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	Robust phosphoproteome enrichment using monodisperse microsphereâ€“based immobilized titanium (IV) ion affinity chromatography. Nature Protocols, 2013, 8, 461-480.	5.5	340
2	Particle focusing in microfluidic devices. Microfluidics and Nanofluidics, 2010, 9, 1-16.	1.0	318
3	Particle manipulations in non-Newtonian microfluidics: A review. Journal of Colloid and Interface Science, 2017, 500, 182-201.	5.0	214
4	Continuous separation of microparticles by size with Direct current-dielectrophoresis. Electrophoresis, 2006, 27, 694-702.	1.3	181
5	Electroosmotic flow with Joule heating effects. Lab on A Chip, 2004, 4, 230.	3.1	157
6	Ultra-deep tyrosine phosphoproteomics enabled by a phosphotyrosine superbinder. Nature Chemical Biology, 2016, 12, 959-966.	3.9	141
7	Joule heating in electrokinetic flow. Electrophoresis, 2008, 29, 33-43.	1.3	129
8	Dielectrophoretic focusing of particles in a microchannel constriction using DCâ€biased AC flectric fields. Electrophoresis, 2009, 30, 2668-2675.	1.3	112
9	Microfluidic separation of live and dead yeast cells using reservoir-based dielectrophoresis. Biomicrofluidics, 2012, 6, 34102.	1.2	111
10	Electrokinetic energy conversion in slip nanochannels. Journal of Power Sources, 2008, 179, 297-300.	4.0	110
11	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
12	Effects of dc-dielectrophoretic force on particle trajectories in microchannels. Journal of Applied Physics, 2006, 99, 064702.	1.1	104
13	Thermal end effects on electroosmotic flow in a capillary. International Journal of Heat and Mass Transfer, 2004, 47, 3145-3157.	2.5	101
14	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
15	DC-dielectrophoretic separation of microparticles using an oil droplet obstacle. Lab on A Chip, 2006, 6, 274-279.	3.1	97
16	Continuous Microfluidic Particle Separation via Elasto-Inertial Pinched Flow Fractionation. Analytical Chemistry, 2015, 87, 6389-6396.	3.2	95
17	DC dielectrophoretic focusing of particles in a serpentine microchannel. Microfluidics and Nanofluidics, 2009, 7, 751-756.	1.0	94
18	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

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19	Recent advances in direct current electrokinetic manipulation of particles for microfluidic applications. Electrophoresis, 2019, 40, 2484-2513.	1.3	88
20	Joule heating effects on electroosmotic flow in insulatorâ€based dielectrophoresis. Electrophoresis, 2011, 32, 2274-2281.	1.3	86
21	Thermodynamic analysis of electrokinetic energy conversion. Journal of Power Sources, 2006, 156, 677-684.	4.0	82
22	Elasto-Inertial Pinched Flow Fractionation for Continuous Shape-Based Particle Separation. Analytical Chemistry, 2015, 87, 11523-11530.	3.2	76
23	DC Electrokinetic Particle Transport in an L-Shaped Microchannel. Langmuir, 2010, 26, 2937-2944.	1.6	74
24	Wall-induced lateral migration in particle electrophoresis through a rectangular microchannel. Journal of Colloid and Interface Science, 2010, 347, 142-146.	5.0	74
25	Particle electrophoresis and dielectrophoresis in curved microchannels. Journal of Colloid and Interface Science, 2009, 340, 285-290.	5.0	73
26	Continuous dielectrophoretic separation of particles in a spiral microchannel. Electrophoresis, 2010, 31, 1382-1388.	1.3	72
27	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
28	Effects of Stern layer conductance on electrokinetic energy conversion in nanofluidic channels. Electrophoresis, 2008, 29, 1125-1130.	1.3	69
29	Electrokinetic focusing and filtration of cells in a serpentine microchannel. Biomicrofluidics, 2009, 3, 44109.	1.2	69
30	Joule heating effects on peak broadening in capillary zone electrophoresis. Journal of Micromechanics and Microengineering, 2004, 14, 1171-1180.	1.5	68
31	Analytical study of Joule heating effects on electrokinetic transportation in capillary electrophoresis. Journal of Chromatography A, 2005, 1064, 227-237.	1.8	67
32	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
33	Analysis of electrokinetic flow in microfluidic networks. Journal of Micromechanics and Microengineering, 2004, 14, 290-298.	1.5	63
34	Focused electrophoretic motion and selected electrokinetic dispensing of particles and cells in cross-microchannels. Electrophoresis, 2005, 26, 3552-3560.	1.3	63
35	Diamagnetic particle focusing using ferromicrofluidics with a single magnet. Microfluidics and Nanofluidics, 2012, 13, 637-643.	1.0	62
36	Enhanced separation of magnetic and diamagnetic particles in a dilute ferrofluid. Applied Physics Letters, 2013, 102, .	1.5	60

