Alexander Alexeev

List of Publications by Year
in descending order

128	4,002	101384	138251
papers	citations	36 h-index	58 g-index

132	132	132	4701
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Deformations in Siâ”Li Anodes Upon Electrochemical Alloying in Nano-Confined Space. Journal of the American Chemical Society, 2010, 132, 8548-8549.	6.6	300
2	Harnessing Janus Nanoparticles to Create Controllable Pores in Membranes. ACS Nano, 2008, 2, 1117-1122.	7.3	182
3	Ultrasoft microgels displaying emergent platelet-like behaviours. Nature Materials, 2014, 13, 1108-1114.	13.3	181
4	Mechanical Characterization of Polymers on a Nanometer Scale through Nanoindentation. A Study on Pile-up and Viscoelasticity. Macromolecules, 2007, 40, 1259-1267.	2.2	126
5	Continuous Inertial Focusing and Separation of Particles by Shape. Physical Review X, 2012, 2, .	2.8	93
6	Modeling the Motion of Microcapsules on Compliant Polymeric Surfaces. Macromolecules, 2005, 38, 10244-10260.	2.2	92
7	Resonance of flexible flapping wings at low Reynolds number. Physical Review E, 2010, 81, 056304.	0.8	86
8	Stiffness Dependent Separation of Cells in a Microfluidic Device. PLoS ONE, 2013, 8, e75901.	1.1	86
9	Inertial migration of deformable capsules in channel flow. Physics of Fluids, 2011, 23, .	1.6	79
10	Controlled Release of Nanoparticles and Macromolecules from Responsive Microgel Capsules. ACS Nano, 2012, 6, 212-219.	7.3	79
11	Microfluidic pumping using artificial magnetic cilia. Microsystems and Nanoengineering, 2018, 4, 11.	3.4	76
12	Anisotropic Microâ€•and Nanoâ€Capsules. Macromolecular Rapid Communications, 2010, 31, 2041-2046.	2.0	66
13	Mesoscale modeling: solving complex flows in biology and biotechnology. Trends in Biotechnology, 2013, 31, 426-434.	4.9	64
14	Motion of spheroid particles in shear flow with inertia. Journal of Fluid Mechanics, 2014, 749, 145-166.	1.4	64
15	Patterned Surfaces Segregate Compliant Microcapsules. Langmuir, 2007, 23, 983-987.	1.6	63
16	Marangoni-induced deformation and rupture of a liquid film on a heated microstructured wall. Physics of Fluids, 2006, 18, 012104.	1.6	62
17	Accurately evaluating Youngâ€™s modulus of polymers through nanoindentations: A phenomenological correction factor to the Oliver and Pharr procedure. Applied Physics Letters, 2006, 89, 171905.	1.5	62
18	Marangoni convection and heat transfer in thin liquid films on heated walls with topography: Experiments and numerical study. Physics of Fluids, 2005, 17, 062106.	1.6	60

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19	Designing Synthetic, Pumping Cilia That Switch the Flow Direction in Microchannels. Langmuir, 2008, 24, 12102-12106.	1.6	59
20	Microfluidic Sorting of Cells by Viability Based on Differences in Cell Stiffness. Scientific Reports, 2017, 7, 1997.	1.6	59
21	Designing Compliant Substrates to Regulate the Motion of Vesicles. Physical Review Letters, 2006, 96, 148103.	2.9	57
22	Heat transfer enhancement and thermalâ€“hydraulic performance in laminar flows through asymmetric wavy walled channels. International Journal of Heat and Mass Transfer, 2016, 97, 450-460.	2.5	57
23	Microfluidic cellular enrichment and separation through differences in viscoelastic deformation. Lab on A Chip, 2015, 15, 532-540.	3.1	53
24	Healing substrates with mobile, particle-filled microcapsules: designing a â€˜repair and goâ€™ system. Journal of the Royal Society Interface, 2007, 4, 349-357.	1.5	52
25	Microfluidic cell sorting by stiffness to examine heterogenic responses of cancer cells to chemotherapy. Cell Death and Disease, 2018, 9, 239.	2.7	52
26	Metachronal motion of artificial magnetic cilia. Soft Matter, 2018, 14, 3689-3693.	1.2	52
27	Macroscopic Strain-Induced Transition from Quasi-infinite Gold Nanoparticle Chains to Defined Plasmonic Oligomers. ACS Nano, 2017, 11, 8871-8880.	7.3	51
28	Microfluidic generation of transient cell volume exchange for convectively driven intracellular delivery of large macromolecules. Materials Today, 2018, 21, 703-712.	8.3	51
29	Designing Oscillating Cilia That Capture or Release Microscopic Particles. Langmuir, 2010, 26, 2963-2968.	1.6	50
30	Free swimming of an elastic plate plunging at low Reynolds number. Physics of Fluids, 2014, 26, .	1.6	48
31	Asymmetric motion of magnetically actuated artificial cilia. Lab on A Chip, 2017, 17, 3138-3145.	3.1	47
32	Designing smart systems to selectively entrap and burst microcapsules. Soft Matter, 2007, 3, 1500.	1.2	45
33	Hydrodynamic sorting of microparticles by size in ridged microchannels. Physics of Fluids, 2011, 23, .	1.6	44
34	Mesoscale modeling of microgel mechanics and kinetics through the swelling transition. Applied Mathematics and Mechanics (English Edition), 2018, 39, 47-62.	1.9	44
35	Modeling the release of nanoparticles from mobile microcapsules. Journal of Chemical Physics, 2006, 125, 224712.	1.2	43
36	Beating synthetic cilia enhance heat transport in microfluidic channels. Soft Matter, 2012, 8, 11508.	1.2	39

