Xiangchun Xuan

List of Publications by Year
in descending order

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136 papers	6,313 citations	50170 46 h-index	79541 73 g-index
140 all docs	140 docs citations	140 times ranked	3996 citing authors

#	Article	IF	Citations
1	Review of nonlinear electrokinetic flows in insulatorâ€based dielectrophoresis: From induced charge to Joule heating effects. Electrophoresis, 2022, 43, 167-189.	1.3	26
2	Fluid rheological effects on streaming dielectrophoresis in a postâ€array microchannel. Electrophoresis, 2022, 43, 717-723.	1.3	3
3	Surfactant effects on microfluidic extensional flow of water and polymer solutions. Physics of Fluids, 2022, 34, .	1.6	4
4	Joule heating effects on electrokinetic flows with conductivity gradients. Electrophoresis, 2021, 42, 967-974.	1.3	11
5	Joule heatingâ€enabled electrothermal enrichment of nanoparticles in insulatorâ€based dielectrophoretic microdevices. Electrophoresis, 2021, 42, 626-634.	1.3	9
6	A depth-averaged model for Newtonian fluid flows in shallow microchannels. Physics of Fluids, 2021, 33, .	1.6	8
7	Constriction length dependent instabilities in the microfluidic entry flow of polymer solutions. Soft Matter, 2021, 17, 9198-9209.	1.2	9
8	Polymer effects on viscoelastic fluid flows in a planar constriction microchannel. Journal of Non-Newtonian Fluid Mechanics, 2021, 290, 104508.	1.0	15
9	AC Insulator-Based Dielectrophoretic Focusing of Particles and Cells in an â€œInfiniteâ€•Microchannel. Analytical Chemistry, 2021, 93, 5947-5953.	3.2	20
10	Insulatorâ€based dielectrophoretic focusing and trapping of particles in nonâ€Newtonian fluids. Electrophoresis, 2021, 42, 2154-2161.	1.3	15
11	Flow of Non-Newtonian Fluids in a Single-Cavity Microchannel. Micromachines, 2021, 12, 836.	1.4	11
12	Interplay of induced charge electroosmosis and electrothermal flow in insulator-based dielectrophoresis. Physical Review Fluids, 2021, 6, .	1.0	3
13	Elastic instabilities in the electroosmotic flow of nonâ€Newtonian fluids through Tâ€shaped microchannels. Electrophoresis, 2020, 41, 588-597.	1.3	14
14	Analytical Guidelines for Designing Curvature-Induced Dielectrophoretic Particle Manipulation Systems. Micromachines, 2020, 11, 707.	1.4	6
15	Vortex trapping and separation of particles in shear thinning fluids. Applied Physics Letters, 2020, 116, .	1.5	19
16	Editorial for the Special Issue on Micro/Nano-Chip Electrokinetics, Volume III. Micromachines, 2020, 11, 482.	1.4	1
17	Passive Dielectrophoretic Focusing of Particles and Cells in Ratchet Microchannels. Micromachines, 2020, 11, 451.	1.4	15
18	Fluid Rheological Effects on the Flow of Polymer Solutions in a Contractionâ€“Expansion Microchannel. Micromachines, 2020, 11, 278.	1.4	23