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37	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
38	Continuous sheath-free separation of particles by shape in viscoelastic fluids. Applied Physics Letters, 2015, 107, .	1.5	58
39	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
40	Continuous-flow particle and cell separations in a serpentine microchannel via curvature-induced dielectrophoresis. Microfluidics and Nanofluidics, 2011, 11, 743-752.	1.0	55
41	Curvature-induced dielectrophoresis for continuous separation of particles by charge in spiral microchannels. Biomicrofluidics, 2011, 5, 024111.	1.2	55
42	Three-dimensional diamagnetic particle deflection in ferrofluid microchannel flows. Biomicrofluidics, 2011, 5, 34110-3411013.	1.2	55
43	On-chip manipulation of nonmagnetic particles in paramagnetic solutions using embedded permanent magnets. Microfluidics and Nanofluidics, 2012, 12, 65-73.	1.0	55
44	Inertia-Enhanced Pinched Flow Fractionation. Analytical Chemistry, 2015, 87, 4560-4565.	3.2	51
45	Eccentric electrophoretic motion of a sphere in circular cylindrical microchannels. Microfluidics and Nanofluidics, 2005, 1, 234-241.	1.0	50
46	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
47	Band-broadening in capillary zone electrophoresis with axial temperature gradients. Electrophoresis, 2005, 26, 166-175.	1.3	46
48	Accelerated Particle Electrophoretic Motion and Separation in Convergingâ˜Diverging Microchannels. Analytical Chemistry, 2005, 77, 4323-4328.	3.2	46
49	Continuous particle separation in a serpentine microchannel via negative and positive dielectrophoretic focusing. Journal of Micromechanics and Microengineering, 2010, 20, 065011.	1.5	46
50	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
51	Numerical modeling of <scp>J</scp>oule heating effects in insulatorâ€based dielectrophoresis microdevices. Electrophoresis, 2013, 34, 674-683.	1.3	45
52	Three-dimensional electrokinetic particle focusing in a rectangular microchannel. Journal of Colloid and Interface Science, 2010, 350, 377-379.	5.0	41
53	Diamagnetic particle separation by shape in ferrofluids. Applied Physics Letters, 2016, 109, .	1.5	41
54	Joule heating effects on electroosmotic entry flow. Electrophoresis, 2017, 38, 572-579.	1.3	41

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55	Continuous sheath-free magnetic separation of particles in a U-shaped microchannel. Biomicrofluidics, 2012, 6, 44106.	1.2	40
56	Simultaneous Separation and Washing of Nonmagnetic Particles in an Inertial Ferrofluid/Water Coflow. Analytical Chemistry, 2017, 89, 6915-6920.	3.2	40
57	Electroosmotic flow of nonâ€Newtonian fluids in a constriction microchannel. Electrophoresis, 2019, 40, 1387-1394.	1.3	40
58	Electrokinetic flow in a free surface-guided microchannel. Journal of Applied Physics, 2006, 99, 054905.	1.1	39
59	Near-wall electrophoretic motion of spherical particles in cylindrical capillaries. Journal of Colloid and Interface Science, 2005, 289, 286-290.	5.0	38
60	Integrated electrical concentration and lysis of cells in a microfluidic chip. Biomicrofluidics, 2010, 4, 044101.	1.2	38
61	Recent Advances in Continuous-Flow Particle Manipulations Using Magnetic Fluids. Micromachines, 2019, 10, 744.	1.4	38
62	Joule heating effects on reservoirâ€based dielectrophoresis. Electrophoresis, 2014, 35, 721-727.	1.3	36
63	Solute separation in nanofluidic channels: Pressure-driven or electric field-driven?. Electrophoresis, 2007, 28, 627-634.	1.3	35
64	Induced charge effects on electrokinetic entry flow. Physics of Fluids, 2017, 29, .	1.6	35
65	Negative dielectrophoresisâ€based particle separation by size in a serpentine microchannel. Electrophoresis, 2011, 32, 527-531.	1.3	34
66	Microfluidic electrical sorting of particles based on shape in a spiral microchannel. Biomicrofluidics, 2014, 8, 014101.	1.2	34
67	An unexpected particle oscillation for electrophoresis in viscoelastic fluids through a microchannel constriction. Biomicrofluidics, 2014, 8, 021802.	1.2	33
68	Electrokinetic preconcentration of particles and cells in microfluidic reservoirs. Analyst, The, 2015, 140, 2869-2875.	1.7	33
69	Thermally induced velocity gradients in electroosmotic microchannel flows: the cooling influence of optical infrastructure. Experiments in Fluids, 2004, 37, 872-882.	1.1	32
70	Simultaneous diamagnetic and magnetic particle trapping in ferrofluid microflows via a single permanent magnet. Biomicrofluidics, 2015, 9, 044102.	1.2	32
71	Electrothermal enrichment of submicron particles in an insulatorâ€based dielectrophoretic microdevice. Electrophoresis, 2018, 39, 887-896.	1.3	31
72	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

