates: effect of applied pressure gradient. Physica Scripta, 2014, 89, 125003.	1.2	20
43	Effect of Conjugate Heat Transfer on Entropy Generation in Slip-Driven Microflow of Power Law Fluids. Nanoscale and Microscale Thermophysical Engineering, 2017, 21, 26-44.	1.4	20
44	Marangoni instability in a thin film heated from below: Effect of nonmonotonic dependence of surface tension on temperature. Physical Review E, 2018, 97, 043105.	0.8	20
45	VISCOUS DISSIPATION EFFECTS ON THE LIMITING VALUE OF NUSSELT NUMBERS FOR A SHEAR DRIVEN FLOW BETWEEN TWO ASYMMETRICALLY HEATED PARALLEL PLATES. Frontiers in Heat and Mass Transfer, 2012, 3, .	0.1	20
46	Unsteady electromagnetohydrodynamic flow of couple stress fluid through a microchannel: A theoretical analysis. European Journal of Mechanics, B/Fluids, 2022, 95, 83-93.	1.2	20
47	Influence of the presence of cations on the water and salt dynamics inside layered graphene oxide (GO) membranes. Nanoscale, 2020, 12, 7273-7283.	2.8	19
48	Pulsating flow driven alteration in moving contact-line dynamics on surfaces with patterned wettability gradients. Journal of Applied Physics, 2014, 116, .	1.1	18
49	Electroosmosis of Powellâ€“Eyring fluids under interfacial slip. Electrophoresis, 2015, 36, 703-711.	1.3	18
50	Magnetic-field-driven alteration in capillary filling dynamics in a narrow fluidic channel. Physical Review E, 2017, 96, 013113.	0.8	18
51	Thermo-hydrodynamics of a viscoelastic fluid under asymmetrical heating. International Journal of Heat and Mass Transfer, 2018, 125, 515-524.	2.5	18
52	Thermosolutal Marangoni instability in a viscoelastic liquid film: effect of heating from the free surface. Journal of Fluid Mechanics, 2021, 909, .	1.4	18
53	Interfacial dynamics of two immiscible fluids in spatially periodic porous media: The role of substrate wettability. Physical Review E, 2014, 90, 013003.	0.8	17
54	Slipping hydrodynamics of Powellâ€“Eyring fluid in a cylindrical microchannel under electrical double layer phenomenon. Physica Scripta, 2019, 94, 025002.	1.2	17

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55	Autonomous filling of a viscoelastic fluid in a microfluidic channel: Effect of streaming potential. Journal of Non-Newtonian Fluid Mechanics, 2020, 282, 104317.	1.0	17
56	Flow boiling pressure drop characteristics in a multi-microchannel heat sink. Physics of Fluids, 2021, 33, .	1.6	17
57	Bejan's flow visualization of buoyancy-driven flow of a hydromagnetic Casson fluid from an isothermal wavy surface. Physics of Fluids, 2021, 33, .	1.6	17
58	Mesoscopic characterization of bubble dynamics in subcooled flow boiling following a pseudopotential-based approach. International Journal of Multiphase Flow, 2022, 148, 103923.	1.6	17
59	Effect of thermal asymmetries on the entropy generation analysis of a variable viscosity Couetteâ€“Poiseuille flow. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2017, 231, 1011-1024.	1.4	16
60	Electroâ€capillary filling in a microchannel under the influence of magnetic and electric fields. Canadian Journal of Chemical Engineering, 2021, 99, 725-741.	0.9	16
61	Magnetofluidic-based controlled droplet breakup: effect of non-uniform force field. Journal of Fluid Mechanics, 2022, 944, .	1.4	16
62	Thermodynamically Consistent Limiting Nusselt Number in the Viscous Dissipative Non-Newtonian Couette Flows. Industrial & Engineering Chemistry Research, 2014, 53, 402-414.	1.8	15
63	Marangoni instability in a heated viscoelastic liquid film: Long-wave versus short-wave perturbations. Physical Review E, 2019, 100, 013103.	0.8	15