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37	Effect of aspect ratio in free-swimming plunging flexible plates. Computers and Fluids, 2016, 124, 220-225.	1.3	38
38	Modeling Microcapsules That Communicate through Nanoparticles To Undergo Self-Propelled Motion. ACS Nano, 2008, 2, 471-476.	7.3	35
39	Resonance gas oscillations in closed tubes: Numerical study and experiments. Physics of Fluids, 2003, 15, 3397-3408.	1.6	33
40	Modeling the interactions between deformable capsules rolling on a compliant surface. Soft Matter, 2006, 2, 499.	1.2	33
41	Suppression of the Rayleigh-Taylor instability of thin liquid films by the Marangoni effect. Physics of Fluids, 2007, 19, .	1.6	33
42	Designing ciliated surfaces that regulate deposition of solid particles. Soft Matter, 2010, 6, 4066.	1.2	33
43	Designing maneuverable micro-swimmers actuated by responsive gel. Soft Matter, 2012, 8, 8944.	1.2	33
44	Permeability and Diffusion through Mechanically Deformed Random Polymer Networks. Macromolecules, 2010, 43, 10117-10122.	2.2	32
45	Eyelashes divert airflow to protect the eye. Journal of the Royal Society Interface, 2015, 12, 20141294.	1.5	32
46	Designing microfluidic channel that separates elastic particles upon stiffness. Soft Matter, 2009, 5, 2721.	1.2	31
47	Harnessing synthetic cilia to regulate motion of microparticles. Soft Matter, 2011, 7, 8702.	1.2	31
48	Rapid microfluidic mixing via rotating magnetic microbeads. Sensors and Actuators A: Physical, 2016, 251, 84-91.	2.0	31
49	Designing a Simple Ratcheting System to Sort Microcapsules by Mechanical Properties. Langmuir, 2006, 22, 6739-6742.	1.6	30
50	Behavior and mechanics of dense microgel suspensions. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 27096-27103.	3.3	29
51	Self-Propelled Microswimmer Actuated by Stimuli-Sensitive Bilayered Hydrogel. ACS Macro Letters, 2015, 4, 84-88.	2.3	28
52	Cell Mechanical and Physiological Behavior in the Regime of Rapid Mechanical Compressions that Lead to Cell Volume Change. Small, 2020, 16, e1903857.	5.2	28
53	Metachronal Actuation of Microscale Magnetic Artificial Cilia. ACS Applied Materials & Interfaces, 2020, 12, 46963-46971.	4.0	28
54	Evaporation of Falling and Shear-Driven Thin Films on Smooth and Grooved Surfaces. Flow, Turbulence and Combustion, 2005, 75, 85-104.	1.4	26

