Sumita Pennathur

List of Publications by Year
in descending order

66	2,067	304602	233338
papers	citations	22 h-index	45 g-index

69	69	69	2172
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Electrokinetic Transport in Nanochannels. 1. Theory. Analytical Chemistry, 2005, 77, 6772-6781.	3.2	244
2	Nanofluidic technology for biomolecule applications: a critical review. Lab on A Chip, 2010, 10, 957.	3.1	214
3	Electrokinetic Transport in Nanochannels. 2. Experiments. Analytical Chemistry, 2005, 77, 6782-6789.	3.2	210
4	Energy conversion in microsystems: is there a role for micro/nanofluidics?. Lab on A Chip, 2007, 7, 1234.	3.1	165
5	Free-Solution Oligonucleotide Separation in Nanoscale Channels. Analytical Chemistry, 2007, 79, 8316-8322.	3.2	73
6	Distinct Conformations of DNA-Stabilized Fluorescent Silver Nanoclusters Revealed by Electrophoretic Mobility and Diffusivity Measurements. Langmuir, 2011, 27, 8923-8933.	1.6	64
7	Flow control in microfluidics: are the workhorse flows adequate?. Lab on A Chip, 2008, 8, 383.	3.1	58
8	Separation of Ions in Nanofluidic Channels with Combined Pressure-Driven and Electro-Osmotic Flow. Analytical Chemistry, 2013, 85, 2991-2998.	3.2	48
9	Quantitative Characterization of the Colloidal Stability of Metallic Nanoparticles Using UVâ€“vis Absorbance Spectroscopy. Langmuir, 2015, 31, 3577-3586.	1.6	47
10	Surface-dependent chemical equilibrium constants and capacitances for bare and 3-cyanopropyldimethylchlorosilane coated silica nanochannels. Journal of Colloid and Interface Science, 2011, 353, 301-310.	5.0	46
11	Efficiently accounting for ion correlations in electrokinetic nanofluidic devices using density functional theory. Journal of Colloid and Interface Science, 2011, 359, 520-529.	5.0	45
12	DNA-Stabilized Silver Nanoclusters as Specific, Ratiometric Fluorescent Dopamine Sensors. ACS Chemical Neuroscience, 2018, 9, 849-857.	1.7	44
13	Optofluidics: field or technique?. Lab on A Chip, 2008, 8, 1856.	3.1	43
14	Streaming current and wall dissolution over 48h in silica nanochannels. Journal of Colloid and Interface Science, 2011, 360, 262-271.	5.0	41
15	A universal design for a DNA probe providing ratiometric fluorescence detection by generation of silver nanoclusters. Nanoscale, 2016, 8, 14489-14496.	2.8	38
16	Simulation tools for lab on a chip research: advantages, challenges, and thoughts for the future. Lab on A Chip, 2008, 8, 1424.	3.1	36
17	Improving fluorescence detection in lab on chip devices. Lab on A Chip, 2008, 8, 649.	3.1	36
18	Multiphase flow in lab on chip devices: A real tool for the future?. Lab on A Chip, 2008, 8, 1010.	3.1	32

#	Article	IF	Citations
19	How to exploit the features of microfluidics technology. Lab on A Chip, 2008, 8, 20-22.	3.1	31
20	Hydronium-dominated ion transport in carbon-dioxide-saturated electrolytes at low salt concentrations in nanochannels. Physical Review E, 2011, 83, 056307.	0.8	27
21	Experimental study of the separation behavior of nanoparticles in micro- and nanochannels. Microfluidics and Nanofluidics, 2011, 10, 69-80.	1.0	26
22	Changes in Spectra and Conformation of Hairpin DNA-Stabilized Silver Nanoclusters Induced by Stem Sequence Perturbations. Langmuir, 2016, 32, 569-576.	1.6	23
23	Oligonucleotide hybridization and free-solution electrokinetic separation in a nanofluidic device. Lab on A Chip, 2009, 9, 2933.	3.1	21
24	An Experimental Approach to Systematically Probe Charge Inversion in Nanofluidic Channels. Nano Letters, 2018, 18, 1191-1195.	4.5	21
25	Molecular Design of a New Diboronic Acid for the Electrohydrodynamic Monitoring of Glucose. Angewandte Chemie - International Edition, 2019, 58, 10612-10615.	7.2	21
26	Field-amplified sample stacking and focusing in nanofluidic channels. Physics of Fluids, 2010, 22, .	1.6	18
27	Modeling Faradaic Reactions and Electrokinetic Phenomena at a Nanochannel-Confined Bipolar Electrode. Journal of Physical Chemistry C, 2019, 123, 5353-5364.	1.5	18
28	A repeatable and scalable fabrication method for sharp, hollow silicon microneedles. Journal of Micromechanics and Microengineering, 2018, 28, 035007.	1.5	17
29	Fluorescence-Based Observation of Transient Electrochemical and Electrokinetic Effects at Nanoconfined Bipolar Electrodes. ACS Applied Materials & Interfaces, 2019, 11, 13777-13786.	4.0	17
30	Electrophoretic mobility of a spherical nanoparticle in a nanochannel. Physics of Fluids, 2014, 26, 112002.	1.6	16
31	(Almost) Stationary Isotachophoretic Concentration Boundary in a Nanofluidic Channel Using Charge Inversion. Analytical Chemistry, 2016, 88, 6145-6150.	3.2	14
32	A simple microfluidic aggregation analyzer for the specific, sensitive and multiplexed quantification of proteins in a serum environment. Biosensors and Bioelectronics, 2016, 77, 1062-1069.	5.3	14
33	Electrokinetic characterization of individual nanoparticles in nanofluidic channels. Microfluidics and Nanofluidics, 2012, 12, 411-421.	1.0	12
34	Confinement effects on DNA hybridization in electrokinetic microâ€•and nanofluidic systems. Electrophoresis, 2019, 40, 792-798.	1.3	12
35	Analyte preconcentration in nanofluidic channels with nonuniform zeta potential. Physical Review Fluids, 2017, 2, .	1.0	11
36	Fluorescent silver nanocluster DNA probes for multiplexed detection using microfluidic capillary electrophoresis. Analyst, The, 2015, 140, 1609-1615.	1.7	10