64	Dynamics of a single isolated ferrofluid plug inside a micro-capillary in the presence of externally applied magnetic field. Experiments in Fluids, 2020, 61, 1.	1.1	15
65	Electro-osmotic flow through nanochannel with different surface charge configurations: A molecular dynamics simulation study. Physics of Fluids, 2021, 33, .	1.6	15
66	Viscous dissipation effects on the limiting value of Nusselt numbers for a shear-driven flow through an asymmetrically heated annulus. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2012, 226, 2941-2949.	1.1	14
67	Application of artificial neural network for understanding multi-layer microscale transport comprising of alternate Newtonian and non-Newtonian fluids. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2022, 642, 128664.	2.3	14
68	Slipâ€driven electroosmotic transport through porous media. Electrophoresis, 2017, 38, 596-606.	1.3	13
69	Effects of gravity on the thermo-hydrodynamics of moving contact lines. Physics of Fluids, 2018, 30, 042109.	1.6	13
70	Analysis of the Effects of Joule Heating and Viscous Dissipation on Combined Pressure-Driven and Electrokinetic Flows in a Two-Parallel Plate Channel with Unequal Constant Temperatures. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2019, 233, 871-879.	1.4	13
71	Biobutanol as a potential alternative to petroleum fuel: Sustainable bioprocess and cost analysis. Fuel, 2020, 278, 118403.	3.4	12
72	Predicting Performance of Briquette Made from Millet Bran: A Neural Network Approach. Advanced Journal of Graduate Research, 2020, 9, 1-13.	0.5	12

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73	Irreversibility analysis of the convective flow through corrugated channels: a comprehensive review. European Physical Journal Plus, 2021, 136, 1.	1.2	11
74	Rheology modulated high electrochemomechanical energy conversion in soft narrow-fluidic channel. Journal of Non-Newtonian Fluid Mechanics, 2020, 285, 104381.	1.0	10
75	Mixing in a rotating soft microchannel under electrical double layer effect: A variational calculus approach. Physics of Fluids, 2021, 33, .	1.6	10
76	Marangoni instability in a viscoelastic binary film with cross-diffusive effect. Journal of Fluid Mechanics, 2021, 910, .	1.4	10
77	Assesment of Thermodynamic Irreversibility in a Micro-Scale Viscous Dissipative Circular Couette Flow. Entropy, 2018, 20, 50.	1.1	9
78	Analysis of Heat Transfer Through Optically Participating Medium in a Concentric Spherical Enclosure: The Role of Dual-Phase-Lag Conduction and Radiation. Journal of Thermal Science and Engineering Applications, 2018, 10, .	0.8	9
79	Algorithmic augmentation in the pseudopotential-based lattice Boltzmann method for simulating the pool boiling phenomenon with high-density ratio. Physical Review E, 2021, 103, 053302.	0.8	9
80	Analysis and experiments on the spreading dynamics of a viscoelastic drop. Applied Mathematical Modelling, 2019, 75, 201-209.	2.2	8
81	Capillary imbibition of non-Newtonian fluids in a microfluidic channel: analysis and experiments. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, .	1.0	8
82	Investigations into the Complete Spreading Dynamics of a Viscoelastic Drop on a Spherical Substrate. Langmuir, 2021, 37, 63-75.	1.6	8
83	Buoyancy driven flow of a couple stress fluid from an isothermal vertical plate: the role of spatially periodic magnetic field. Physica Scripta, 2021, 96, 125014.	1.2	8
84	Mixing in small scale fluidic systems swayed by rotationality effects. Physics of Fluids, 2022, 34, .	1.6	8
85	Influence of viscoelectric effect on diffusioosmotic transport in nanochannel. Electrophoresis, 2023, 44, 44-52.	1.3	8