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19	Electrokinetically enhanced cross-stream particle migration in viscoelastic flows. Journal of Fluid Mechanics, 2020, 898, .	1.4	12
20	Revisit of wallâ€induced lateral migration in particle electrophoresis through a straight rectangular microchannel: Effects of particle zeta potential. Electrophoresis, 2019, 40, 955-960.	1.3	8
21	Electrokinetic instability in microchannel viscoelastic fluid flows with conductivity gradients. Physics of Fluids, 2019, 31, .	1.6	16
22	Particle separation in xanthan gum solutions. Microfluidics and Nanofluidics, 2019, 23, 1.	1.0	12
23	Recent Advances in Continuous-Flow Particle Manipulations Using Magnetic Fluids. Micromachines, 2019, 10, 744.	1.4	38
24	Experimental study of particle electrophoresis in shear-thinning fluids. Physics of Fluids, 2019, 31, .	1.6	15
25	The motion of rigid particles in the Poiseuille flow of pseudoplastic fluids through straight rectangular microchannels. Microfluidics and Nanofluidics, 2019, 23, 1.	1.0	14
26	Recent advances in direct current electrokinetic manipulation of particles for microfluidic applications. Electrophoresis, 2019, 40, 2484-2513.	1.3	88
27	A chemoenzymatic approach enables the siteâ€specific conjugation of recombinant proteins. Electrophoresis, 2019, 40, 2125-2128.	1.3	0
28	Electroosmotic flow of nonâ€Newtonian fluids in a constriction microchannel. Electrophoresis, 2019, 40, 1387-1394.	1.3	40
29	Continuous sheathâ€free separation of drugâ€treated human fungal pathogen Cryptococcus neoformans by morphology in biocompatible polymer solutions. Electrophoresis, 2018, 39, 2362-2369.	1.3	13
30	Fluid rheological effects on particle migration in a straight rectangular microchannel. Microfluidics and Nanofluidics, 2018, 22, 1.	1.0	25
31	Electrothermal enrichment of submicron particles in an insulatorâ€based dielectrophoretic microdevice. Electrophoresis, 2018, 39, 887-896.	1.3	31
32	Electrokinetic instabilities in co-flowing ferrofluid and buffer solutions with matched electric conductivities. Microfluidics and Nanofluidics, 2018, 22, 1.	1.0	6
33	Editorial for the Special Issue on Micro/Nano-Chip Electrokinetics, Volume II. Micromachines, 2018, 9, 383.	1.4	0
34	Three-Dimensional Reservoir-Based Dielectrophoresis (rDEP) for Enhanced Particle Enrichment. Micromachines, 2018, 9, 123.	1.4	24
35	Tunable, Sheathless Focusing of Diamagnetic Particles in Ferrofluid Microflows with a Single Set of Overhead Permanent Magnets. Analytical Chemistry, 2018, 90, 8600-8606.	3.2	30
36	Electrophoretic slip-tuned particle migration in microchannel viscoelastic fluid flows. Physical Review Fluids, 2018, 3, .	1.0	28

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37	Inertially focused diamagnetic particle separation in ferrofluids. Microfluidics and Nanofluidics, 2017, 21, 1.	1.0	22
38	Electrokinetic instability in microchannel ferrofluid/water co-flows. Scientific Reports, 2017, 7, 46510.	1.6	19
39	Induced charge effects on electrokinetic entry flow. Physics of Fluids, 2017, 29, .	1.6	35
40	Simultaneous Separation and Washing of Nonmagnetic Particles in an Inertial Ferrofluid/Water Coflow. Analytical Chemistry, 2017, 89, 6915-6920.	3.2	40
41	Particle manipulations in non-Newtonian microfluidics: A review. Journal of Colloid and Interface Science, 2017, 500, 182-201.	5.0	214
42	Surface-conduction enhanced dielectrophoretic-like particle migration in electric-field driven fluid flow through a straight rectangular microchannel. Physics of Fluids, 2017, 29, .	1.6	15
43	Yeast cell fractionation by morphology in dilute ferrofluids. Biomicrofluidics, 2017, 11, 064102.	1.2	20
44	Joule heating effects on electroosmotic entry flow. Electrophoresis, 2017, 38, 572-579.	1.3	41
45	Chargeâ€based separation of particles and cells with similar sizes via the wallâ€induced electrical lift. Electrophoresis, 2017, 38, 320-326.	1.3	10
46	Editorial for the Special Issue on Micro/Nano-Chip Electrokinetics. Micromachines, 2017, 8, 145.	1.4	2
47	Enhanced Throughput for Electrokinetic Manipulation of Particles and Cells in a Stacked Microfluidic Device. Micromachines, 2016, 7, 156.	1.4	6
48	Diamagnetic particle separation by shape in ferrofluids. Applied Physics Letters, 2016, 109, .	1.5	41
49	Sheathless electrokinetic particle separation in a bifurcating microchannel. Biomicrofluidics, 2016, 10, 054104.	1.2	15
50	Continuous-flow sheathless diamagnetic particle separation in ferrofluids. Journal of Magnetism and Magnetic Materials, 2016, 412, 114-122.	1.0	13
51	Viscoelastic Separation of Particles by Size in Straight Rectangular Microchannels: A Parametric Study for a Refined Understanding. Analytical Chemistry, 2016, 88, 12303-12309.	3.2	60
52	Ultra-deep tyrosine phosphoproteomics enabled by a phosphotyrosine superbinder. Nature Chemical Biology, 2016, 12, 959-966.	3.9	141
53	Continuous sheath-free separation of particles by shape in viscoelastic fluids. Applied Physics Letters, 2015, 107, .	1.5	58
54	Electrokinetic preconcentration of particles and cells in microfluidic reservoirs. Analyst, The, 2015, 140, 2869-2875.	1.7	33