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73	Reservoirâ€based dielectrophoresis for microfluidic particle separation by charge. Electrophoresis, 2013, 34, 961-968.	1.3	29
74	Ion separation in nanofluidics. Electrophoresis, 2008, 29, 3737-3743.	1.3	28
75	Exploiting magnetic asymmetry to concentrate diamagnetic particles in ferrofluid microflows. Journal of Applied Physics, 2014, 115, 044907.	1.1	28
76	Electrophoretic slip-tuned particle migration in microchannel viscoelastic fluid flows. Physical Review Fluids, 2018, 3, .	1.0	28
77	Electrokinetic transport of charged solutes in micro- and nanochannels: The influence of transverse electromigration. Electrophoresis, 2006, 27, 5020-5031.	1.3	26
78	Review of nonlinear electrokinetic flows in insulatorâ€based dielectrophoresis: From induced charge to Joule heating effects. Electrophoresis, 2022, 43, 167-189.	1.3	26
79	Fluid rheological effects on particle migration in a straight rectangular microchannel. Microfluidics and Nanofluidics, 2018, 22, 1.	1.0	25
80	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
81	Viscoelastic effects on electrokinetic particle focusing in a constricted microchannel. Biomicrofluidics, 2015, 9, 014108.	1.2	24
82	Three-Dimensional Reservoir-Based Dielectrophoresis (rDEP) for Enhanced Particle Enrichment. Micromachines, 2018, 9, 123.	1.4	24
83	Electroosmotic flow in microchannels with prismatic elements. Microfluidics and Nanofluidics, 2007, 3, 151-160.	1.0	23
84	Fluid Rheological Effects on the Flow of Polymer Solutions in a Contractionâ€“Expansion Microchannel. Micromachines, 2020, 11, 278.	1.4	23
85	Joule heating effects on electrokinetic focusing and trapping of particles in constriction microchannels. Journal of Micromechanics and Microengineering, 2012, 22, 075011.	1.5	22
86	Inertially focused diamagnetic particle separation in ferrofluids. Microfluidics and Nanofluidics, 2017, 21, 1.	1.0	22
87	Joule heating effects on separation efficiency in capillary zone electrophoresis with an initial voltage ramp. Electrophoresis, 2006, 27, 3171-3180.	1.3	20
88	Hydrodynamic dispersion of neutral solutes in nanochannels: the effect of streaming potential. Microfluidics and Nanofluidics, 2007, 3, 723-728.	1.0	20
89	Electrokinetic particle entry into microchannels. Electrophoresis, 2012, 33, 916-922.	1.3	20
90	Electric field-induced instabilities in ferrofluid microflows. Microfluidics and Nanofluidics, 2015, 19, 43-52.	1.0	20

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91	Yeast cell fractionation by morphology in dilute ferrofluids. Biomicrofluidics, 2017, 11, 064102.	1.2	20
92	AC Insulator-Based Dielectrophoretic Focusing of Particles and Cells in an â€œInfiniteâ€•Microchannel. Analytical Chemistry, 2021, 93, 5947-5953.	3.2	20
93	Electrokinetic instability in microchannel ferrofluid/water co-flows. Scientific Reports, 2017, 7, 46510.	1.6	19
94	Vortex trapping and separation of particles in shear thinning fluids. Applied Physics Letters, 2020, 116, .	1.5	19
95	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
96	Multiâ€Functional Particle Detection with Embedded Optical Fibers in a Poly(dimethylsiloxane) Chip. Instrumentation Science and Technology, 2005, 33, 597-607.	0.9	18
97	Streaming potential and electroviscous effect in heterogeneous microchannels. Microfluidics and Nanofluidics, 2008, 4, 457-462.	1.0	16
98	Electrokinetic instability in microchannel viscoelastic fluid flows with conductivity gradients. Physics of Fluids, 2019, 31, .	1.6	16
99	Sheathless electrokinetic particle separation in a bifurcating microchannel. Biomicrofluidics, 2016, 10, 054104.	1.2	15
100	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
101	Experimental study of particle electrophoresis in shear-thinning fluids. Physics of Fluids, 2019, 31, .	1.6	15
102	Passive Dielectrophoretic Focusing of Particles and Cells in Ratchet Microchannels. Micromachines, 2020, 11, 451.	1.4	15
103	Polymer effects on viscoelastic fluid flows in a planar constriction microchannel. Journal of Non-Newtonian Fluid Mechanics, 2021, 290, 104508.	1.0	15
104	Insulatorâ€based dielectrophoretic focusing and trapping of particles in nonâ€Newtonian fluids. Electrophoresis, 2021, 42, 2154-2161.	1.3	15
105	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
106	Elastic instabilities in the electroosmotic flow of nonâ€Newtonian fluids through Tâ€shaped microchannels. Electrophoresis, 2020, 41, 588-597.	1.3	14
107	Electrokinetic particle separation in a single-spiral microchannel. Journal of Micromechanics and Microengineering, 2014, 24, 115018.	1.5	13
108	Continuous-flow sheathless diamagnetic particle separation in ferrofluids. Journal of Magnetism and Magnetic Materials, 2016, 412, 114-122.	1.0	13