86	Dehydration of acetic acid using layered graphene oxide (GO) membrane through forward osmosis (FO) process: a molecular dynamics study. Molecular Simulation, 2020, 46, 1500-1508.	0.9	7
87	Numerical analysis of combined-mode dual-phase-lag heat conduction and radiation in an absorbing, emitting, and scattering cylindrical medium. Numerical Heat Transfer; Part A: Applications, 2017, 71, 769-788.	1.2	6
88	Irreversibility analysis in a low Peclet-number electroosmotic transport through an asymmetrically heated microchannel. International Journal of Exergy, 2017, 22, 29.	0.2	6
89	Survivability of a particle laden sessile coughed and sneezed droplet subjected to different ambient conditions. International Journal of Thermal Sciences, 2022, 176, 107525.	2.6	6
90	Artificial neural network-based modelling of optimized experimental study of xylanase production by Penicillium citrinum xym2. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2022, 236, 1340-1348.	1.4	6

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91	Multifunctional liquid marbles to stabilize and transport reactive fluids. Soft Matter, 2021, 17, 5084-5095.	1.2	5
92	Entropy Generation in a Viscoelastic Fluid Squeezed and Extruded Between Two Parallel Plates. , 2019, , .		5
93	Quantitative model for predicting the imbibition dynamics of viscoelastic fluids in nonuniform microfluidic assays. Physical Review E, 2021, 104, 055106.	0.8	5
94	Characterization of condensation on nanostructured surfaces and associated thermal hydraulics using a thermal lattice Boltzmann method. Physical Review E, 2022, 105, 045308.	0.8	5
95	Towards the Investigation of Heat Transfer Characteristics in a Viscous Dissipative Shear Driven Flow Through an Annulus: An Analytical Study. Heat Transfer - Asian Research, 2013, 42, 569-588.	2.8	4
96	Irreversibility analysis in a low Peclet-number electroosmotic transport through an asymmetrically heated microchannel. International Journal of Exergy, 2017, 22, 29.	0.2	3
97	Probing Into the Drying Pattern Dynamics of a Ferrofluid Droplet Under the Actuation of Magnetic Field. IEEE Transactions on Magnetics, 2023, 59, 1-7.	1.2	3
98	Evaluation of temperature history of a spherical nanosystem irradiated with various short-pulse laser sources. Physical Review E, 2018, 97, 043302.	0.8	2
99	Spreadsheet analysis of the fieldâ€driven startâ€up flow in a microfluidic channel. Electrophoresis, 2021, 42, 2465-2473.	1.3	2
100	THERMOHYDRODYNAMICS OF FERROFLUIDIC FLOW WITH PERIODIC PULSATION UNDER THE EFFECT OF STATIC AND ALTERNATING MAGNETIC FIELD-: A NUMERICAL STUDY. , 2018, , .		2
101	A New Analytical Approach to Predict the Operating Point of a Pumping System Having Groups of Different Types of Radial-Flow Pumps in Parallel and the Resulting Flow Division in the Piping Network. Journal of the Institution of Engineers (India): Series C, 2012, 93, 83-91.	0.7	1
102	Limiting thermal characteristics for flow of non-Newtonian fluids between asymmetrically heated parallel plates: An analytical study. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2019, 233, 880-892.	1.4	1
103	Internal Flow Dynamics of Ferrofluid Droplet Under the Influence of Magnetic Field. , 2019, , .		0
104	PROFESSOR SOMCHAI WONGWISES ON HIS 60TH BIRTHDAY. Journal of Thermal Engineering, 0, , 438-439.	0.8	0
105	Thermal Energy Management Strategy of the Photovoltaic Cell Using Ferromagnetohydrodynamics. Lecture Notes in Electrical Engineering, 2020, , 25-34.	0.3	0
106	Response to â€œComment on â€˜Bejan's flow visualization of buoyancy-driven flow of a hydromagnetic Casson fluid from an isothermal wavy surfaceâ€™â€•[Phys. Fluids 33, 129101 (2021)]. Physics of Fluids, 2021, 33, 129102.	1.6	0