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37	Separation behavior of short singleâ€•and doubleâ€stranded DNA in 1 micron and 100 nm glass channels. Electrophoresis, 2014, 35, 412-418.	1.3	9
38	Two-Dimensional Electric Double Layer Structure with Heterogeneous Surface Charge. Langmuir, 2017, 33, 5642-5651.	1.6	9
39	A model for inertial particles in curvilinear flows. Microfluidics and Nanofluidics, 2019, 23, 1.	1.0	9
40	A process to fabricate fused silica nanofluidic devices with embedded electrodes using an optimized room temperature bonding technique. Applied Physics Letters, 2017, 110, .	1.5	8
41	A novel fabrication method for centimeter-long surface-micromachined nanochannels. Journal of Micromechanics and Microengineering, 2010, 20, 015040.	1.5	7
42	Method to determine the effective Î¶ potential in a microchannel with an embedded gate electrode. Electrophoresis, 2011, 32, 3295-3304.	1.3	7
43	Numerical investigation of micro- and nanochannel deformation due to discontinuous electroosmotic flow. Microfluidics and Nanofluidics, 2016, 20, 1.	1.0	7
44	Discharging behavior of confined bipolar electrodes: Coupled electrokinetic and electrochemical dynamics. Electrochimica Acta, 2020, 330, 135275.	2.6	6
45	Inertial particle dynamics in the presence of a secondary flow. Physical Review Fluids, 2017, 2, .	1.0	6
46	Electrophoretic mobility of spherical particles in bounded domain. Journal of Colloid and Interface Science, 2016, 461, 32-38.	5.0	5
47	Energy Harvesting with a Liquid-Metal Microfluidic Influence Machine. Physical Review Applied, 2018, 9, .	1.5	5
48	Hybridization Thermodynamics of DNA Oligonucleotides during Microchip Capillary Electrophoresis. Analytical Chemistry, 2015, 87, 2811-2818.	3.2	4
49	Accounting for electric double layer and pressure gradient-induced dispersion effects in microfluidic current monitoring. Microfluidics and Nanofluidics, 2016, 20, 1.	1.0	4
50	Molecular Design of a New Diboronic Acid for the Electrohydrodynamic Monitoring of Glucose. Angewandte Chemie, 2019, 131, 10722-10725.	1.6	4
51	Electrocavitation in nanofluidics: unique phenomenon and fundamental platform. Lab on A Chip, 2015, 15, 3980-3983.	3.1	3
52	Optimal MEMS device for mobility and zeta potential measurements using DC electrophoresis. Electrophoresis, 2017, 38, 1245-1250.	1.3	3
53	A linearised model for calculating inertial forces on a particle in the presence of a permeate flow. Journal of Fluid Mechanics, 2019, 861, 253-274.	1.4	3
54	Real-Time Zeta Potential Analysis of Microchannel Surfaces during Aminosilane Deposition and Exposure Using Current Monitoring. Analytical Chemistry, 2021, 93, 16512-16519.	3.2	3

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55	Label free detection of nucleic acids by modulating nanochannel surfaces. Chemical Communications, 2015, 51, 2335-2338.	2.2	2
56	Olive oil density characterization through microfluidic detection using acoustic signatures (MIDAS). Analytical Methods, 2016, 8, 7673-7677.	1.3	2
57	Guest Editorial Special Section on IEEE EMBS Conference on Micro and Nanotechnology in Medicine. IEEE Transactions on Nanobioscience, 2019, 18, 214-215.	2.2	2
58	Low Temperature Fabrication and Surface Modification Methods for Fused Silica Micro- and Nanochannels. Materials Research Society Symposia Proceedings, 2014, 1659, 15-26.	0.1	1
59	Enhanced Ratiometric Detection using a Buried Dual Junction Diode for Wearable Optofluidic Biosensing Application. , 2019, , .		1
60	Predicting ion concentration polarization and analyte stacking/focusing at nanofluidic interfaces. Electrophoresis, 2022, , .	1.3	1
61	Electrophoresis in Nanochannels. , 2006, , 589.		0
62	The Measurement of Diffusion Coefficient Using Nanofluidic Channels. , 2007, , 957.		0
63	Nanofluidic carbon-dioxide sensor using nanoscale hydronium-dominated ion transport theory. , 2011, , .		0
64	Frequency-Response Models for Electroosmotic Actuators. , 2012, , .		0
65	Microfluidic detection with acoustic spectroscopy (MIDAS) for analysis of insulin formulation stability. Analytical Methods, 2017, 9, 6124-6130.	1.3	0
66	Integration of buried dual-junction photodetection with ratiometric FRET-based biosensing: Results and design considerations. Sensors and Actuators A: Physical, 2020, 315, 112364.	2.0	0