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55	Continuous Microfluidic Particle Separation via Elasto-Inertial Pinched Flow Fractionation. Analytical Chemistry, 2015, 87, 6389-6396.	3.2	95
56	Exploiting the Wall-Induced Non-inertial Lift in Electrokinetic Flow for a Continuous Particle Separation by Size. Langmuir, 2015, 31, 620-627.	1.6	24
57	Viscoelastic effects on electrokinetic particle focusing in a constricted microchannel. Biomicrofluidics, 2015, 9, 014108.	1.2	24
58	Electric field-induced instabilities in ferrofluid microflows. Microfluidics and Nanofluidics, 2015, 19, 43-52.	1.0	20
59	Inertia-Enhanced Pinched Flow Fractionation. Analytical Chemistry, 2015, 87, 4560-4565.	3.2	51
60	Elasto-Inertial Pinched Flow Fractionation for Continuous Shape-Based Particle Separation. Analytical Chemistry, 2015, 87, 11523-11530.	3.2	76
61	Specific Enrichment of Peptides with N-Terminal Serine/Threonine by a Solid-Phase Capture-Release Approach for Efficient Proteomics Analysis. Analytical Chemistry, 2015, 87, 11353-11360.	3.2	12
62	Simultaneous diamagnetic and magnetic particle trapping in ferrofluid microflows via a single permanent magnet. Biomicrofluidics, 2015, 9, 044102.	1.2	32
63	Reservoir-Based Dielectrophoresis. , 2015, , 2922-2928.		1
64	10.1063/1.4906798.1. , 2015, , .		0
65	Microfluidic electrical sorting of particles based on shape in a spiral microchannel. Biomicrofluidics, 2014, 8, 014101.	1.2	34
66	An unexpected particle oscillation for electrophoresis in viscoelastic fluids through a microchannel constriction. Biomicrofluidics, 2014, 8, 021802.	1.2	33
67	Exploiting magnetic asymmetry to concentrate diamagnetic particles in ferrofluid microflows. Journal of Applied Physics, 2014, 115, 044907.	1.1	28
68	Joule heating effects on reservoirâ€based dielectrophoresis. Electrophoresis, 2014, 35, 721-727.	1.3	36
69	Electrokinetic particle separation in a single-spiral microchannel. Journal of Micromechanics and Microengineering, 2014, 24, 115018.	1.5	13
70	Magnetic concentration of particles and cells in ferrofluid flow through a straight microchannel using attracting magnets. Microfluidics and Nanofluidics, 2013, 15, 49-55.	1.0	48
71	Magnetic separation of particles and cells in ferrofluid flow through a straight microchannel using two offset magnets. Journal of Magnetism and Magnetic Materials, 2013, 346, 118-123.	1.0	109
72	Robust phosphoproteome enrichment using monodisperse microsphereâ€“based immobilized titanium (IV) ion affinity chromatography. Nature Protocols, 2013, 8, 461-480.	5.5	340

