Abraham D Stroock

List of Publications by Year
in descending order

92	15,944	53794 45	42399 92
papers	citations	h-index	g-index

101	101	101	15647
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	ENGINEERING FLOWS IN SMALL DEVICES. Annual Review of Fluid Mechanics, 2004, 36, 381-411.	25.0	3,041
2	Chaotic Mixer for Microchannels. Science, 2002, 295, 647-651.	12.6	2,963
3	Generation of Solution and Surface Gradients Using Microfluidic Systems. Langmuir, 2000, 16, 8311-8316.	3.5	875
4	In vitro microvessels for the study of angiogenesis and thrombosis. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 9342-9347.	7.1	764
5	Components for integrated poly(dimethylsiloxane) microfluidic systems. Electrophoresis, 2002, 23, 3461-3473.	2.4	565
6	Microfluidic scaffolds for tissue engineering. Nature Materials, 2007, 6, 908-915.	27.5	550
7	Flexible Methods for Microfluidics. Physics Today, 2001, 54, 42-48.	0.3	496
8	Experimental and theoretical scaling laws for transverse diffusive broadening in two-phase laminar flows in microchannels. Applied Physics Letters, 2000, 76, 2376-2378.	3.3	478
9	The transpiration of water at negative pressures in a synthetic tree. Nature, 2008, 455, 208-212.	27.8	435
10	Membraneless Vanadium Redox Fuel Cell Using Laminar Flow. Journal of the American Chemical Society, 2002, 124, 12930-12931.	13.7	412
11	An Integrated Fluorescence Detection System in Poly(dimethylsiloxane) for Microfluidic Applications. Analytical Chemistry, 2001, 73, 4491-4498.	6.5	394
12	Patterning Flows Using Grooved Surfaces. Analytical Chemistry, 2002, 74, 5306-5312.	6.5	366
13	Patterning Electro-osmotic Flow with Patterned Surface Charge. Physical Review Letters, 2000, 84, 3314-3317.	7.8	317
14	Dense type I collagen matrices that support cellular remodeling and microfabrication for studies of tumor angiogenesis and vasculogenesis in vitro. Biomaterials, 2010, 31, 8596-8607.	11.4	306
15	Prototyping of Microfluidic Devices in Poly(dimethylsiloxane) Using Solid-Object Printing. Analytical Chemistry, 2002, 74, 1537-1545.	6.5	239
16	A Microfluidic Biomaterial. Journal of the American Chemical Society, 2005, 127, 13788-13789.	13.7	211
17	A Miniaturized, Parallel, Serially Diluted Immunoassay for Analyzing Multiple Antigens. Journal of the American Chemical Society, 2003, 125, 5294-5295.	13.7	164
18	Formation of microvascular networks in vitro. Nature Protocols, 2013, 8, 1820-1836.	12.0	164

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19	The Physicochemical Hydrodynamics of Vascular Plants. Annual Review of Fluid Mechanics, 2014, 46, 615-642.	25.0	160
20	A General Method for Patterning Gradients of Biomolecules on Surfaces Using Microfluidic Networks. Analytical Chemistry, 2005, 77, 2338-2347.	6.5	156
21	Controlling Flows in Microchannels with Patterned Surface Charge and Topography. Accounts of Chemical Research, 2003, 36, 597-604.	15.6	140
22	Nanobiotechnology: Protein-Nanomaterial Interactions. Biotechnology Progress, 2007, 23, 316-319.	2.6	122
23	Shape Selectivity in the Assembly of Lithographically Designed Colloidal Particles. Journal of the American Chemical Society, 2007, 129, 40-41.	13.7	117
24	3D culture broadly regulates tumor cell hypoxia response and angiogenesis via pro-inflammatory pathways. Biomaterials, 2015, 55, 110-118.	11.4	112
25	The Competition between Liquid and Vapor Transport in Transpiring Leaves Â Â. Plant Physiology, 2014, 164, 1741-1758.	4.8	108
26	Investigation of the staggered herringbone mixer with a simple analytical model. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2004, 362, 971-986.	3.4	100
27	Integration of layered chondrocyte-seeded alginate hydrogel scaffolds. Biomaterials, 2007, 28, 2987-2993.	11.4	91
28	Oxygen-Controlled Three-Dimensional Cultures to Analyze Tumor Angiogenesis. Tissue Engineering - Part A, 2010, 16, 2133-2141.	3.1	89
29	Using three-dimensional microfluidic networks for solving computationally hard problems. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 2961-2966.	7.1	81
30	Microfluidic Culture Models of Tumor Angiogenesis. Tissue Engineering - Part A, 2010, 16, 2143-2146.	3.1	75
31	Synthesis of Free-Standing Quasi-Two-Dimensional Polymers. Langmuir, 2003, 19, 2466-2472.	3.5	73
32	Patterned Polymer Multilayers as Etch Resists. Langmuir, 1999, 15, 6862-6867.	3.5	72
33	Cubatic liquid-crystalline behavior in a system of hard cuboids. Journal of Chemical Physics, 2004, 120, 9383-9389.	3.0	71
34	Membraneless, Room-Temperature, Direct Borohydride/Cerium Fuel Cell with Power Density of Over 0.25 W/cm². Journal of the American Chemical Society, 2012, 134, 6076-6079.	13.7	71
35	Physicochemical regulation of endothelial sprouting in a 3D microfluidic angiogenesis model. Journal of Biomedical Materials Research - Part A, 2013, 101, 2948-2956.	4.0	70
36	Synthesis of Geometrically Well Defined, Molecularly Thin Polymer Films. Angewandte Chemie - International Edition, 2000, 39, 1058-1061.	13.8	64

