

Shirsendu Mitra

List of Publications by Year in descending order

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Version: 2024-02-01

98
papers

1,747
citations

279487

23
h-index

344852

36
g-index

99
all docs

99
docs citations

99
times ranked

1333
citing authors

#	ARTICLE	IF	CITATIONS
1	The pH Taxis of an Intelligent Catalytic Microbot. <i>Small</i> , 2013, 9, 1916-1920.	5.2	102
2	Instability and Dynamics of Thin Liquid Bilayers. <i>Industrial & Engineering Chemistry Research</i> , 2005, 44, 1259-1272.	1.8	98
3	Nano-enabled paper humidity sensor for mobile based point-of-care lung function monitoring. <i>Biosensors and Bioelectronics</i> , 2017, 94, 544-551.	5.3	74
4	A comprehensive review on batteries and supercapacitors: Development and challenges since their inception. <i>Energy Storage</i> , 2023, 5, .	2.3	63
5	Paper-based α -amylase detector for point-of-care diagnostics. <i>Biosensors and Bioelectronics</i> , 2016, 78, 447-453.	5.3	60
6	Electric-Field-Induced Interfacial Instabilities and Morphologies of Thin Viscous and Elastic Bilayers. <i>Langmuir</i> , 2009, 25, 9108-9118.	1.6	54
7	Nonlinear instabilities and pathways of rupture in thin liquid bilayers. <i>Journal of Chemical Physics</i> , 2006, 125, 054711.	1.2	50
8	Multimodal chemo-magnetic control of self-propelling microbots. <i>Nanoscale</i> , 2014, 6, 1398-1405.	2.8	46
9	Magnetic Field Guided Chemotaxis of iMushbots for Targeted Anticancer Therapeutics. <i>ACS Biomaterials Science and Engineering</i> , 2017, 3, 1627-1640.	2.6	46
10	The flow of magnetic nanoparticles in magnetic drug targeting. <i>RSC Advances</i> , 2011, 1, 238.	1.7	44
11	Graphene based multifunctional superbots. <i>Carbon</i> , 2015, 89, 31-40.	5.4	44
12	Dynamics of deformation and pinch-off of a migrating compound droplet in a tube. <i>Physical Review E</i> , 2018, 97, 043112.	0.8	39
13	Dewetting of the Thin Liquid Bilayers on Topographically Patterned Substrates: Formation of Microchannel and Microdot Arrays. <i>Langmuir</i> , 2008, 24, 14048-14058.	1.6	36
14	Multiscale Pattern Generation in Viscoelastic Polymer Films by Spatiotemporal Modulation of Electric Field and Control of Rheology. <i>Advanced Functional Materials</i> , 2011, 21, 324-335.	7.8	36
15	Self-spinning nanoparticle laden microdroplets for sensing and energy harvesting. <i>Nanoscale</i> , 2016, 8, 6118-6128.	2.8	35
16	Electric field induced instabilities in thin confined bilayers. <i>Journal of Colloid and Interface Science</i> , 2007, 311, 595-608.	5.0	31
17	Point-of-care-testing of α -amylase activity in human blood serum. <i>Biosensors and Bioelectronics</i> , 2019, 124-125, 75-81.	5.3	31
18	Dewetting Pathways and Morphology of Unstable Thin Liquid Bilayers. <i>Journal of Physical Chemistry B</i> , 2008, 112, 11564-11572.	1.2	30