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55	Orbiting magnetic microbeads enable rapid microfluidic mixing. Microfluidics and Nanofluidics, 2016, 20, 1.	1.0	26
56	Synthetic running and tumbling: an autonomous navigation strategy for catalytic nanoswimmers. Soft Matter, 2012, 8, 3077.	1.2	25
57	Effect of the microscale wall topography on the thermocapillary convection within a heated liquid film. Experimental Thermal and Fluid Science, 2005, 29, 765-772.	1.5	24
58	Fork in the Road:â€‰ Patterned Surfaces Direct Microcapsules to Make a Decision. Langmuir, 2007, 23, 10887-10890.	1.6	24
59	Selfâ€(Un)rolling Biopolymer Microstructures: Rings, Tubules, and Helical Tubules from the Same Material. Angewandte Chemie - International Edition, 2015, 54, 8490-8493.	7.2	24
60	Mesoscale modelling of environmentally responsive hydrogels: emerging applications. Chemical Communications, 2015, 51, 10083-10095.	2.2	24
61	Modeling magnetic microcapsules that crawl in microchannels. Soft Matter, 2010, 6, 794-799.	1.2	23
62	Particle drift in a resonance tubeâ€”a numerical study. Journal of the Acoustical Society of America, 2003, 114, 1357-1365.	0.5	22
63	Designing Constricted Microchannels To Selectively Entrap Soft Particles. Macromolecules, 2007, 40, 5176-5181.	2.2	21
64	Bimorph Silk Microsheets with Programmable Actuating Behavior: Experimental Analysis and Computer Simulations. ACS Applied Materials & Interfaces, 2016, 8, 17694-17706.	4.0	21
65	Selective control of surface properties using hydrodynamic interactions. Chemical Communications, 2011, 47, 472-474.	2.2	18
66	Probing the effect of morphology on lymphatic valve dynamic function. Biomechanics and Modeling in Mechanobiology, 2018, 17, 1343-1356.	1.4	18
67	Biomimetic flexible plate actuators are faster and more efficient with a passive attachment. Acta Mechanica Sinica/Lixue Xuebao, 2016, 32, 1001-1011.	1.5	17
68	Efficient swimming using flexible fins with tapered thickness. Physical Review Fluids, 2017, 2, .	1.0	17
69	Microfluidic transfection of mRNA into human primary lymphocytes and hematopoietic stem and progenitor cells using ultra-fast physical deformations. Scientific Reports, 2021, 11, 21407.	1.6	17
70	Inertial migration of spherical particles in channel flow of power law fluids. Physics of Fluids, 2020, 32, .	1.6	16
71	The growth of giant pumpkins: How extreme weight influences shape. International Journal of Non-Linear Mechanics, 2011, 46, 637-647.	1.4	15
72	Cellular enrichment through microfluidic fractionation based on cell biomechanical properties. Microfluidics and Nanofluidics, 2015, 19, 987-993.	1.0	15

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73	Enhancing size based size separation through vertical focus microfluidics using secondary flow in a ridged microchannel. Scientific Reports, 2017, 7, 17375.	1.6	15
74	Platelet heterogeneity enhances blood clot volumetric contraction: An example of asynchrono-mechanical amplification. Biomaterials, 2021, 274, 120828.	5.7	15
75	Heat interaction in a resonance tube. Physics of Fluids, 2002, 14, 1812-1815.	1.6	14
76	Modeling condensation on structured surfaces using lattice Boltzmann method. International Journal of Heat and Mass Transfer, 2019, 136, 196-212.	2.5	13
77	Effect of actuation method on hydrodynamics of elastic plates oscillating at resonance. Journal of Fluid Mechanics, 2021, 910, .	1.4	13
78	Enhancing nanoparticle deposition using actuated synthetic cilia. Microfluidics and Nanofluidics, 2014, 17, 317-324.	1.0	12
79	The liquid and solid states of highly dissipative vibrated granular columns: one-dimensional computer simulations. Powder Technology, 2002, 123, 83-104.	2.1	11
80	Modeling the interactions between compliant microcapsules and pillars in microchannels. Journal of Chemical Physics, 2007, 127, 034703.	1.2	11
81	Fluid transport in thin liquid films using traveling thermal waves. Physics of Fluids, 2013, 25, 072101.	1.6	11
82	Microbeads for Sampling and Mixing in a Complex Sample. Micromachines, 2013, 4, 103-115.	1.4	11
83	Onset of unsteady flow in wavy walled channels at low Reynolds number. Physics of Fluids, 2014, 26, .	1.6	11
84	Continuous Sorting of Cells Based on Differential P Selectin Glycoprotein Ligand Expression Using Molecular Adhesion. Analytical Chemistry, 2017, 89, 11545-11551.	3.2	11
85	Extreme thermodynamics with polymer gel tori: Harnessing thermodynamic instabilities to induce large-scale deformations. Physical Review E, 2018, 98, 020501.	0.8	11
86	Dynamics of vertically vibrated two-dimensional granular layers. Physical Review E, 1999, 59, 3231-3241.	0.8	10
87	A numerical model for the thermocapillary flow and heat transfer in a thin liquid film on a microstructured wall. International Journal of Numerical Methods for Heat and Fluid Flow, 2007, 17, 247-262.	1.6	10
88	Resolving the missing link between single platelet force and clot contractile force. IScience, 2022, 25, 103690.	1.9	10
89	Motion of compliant capsules on corrugated surfaces: A means of sorting by mechanical properties. Journal of Polymer Science, Part B: Polymer Physics, 2006, 44, 2667-2678.	2.4	9
90	Designing structured surfaces that repel fluid-borne particles. Physical Review E, 2011, 84, 066303.	0.8	9