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73	Reservoirâ€based dielectrophoresis for microfluidic particle separation by charge. Electrophoresis, 2013, 34, 961-968.	1.3	29
74	Enhanced separation of magnetic and diamagnetic particles in a dilute ferrofluid. Applied Physics Letters, 2013, 102, .	1.5	60
75	Numerical modeling of <scp>J</scp>oule heating effects in insulatorâ€based dielectrophoresis microdevices. Electrophoresis, 2013, 34, 674-683.	1.3	45
76	Reservoir-Based Dielectrophoresis. , 2013, , 1-7.		0
77	Joule Heating in Electrokinetic Flow: Theoretical Models. , 2013, , 1-14.		0
78	Continuous sheath-free magnetic separation of particles in a U-shaped microchannel. Biomicrofluidics, 2012, 6, 44106.	1.2	40
79	Diamagnetic particle focusing using ferromicrofluidics with a single magnet. Microfluidics and Nanofluidics, 2012, 13, 637-643.	1.0	62
80	Microfluidic separation of live and dead yeast cells using reservoir-based dielectrophoresis. Biomicrofluidics, 2012, 6, 34102.	1.2	111
81	Three-dimensional magnetic focusing of particles and cells in ferrofluid flow through a straight microchannel. Journal of Micromechanics and Microengineering, 2012, 22, 105018.	1.5	45
82	Joule heating effects on electrokinetic focusing and trapping of particles in constriction microchannels. Journal of Micromechanics and Microengineering, 2012, 22, 075011.	1.5	22
83	Electrokinetic particle entry into microchannels. Electrophoresis, 2012, 33, 916-922.	1.3	20
84	On-chip manipulation of nonmagnetic particles in paramagnetic solutions using embedded permanent magnets. Microfluidics and Nanofluidics, 2012, 12, 65-73.	1.0	55
85	Continuous-flow particle and cell separations in a serpentine microchannel via curvature-induced dielectrophoresis. Microfluidics and Nanofluidics, 2011, 11, 743-752.	1.0	55
86	Negative dielectrophoresisâ€based particle separation by size in a serpentine microchannel. Electrophoresis, 2011, 32, 527-531.	1.3	34
87	Joule heating effects on electroosmotic flow in insulatorâ€based dielectrophoresis. Electrophoresis, 2011, 32, 2274-2281.	1.3	86
88	Curvature-induced dielectrophoresis for continuous separation of particles by charge in spiral microchannels. Biomicrofluidics, 2011, 5, 024111.	1.2	55
89	Three-dimensional diamagnetic particle deflection in ferrofluid microchannel flows. Biomicrofluidics, 2011, 5, 34110-3411013.	1.2	55
90	DC Electrokinetic Particle Transport in an L-Shaped Microchannel. Langmuir, 2010, 26, 2937-2944.	1.6	74

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91	Particle focusing in microfluidic devices. Microfluidics and Nanofluidics, 2010, 9, 1-16.	1.0	318
92	Continuous dielectrophoretic separation of particles in a spiral microchannel. Electrophoresis, 2010, 31, 1382-1388.	1.3	72
93	Wall-induced lateral migration in particle electrophoresis through a rectangular microchannel. Journal of Colloid and Interface Science, 2010, 347, 142-146.	5.0	74
94	Three-dimensional electrokinetic particle focusing in a rectangular microchannel. Journal of Colloid and Interface Science, 2010, 350, 377-379.	5.0	41
95	Continuous particle separation in a serpentine microchannel via negative and positive dielectrophoretic focusing. Journal of Micromechanics and Microengineering, 2010, 20, 065011.	1.5	46
96	Integrated electrical concentration and lysis of cells in a microfluidic chip. Biomicrofluidics, 2010, 4, 044101.	1.2	38
97	Distinguishing the viability of a single yeast cell with an ultra-sensitive radio frequency sensor. Lab on A Chip, 2010, 10, 553.	3.1	94
98	Electrokinetic focusing and filtration of cells in a serpentine microchannel. Biomicrofluidics, 2009, 3, 44109.	1.2	69
99	Transient electrophoretic motion of a charged particle through a convergingâ€“diverging microchannel: Effect of direct currentâ€dielectrophoretic force. Electrophoresis, 2009, 30, 2499-2506.	1.3	66
100	Dielectrophoretic focusing of particles in a microchannel constriction using DCâ€biased AC flectric fields. Electrophoresis, 2009, 30, 2668-2675.	1.3	112
101	DC dielectrophoretic focusing of particles in a serpentine microchannel. Microfluidics and Nanofluidics, 2009, 7, 751-756.	1.0	94
102	Particle electrophoresis and dielectrophoresis in curved microchannels. Journal of Colloid and Interface Science, 2009, 340, 285-290.	5.0	73
103	Streaming potential and electroviscous effect in heterogeneous microchannels. Microfluidics and Nanofluidics, 2008, 4, 457-462.	1.0	16
104	Flow rate-modified streaming effects in heterogeneous microchannels. Microfluidics and Nanofluidics, 2008, 5, 733-740.	1.0	11
105	Joule heating in electrokinetic flow. Electrophoresis, 2008, 29, 33-43.	1.3	129
106	Effects of Stern layer conductance on electrokinetic energy conversion in nanofluidic channels. Electrophoresis, 2008, 29, 1125-1130.	1.3	69
107	Ion separation in nanofluidics. Electrophoresis, 2008, 29, 3737-3743.	1.3	28
108	Electrokinetic energy conversion in slip nanochannels. Journal of Power Sources, 2008, 179, 297-300.	4.0	110