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19	Self-Organized Ordered Arrays of Core~Shell Columns in Viscous Bilayers Formed by Spatially Varying Electric Fields. <i>Journal of Physical Chemistry C</i> , 2010, 114, 21020-21028.	1.5	30
20	Microdroplet based disposable sensor patch for detection of $\hat{\pm}$ -amylase in human blood serum. <i>Biosensors and Bioelectronics</i> , 2020, 165, 112333.	5.3	30
21	Electric field mediated spraying of miniaturized droplets inside microchannel. <i>Electrophoresis</i> , 2017, 38, 1450-1457.	1.3	28
22	Surface instability of a thin electrolyte film undergoing coupled electroosmotic and electrophoretic flows in a microfluidic channel. <i>Electrophoresis</i> , 2011, 32, 3257-3267.	1.3	26
23	Discrete electric field mediated droplet splitting in microchannels: Fission, Cascade, and Rayleigh modes. <i>Electrophoresis</i> , 2017, 38, 278-286.	1.3	24
24	Instabilities and pattern miniaturization in confined and free elastic-viscous bilayers. <i>Journal of Chemical Physics</i> , 2008, 128, 154909.	1.2	23
25	Capillary force mediated flow patterns and non~monotonic pressure drop characteristics of oil~water microflows. <i>Canadian Journal of Chemical Engineering</i> , 2015, 93, 1736-1743.	0.9	23
26	Paper-Sensors for Point-of-Care Monitoring of Drinking Water Quality. <i>IEEE Sensors Journal</i> , 2019, 19, 7936-7941.	2.4	23
27	Instabilities in free-surface electroosmotic flows. <i>Theoretical and Computational Fluid Dynamics</i> , 2012, 26, 311-318.	0.9	22
28	Formation of liquid drops at an orifice and dynamics of pinch-off in liquid jets. <i>Physical Review E</i> , 2017, 96, 013115.	0.8	22
29	Dynamics of drop formation from submerged orifices under the influence of electric field. <i>Physics of Fluids</i> , 2018, 30, 122104.	1.6	20
30	Pattern-Directed Ordering of Spin-Dewetted Liquid Crystal Micro- or Nanodroplets as Pixelated Light Reflectors and Locomotives. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 1066-1076.	4.0	19
31	Paper Based Enzymatic Chemiresistor for POC Detection of Ethanol in Human Breath. <i>IEEE Sensors Journal</i> , 2020, 20, 2278-2286.	2.4	19
32	Magnetically Actuated Carbon Soot Nanoparticle-Based Catalytic CARBOts Coated with Ni/Pt Nanofilms for Water Detoxification and Oil-Spill Recovery. <i>ACS Applied Nano Materials</i> , 2020, 3, 3459-3470.	2.4	19
33	Electro-magnetic-field-induced flow and interfacial instabilities in confined stratified liquid layers. <i>Theoretical and Computational Fluid Dynamics</i> , 2012, 26, 23-28.	0.9	18
34	Electric-Field-Induced Instabilities in Thin Liquid Trilayers Confined between Patterned Electrodes. <i>Journal of Physical Chemistry C</i> , 2012, 116, 22847-22858.	1.5	16
35	From finite-amplitude equilibrium structures to dewetting in thin polymer films on chemically patterned substrates. <i>Soft Matter</i> , 2012, 8, 10394.	1.2	15
36	Localized electric field induced transition and miniaturization of two~phase flow patterns inside microchannels. <i>Electrophoresis</i> , 2014, 35, 2930-2937.	1.3	15

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37	Digitization of two-phase flow patterns in a microchannel induced by an external AC field. RSC Advances, 2015, 5, 29545-29551.	1.7	15
38	Electric field mediated squeezing to bending transitions of interfacial instabilities for digitization and mixing of two-phase microflows. Physics of Fluids, 2019, 31, .	1.6	15
39	Electric field mediated von Kármán vortices in stratified microflows: transition from linear instabilities to coherent mixing. Journal of Fluid Mechanics, 2019, 865, 169-211.	1.4	15
40	Microfluidic Immunosensor for Point-of-Care-Testing of Beta-2-Microglobulin in Tear. ACS Sustainable Chemistry and Engineering, 2020, 8, 9268-9276.	3.2	15
41	Self-Organized Large-Scale Integration of Mesoscale-Ordered Heterojunctions for Process-Intensified Photovoltaics. Physical Review Applied, 2018, 10, .	1.5	14
42	Unexplored Pathways To Charge Storage in Supercapacitors. Journal of Physical Chemistry C, 2019, 123, 195-204.	1.5	14
43	Electric field and van der Waals force induced instabilities in thin viscoelastic bilayers. Physics of Fluids, 2012, 24, .	1.6	13
44	Steady and Oscillatory Lorentz-Force-Induced Transport and Digitization of Two-Phase Microflows. Physical Review Applied, 2018, 10, .	1.5	13
45	Electroosmosis with Augmented Mixing in Rigid to Flexible Microchannels with Surface Patterns. Industrial & Engineering Chemistry Research, 2020, 59, 3717-3729.	1.8	13
46	Switching of interfacial instabilities from the liquid/air interface to the liquid/liquid interface in a polymer bilayer. Soft Matter, 2011, 7, 8056.	1.2	12
47	Field induced anomalous spreading, oscillation, ejection, spinning, and breaking of oil droplets on a strongly slipping water surface. Faraday Discussions, 2017, 199, 115-128.	1.6	12
48	Graphene oxide nanohybrids for electron transfer-mediated antimicrobial activity. Nanoscale Advances, 2019, 1, 3727-3740.	2.2	12
49	Influence of the mutable kinetic parameters on the adhesion and debonding of thin viscoelastic films. Journal of Colloid and Interface Science, 2016, 477, 109-122.	5.0	11
50	Microfluidic Electrolyzers for Production and Separation of Hydrogen from Sea Water using Naturally Abundant Solar Energy. Energy Technology, 2017, 5, 1208-1217.	1.8	11
51	Formic acid powered reusable autonomous ferobots for efficient hydrogen generation under ambient conditions. Journal of Materials Chemistry A, 2018, 6, 9209-9219.	5.2	11
52	Joint mass transfer of two components associated with the spontaneous interfacial convection in the liquid-liquid extraction system. Chemical Engineering Science, 2019, 195, 301-311.	1.9	11
53	Multimodal chemo-/magneto-/phototaxis of 3G CNT-bots to power fuel cells. Microsystems and Nanoengineering, 2020, 6, 19.	3.4	11
54	Long-wave interfacial instabilities in a thin electrolyte film undergoing coupled electrokinetic flows: a nonlinear analysis. Microfluidics and Nanofluidics, 2013, 15, 19-33.	1.0	10