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91	Three-dimensional particle tracking in microfluidic channel flow using in and out of focus diffraction. Flow Measurement and Instrumentation, 2015, 45, 218-224.	1.0	9
92	Hydrodynamics of resonance oscillations of columns of inelastic particles. Physical Review E, 1999, 59, 6967-6976.	0.8	8
93	Thermocapillarity-induced vortexes and liquid film dynamics on structured heated walls. Journal of Non-Equilibrium Thermodynamics, 2005, 30, .	2.4	8
94	Modeling the Interactions between Membranes and Inclusions: Designing Selfâ€Cleaning Films and Resealing Pores. Macromolecular Theory and Simulations, 2009, 18, 11-24.	0.6	8
95	Computational design of microscopic swimmers and capsules: From directed motion to collective behavior. Current Opinion in Colloid and Interface Science, 2016, 21, 44-56.	3.4	8
96	Moth-inspired methods for particle capture on a cylinder. Journal of Fluid Mechanics, 2020, 884, .	1.4	8
97	Microfluidic Platform to Transduce Cell Viability to Distinct Flow Pathways for High-Accuracy Sensing. ACS Sensors, 2021, 6, 3789-3799.	4.0	8
98	Aerosol deposition in periodic shock waves. Physics of Fluids, 2004, 16, 1028-1036.	1.6	7
99	Designing patterned substrates to regulate the movement of capsules in microchannels. Journal of Chemical Physics, 2008, 128, 235102.	1.2	7
100	Stiffness based enrichment of leukemia cells using microfluidics. APL Bioengineering, 2020, 4, 036101.	3.3	7
101	Label-free microfluidic enrichment of cancer cells from non-cancer cells in ascites. Scientific Reports, 2021, 11, 18032.	1.6	7
102	Creating localized-droplet train by traveling thermal waves. Physics of Fluids, 2014, 26, .	1.6	5
103	Fluid pumping of peristaltic vessel fitted with elastic valves. Journal of Fluid Mechanics, 2021, 918, .	1.4	5
104	Turning strategies for plunging elastic plate propulsor. Physical Review Fluids, 2019, 4, .	1.0	5
105	Hydrodynamic performance of oscillating elastic propulsors with tapered thickness. Journal of Fluid Mechanics, 2022, 944, .	1.4	5
106	Resonance oscillations with thermal effects of an inviscid gas in a closed tube. Journal of Fluid Mechanics, 2004, 518, 1-34.	1.4	4
107	Phagocyte-Inspired Smart Microcapsules. ACS Macro Letters, 2019, 8, 421-426.	2.3	4
108	Efficient aquatic locomotion using elastic propulsors with hybrid actuation. Journal of Fluid Mechanics, 2021, 922, .	1.4	4

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109	Efficient Flapping Flight Using Flexible Wings Oscillating at Resonance. The IMA Volumes in Mathematics and Its Applications, 2012, , 235-245.	0.5	3
110	Resonance Oscillations in Granular Gases. Lecture Notes in Physics, 2001, , 266-277.	0.3	3
111	Simulating incompressible flow on moving meshfree grids. Computers and Fluids, 2020, 200, 104464.	1.3	2
112	Thermocapillary Convection in Thin Liquid Films on Walls With Microgrooves. , 2005, , 293.		1
113	Polymerization-induced diffusion as a tool to generate periodic relief structures: a combinatorial study. , 2006, , .		1
114	Stiffness Dependent Separation of Cells in a Microfluidic Device. , 2012, , .		1
115	Magnetic microbeads for sampling and mixing in a microchannel. Proceedings of SPIE, 2014, , .	0.8	1
116	Artificial Cilia for Microfluidics Particle Capture. ECS Transactions, 2018, 86, 3-12.	0.3	1
117	Using Actuated Cilia to Regulate Motion of Microscopic Particles. , 2010, , .		1
118	Pumping Induced By Bio-Mimetic Magnetic Micro-Cilia in Creeping Flows. ECS Meeting Abstracts, 2016, , .	0.0	1
119	Designing Active Surface Structures to Regulate Heat Transport in Microchannels. , 2012, , .		0
120	Development of General Finite Differences for complex geometries using a sharp interface formulation. Computers and Fluids, 2019, 193, 103959.	1.3	0
121	Regulating Motion of Magnetic Capsules in Microfluidic Systems. , 2010, , .		0
122	Development of CD Based Micro-Fluidics Device for High Throughput Particle Capture and Sampling. ECS Meeting Abstracts, 2014, , .	0.0	0
123	MODELING FOULING LAYER GROWTH IN EGR HEAT EXCHANGERS. , 2017, , .		0
124	Artificial Cilia for Capture and Sampling. ECS Meeting Abstracts, 2017, , .	0.0	0
125	MODELING FOULING LAYER GROWTH IN EGR HEAT EXCHANGERS. , 2017, , .		0
126	Video: Metachronal motion of synthetic cilia. , 0, , .		0

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127	Artificial Cilia for Microfluidics Particle Capture. ECS Meeting Abstracts, 2018, , .	0.0	0
128	Magnetically Actuated Beating Cilia for Pre-Concentration of Bacteria. ECS Meeting Abstracts, 2018, , .	0.0	0