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109	Solute transport and separation in nanochannel chromatography. Journal of Chromatography A, 2008, 1187, 289-292.	1.8	7
110	Solute separation in nanofluidic channels: Pressure-driven or electric field-driven?. Electrophoresis, 2007, 28, 627-634.	1.3	35
111	Revisit of Joule heating in CE: The contribution of surface conductance. Electrophoresis, 2007, 28, 2971-2974.	1.3	3
112	Electroosmotic flow in microchannels with prismatic elements. Microfluidics and Nanofluidics, 2007, 3, 151-160.	1.0	23
113	Hydrodynamic dispersion of neutral solutes in nanochannels: the effect of streaming potential. Microfluidics and Nanofluidics, 2007, 3, 723-728.	1.0	20
114	DC-dielectrophoretic separation of microparticles using an oil droplet obstacle. Lab on A Chip, 2006, 6, 274-279.	3.1	97
115	Effects of dc-dielectrophoretic force on particle trajectories in microchannels. Journal of Applied Physics, 2006, 99, 064702.	1.1	104
116	Thermodynamic analysis of electrokinetic energy conversion. Journal of Power Sources, 2006, 156, 677-684.	4.0	82
117	Wall effects on electrophoretic motion of spherical polystyrene particles in a rectangular poly(dimethylsiloxane) microchannel. Journal of Colloid and Interface Science, 2006, 296, 743-748.	5.0	56
118	Experimental characterization of the temperature dependence of zeta potential and its effect on electroosmotic flow velocity in microchannels. Microfluidics and Nanofluidics, 2006, 2, 493-499.	1.0	70
119	Continuous separation of microparticles by size with Direct current-dielectrophoresis. Electrophoresis, 2006, 27, 694-702.	1.3	181
120	Joule heating effects on separation efficiency in capillary zone electrophoresis with an initial voltage ramp. Electrophoresis, 2006, 27, 3171-3180.	1.3	20
121	Electrokinetic transport of charged solutes in micro- and nanochannels: The influence of transverse electromigration. Electrophoresis, 2006, 27, 5020-5031.	1.3	26
122	Electrokinetic flow in a free surface-guided microchannel. Journal of Applied Physics, 2006, 99, 054905.	1.1	39
123	Electroosmotic flow in microchannels with arbitrary geometry and arbitrary distribution of wall charge. Journal of Colloid and Interface Science, 2005, 289, 291-303.	5.0	101
124	Analytical study of Joule heating effects on electrokinetic transportation in capillary electrophoresis. Journal of Chromatography A, 2005, 1064, 227-237.	1.8	67
125	Near-wall electrophoretic motion of spherical particles in cylindrical capillaries. Journal of Colloid and Interface Science, 2005, 289, 286-290.	5.0	38
126	Band-broadening in capillary zone electrophoresis with axial temperature gradients. Electrophoresis, 2005, 26, 166-175.	1.3	46

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127	Focused electrophoretic motion and selected electrokinetic dispensing of particles and cells in cross-microchannels. Electrophoresis, 2005, 26, 3552-3560.	1.3	63
128	Eccentric electrophoretic motion of a sphere in circular cylindrical microchannels. Microfluidics and Nanofluidics, 2005, 1, 234-241.	1.0	50
129	Multiâ€Functional Particle Detection with Embedded Optical Fibers in a Poly(dimethylsiloxane) Chip. Instrumentation Science and Technology, 2005, 33, 597-607.	0.9	18
130	Accelerated Particle Electrophoretic Motion and Separation in Convergingâ^'Diverging Microchannels. Analytical Chemistry, 2005, 77, 4323-4328.	3.2	46
131	Joule heating effects on peak broadening in capillary zone electrophoresis. Journal of Micromechanics and Microengineering, 2004, 14, 1171-1180.	1.5	68
132	Thermally induced velocity gradients in electroosmotic microchannel flows: the cooling influence of optical infrastructure. Experiments in Fluids, 2004, 37, 872-882.	1.1	32
133	Thermal end effects on electroosmotic flow in a capillary. International Journal of Heat and Mass Transfer, 2004, 47, 3145-3157.	2.5	101
134	Electroosmotic flow with Joule heating effects. Lab on A Chip, 2004, 4, 230.	3.1	157
135	Analysis of electrokinetic flow in microfluidic networks. Journal of Micromechanics and Microengineering, 2004, 14, 290-298.	1.5	63
136	Effects of liquid conductivity differences on multi-component sample injection, pumping and stacking in microfluidic chips. Lab on A Chip, 2003, 3, 173.	3.1	18