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55	Micro-patterning of coatings on a fiber surface exploiting the contact instabilities of thin viscoelastic films. <i>Physics of Fluids</i> , 2018, 30, 114101.	1.6	10
56	Noninvasive Point-of-Care Nanobiosensing of Cervical Cancer as an Auxiliary to Pap-Smear Test. <i>ACS Applied Bio Materials</i> , 2021, 4, 5378-5390.	2.3	10
57	Oxygen Generation Using Catalytic Nano/Micromotors. <i>Micromachines</i> , 2021, 12, 1251.	1.4	10
58	Electrodynamic-contact-line-lithography with nematic liquid crystals for template-less E-writing of mesopatterns on soft surfaces. <i>Nanoscale</i> , 2019, 11, 16523-16533.	2.8	9
59	Magnetic field induced push-pull motility of liquibots. <i>RSC Advances</i> , 2016, 6, 107049-107056.	1.7	8
60	Acoustic Wave Catalyzed Urea Detection Utilizing a Pulsatile Microdroplet Sensor. <i>ACS Sustainable Chemistry and Engineering</i> , 0, , .	3.2	8
61	Dipolar Alignment in a Ferroelectric Dielectric Layer of FeFETs to Boost Charge Mobility and Nonvolatile Memory. <i>ACS Applied Electronic Materials</i> , 2020, 2, 3187-3198.	2.0	8
62	Paper-Based Sensors for Point-of-Care Kidney Function Monitoring. <i>IEEE Sensors Journal</i> , 2020, 20, 9644-9651.	2.4	8
63	Single and double toroid formation during oil droplet impact on an air-water interface at low Reynolds number. <i>Physics of Fluids</i> , 2022, 34, .	1.6	8
64	Efficient microextraction process exploiting spontaneous interfacial convection driven by Marangoni and electric field induced instability: A computational fluid dynamics study. <i>Physics of Fluids</i> , 2020, 32, .	1.6	7
65	Pattern-Directed Phase Transitions and VOC Sensing of Liquid Crystal Films. <i>Industrial & Engineering Chemistry Research</i> , 2020, 59, 1902-1913.	1.8	7
66	A coupled continuum-statistical model to predict interfacial deformation under an external field. <i>Journal of Colloid and Interface Science</i> , 2021, 587, 864-875.	5.0	7
67	Electric-field-mediated instability modes and Fréedericksz transition of thin nematic films. <i>Journal of Fluid Mechanics</i> , 2018, 834, 464-509.	1.4	6
68	Effects of Fluid-Structure-Interaction and Surface Heterogeneity on the Electrophoresis of Microparticles. <i>Industrial & Engineering Chemistry Research</i> , 2019, 58, 6756-6766.	1.8	6
69	Functional liquid droplets for analyte sensing and energy harvesting. <i>Advances in Colloid and Interface Science</i> , 2021, 294, 102453.	7.0	6
70	Hierarchical micro- and nanofabrication by pattern-directed contact instabilities of thin viscoelastic films. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	6
71	Carbon dots and Methylene blue facilitated photometric quantification of Hemoglobin. <i>Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy</i> , 2022, 271, 120906.	2.0	6
72	Pathways to community transmission of COVID-19 due to rapid evaporation of respiratory virulets. <i>Journal of Colloid and Interface Science</i> , 2022, 619, 229-245.	5.0	6