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109	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
110	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
111	Particle separation in xanthan gum solutions. Microfluidics and Nanofluidics, 2019, 23, 1.	1.0	12
112	Electrokinetically enhanced cross-stream particle migration in viscoelastic flows. Journal of Fluid Mechanics, 2020, 898, .	1.4	12
113	Flow rate-modified streaming effects in heterogeneous microchannels. Microfluidics and Nanofluidics, 2008, 5, 733-740.	1.0	11
114	Joule heating effects on electrokinetic flows with conductivity gradients. Electrophoresis, 2021, 42, 967-974.	1.3	11
115	Flow of Non-Newtonian Fluids in a Single-Cavity Microchannel. Micromachines, 2021, 12, 836.	1.4	11
116	Chargeâ€based separation of particles and cells with similar sizes via the wallâ€induced electrical lift. Electrophoresis, 2017, 38, 320-326.	1.3	10
117	Joule heatingâ€enabled electrothermal enrichment of nanoparticles in insulatorâ€based dielectrophoretic microdevices. Electrophoresis, 2021, 42, 626-634.	1.3	9
118	Constriction length dependent instabilities in the microfluidic entry flow of polymer solutions. Soft Matter, 2021, 17, 9198-9209.	1.2	9
119	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
120	A depth-averaged model for Newtonian fluid flows in shallow microchannels. Physics of Fluids, 2021, 33, .	1.6	8
121	Solute transport and separation in nanochannel chromatography. Journal of Chromatography A, 2008, 1187, 289-292.	1.8	7
122	Enhanced Throughput for Electrokinetic Manipulation of Particles and Cells in a Stacked Microfluidic Device. Micromachines, 2016, 7, 156.	1.4	6
123	Electrokinetic instabilities in co-flowing ferrofluid and buffer solutions with matched electric conductivities. Microfluidics and Nanofluidics, 2018, 22, 1.	1.0	6
124	Analytical Guidelines for Designing Curvature-Induced Dielectrophoretic Particle Manipulation Systems. Micromachines, 2020, 11, 707.	1.4	6
125	Surfactant effects on microfluidic extensional flow of water and polymer solutions. Physics of Fluids, 2022, 34, .	1.6	4
126	Revisit of Joule heating in CE: The contribution of surface conductance. Electrophoresis, 2007, 28, 2971-2974.	1.3	3

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127	Interplay of induced charge electroosmosis and electrothermal flow in insulator-based dielectrophoresis. Physical Review Fluids, 2021, 6, .	1.0	3
128	Fluid rheological effects on streaming dielectrophoresis in a postâ€array microchannel. Electrophoresis, 2022, 43, 717-723.	1.3	3
129	Editorial for the Special Issue on Micro/Nano-Chip Electrokinetics. Micromachines, 2017, 8, 145.	1.4	2
130	Editorial for the Special Issue on Micro/Nano-Chip Electrokinetics, Volume III. Micromachines, 2020, 11, 482.	1.4	1
131	Reservoir-Based Dielectrophoresis. , 2015, , 2922-2928.		1
132	Editorial for the Special Issue on Micro/Nano-Chip Electrokinetics, Volume II. Micromachines, 2018, 9, 383.	1.4	0
133	A chemoenzymatic approach enables the siteâ€specific conjugation of recombinant proteins. Electrophoresis, 2019, 40, 2125-2128.	1.3	0
134	Reservoir-Based Dielectrophoresis. , 2013, , 1-7.		0
135	Joule Heating in Electrokinetic Flow: Theoretical Models. , 2013, , 1-14.		0
136	10.1063/1.4906798.1. , 2015, , .		0