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73	Self-Organized Micropatterning of Thin Viscous Bilayers Under Microgravity. <i>Microgravity Science and Technology</i> , 2010, 22, 273-282.	0.7	5
74	Self-organized spreading of droplets to fluid toroids. <i>Journal of Colloid and Interface Science</i> , 2020, 578, 738-748.	5.0	5
75	Non-Enzymatic Urea Sensing Based on MWCNT Nanocomposite. <i>IEEE Sensors Journal</i> , 2021, 21, 18417-18424.	2.4	5
76	Multifunctional liquid marbles to stabilize and transport reactive fluids. <i>Soft Matter</i> , 2021, 17, 5084-5095.	1.2	5
77	Influence of the pre-impact shape of an oil droplet on the post-impact flow dynamics at air-water interface. <i>Soft Matter</i> , 2022, 18, 4102-4117.	1.2	5
78	Electro-capillary instabilities of thin leaky elastic-viscous bilayers. <i>Physics of Fluids</i> , 2014, 26, .	1.6	4
79	Pathways from disordered to ordered nanostructures from defect guided dewetting of ultrathin bilayers. <i>Journal of Colloid and Interface Science</i> , 2016, 465, 128-139.	5.0	4
80	Microdroplet photofuel cells to harvest high-density energy and dye degradation. <i>Nanoscale Advances</i> , 2020, 2, 1613-1624.	2.2	4
81	Giant Slip Induced Anomalous Dewetting of an Ultrathin Film on a Viscous Sublayer. <i>Scientific Reports</i> , 2017, 7, 14776.	1.6	3
82	Point-of-care stress detection of muscles using a flexible surface potential measurement prototype. <i>Medical Devices & Sensors</i> , 2019, 2, e10054.	2.7	3
83	Proton exchange membrane and bio-Fenton micro fuel cells for energy harvesting, gas leakage detection, and dye degradation. <i>RSC Advances</i> , 2021, 11, 12720-12728.	1.7	3
84	Genesis of electric field assisted microparticle assemblage in a dielectric fluid. <i>Journal of Fluid Mechanics</i> , 2021, 915, .	1.4	3
85	Self-organization of random copolymers to nanopatterns by localized e-beam dosing. <i>Nanotechnology</i> , 2021, 32, 285302.	1.3	3
86	A microfluidic viscometer: Translation of oscillatory motion of a water microdroplet in oil under electric field. <i>Electrophoresis</i> , 2021, 42, 2162-2170.	1.3	3
87	A computational study on osmotic chemotaxis of a reactive Janusbot. <i>Physics of Fluids</i> , 2020, 32, 112018.	1.6	3
88	Two Coexisting Modes in Field-Assisted AFM Nanopatterning of Thin Polymer Films. <i>Macromolecular Chemistry and Physics</i> , 2008, 209, 1358-1366.	1.1	2
89	Charge Leakage Mediated Pattern Miniaturization in the Electric Field Induced Instabilities of an Elastic Membrane. <i>Industrial & Engineering Chemistry Research</i> , 2014, 53, 18840-18851.	1.8	2
90	Multicomponent counter mass transfer in liquid-liquid extraction in presence of spontaneous interfacial convection. <i>Materials Today: Proceedings</i> , 2021, 46, 6304-6311.	0.9	2

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91	Electric-Discharge-Mediated Jetting, Crowning, Bursting, and Atomization of a Droplet. <i>Physical Review Applied</i> , 2021, 15, .	1.5	2
92	Physicochemical defect guided dewetting of ultrathin films to fabricate nanoscale patterns. <i>Nanotechnology</i> , 2021, 32, 195303.	1.3	2
93	Electric Field-Induced Bridging of a Droplet Twin. <i>Langmuir</i> , 2022, 38, 7146-7156.	1.6	2
94	Electric field assisted multicomponent reaction in a microfluidic reactor for superior conversion and yield. <i>Electrophoresis</i> , 2019, 40, 401-409.	1.3	1
95	Self-Organized Liquid Crystal Droplets as Phototunable Softmasks. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 60697-60712.	4.0	1
96	Instabilities of a free bilayer flowing on an inclined porous medium. <i>Physical Review E</i> , 2013, 88, 063012.	0.8	0
97	Paper Based Flexible Carbon-FET Devices by Embedding Si Nanoparticles in Graphite Channel. , 2017, , .		0
98	Pathologic evidence of retinoblastoma seeds supported by field emission scanning electron microscopy and Raman spectroscopy. <i>Indian Journal of Ophthalmology</i> , 2021, 69, 3612.	0.5	0