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37	Exploring water and other liquids at negative pressure. Journal of Physics Condensed Matter, 2012, 24, 284110.	1.8	62
38	Application of tissue engineering to the immune system: development of artificial lymph nodes. Frontiers in Immunology, 2012, 3, 343.	4.8	58
39	Capillarity-driven flows at the continuum limit. Soft Matter, 2016, 12, 6656-6661.	2.7	57
40	Adipose-derived stem cells increase angiogenesis through matrix metalloproteinase-dependent collagen remodeling. Integrative Biology (United Kingdom), 2016, 8, 205-215.	1.3	57
41	Drying by Cavitation and Poroelastic Relaxations in Porous Media with Macroscopic Pores Connected by Nanoscale Throats. Physical Review Letters, 2014, 113, 134501.	7.8	55
42	Phosphorescent nanoparticles for quantitative measurements of oxygen profiles inÂvitro and inÂvivo. Biomaterials, 2012, 33, 2710-2722.	11.4	54
43	Imbibition Triggered by Capillary Condensation in Nanopores. Langmuir, 2017, 33, 1655-1661.	3.5	54
44	Three-dimensional flows in slowly varying planar geometries. Physics of Fluids, 2004, 16, 3051-3062.	4.0	50
45	Phloem Loading through Plasmodesmata: A Biophysical Analysis. Plant Physiology, 2017, 175, 904-915.	4.8	48
46	Experimental Investigation of Selective Colloidal Interactions Controlled by Shape, Surface Roughness, and Steric Layers. Langmuir, 2008, 24, 11451-11463.	3.5	47
47	Microstructured templates for directed growth and vascularization of soft tissue inÂvivo. Biomaterials, 2011, 32, 5391-5401.	11.4	47
48	Multiscale Models of Breast Cancer Progression. Annals of Biomedical Engineering, 2012, 40, 2488-2500.	2.5	45
49	A microtensiometer capable of measuring water potentials below â^'10 MPa. Lab on A Chip, 2014, 14, 2806-2817.	6.0	45
50	Passive phloem loading and long-distance transport in a synthetic tree-on-a-chip. Nature Plants, 2017, 3, 17032.	9.3	43
51	Impact of Electroviscosity on the Hydraulic Conductance of the Bordered Pit Membrane: A Theoretical Investigation. Plant Physiology, 2013, 163, 999-1011.	4.8	42
52	Pumping based on transverse electrokinetic effects. Applied Physics Letters, 2003, 83, 1486-1488.	3.3	38
53	Fluidic Ratchet Based on Marangoniâ^'BÃ©nard Convection. Langmuir, 2003, 19, 4358-4362.	3.5	34
54	Mass transfer to reactive boundaries from steady three-dimensional flows in microchannels. Physics of Fluids, 2006, 18, 073602.	4.0	34

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55	Stability Limit of Liquid Water in Metastable Equilibrium with Subsaturated Vapors. Langmuir, 2009, 25, 7609-7622.	3.5	34
56	Adhesive properties of laminated alginate gels for tissue engineering of layered structures. Journal of Biomedical Materials Research - Part A, 2008, 85A, 611-618.	4.0	32
57	Multi-scale computational study of the Warburg effect, reverse Warburg effect and glutamine addiction in solid tumors. PLoS Computational Biology, 2018, 14, e1006584.	3.2	31
58	Transport Phenomena in Chaotic Laminar Flows. Annual Review of Chemical and Biomolecular Engineering, 2012, 3, 473-496.	6.8	26
59	Competition of intrinsic and topographically imposed patterns in BÃ©nardâ€“Marangoni convection. Applied Physics Letters, 2001, 79, 439-441.	3.3	24
60	An active wound dressing for controlled convective mass transfer with the wound bed. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2007, 82B, 210-222.	3.4	22
61	Mathematical Modeling and Frequency Gradient Analysis of Cellular and Vascular Invasion into Integra and Strattice. Plastic and Reconstructive Surgery, 2012, 129, 89-99.	1.4	22
62	Endothelial cell dynamics during anastomosisin vitro. Integrative Biology (United Kingdom), 2015, 7, 454-466.	1.3	22
63	Protein translocation through a tunnel induces changes in folding kinetics: A lattice model study. Biotechnology and Bioengineering, 2006, 94, 105-117.	3.3	21
64	How a â€œpinch of saltâ€•can tune chaotic mixing of colloidal suspensions. Soft Matter, 2014, 10, 4795.	2.7	20
65	Stability Limit of Water by Metastable Vaporâ€“Liquid Equilibrium with Nanoporous Silicon Membranes. Journal of Physical Chemistry B, 2016, 120, 5209-5222.	2.6	20
66	Materials for Micro- and Nanofluidics. MRS Bulletin, 2006, 31, 87-94.	3.5	19
67	A minimally disruptive method for measuring water potential in planta using hydrogel nanoreporters. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	19
68	Microfluidic Biomaterials. MRS Bulletin, 2006, 31, 114-119.	3.5	18
69	Ideal Rate of Collision of Cylinders in Simple Shear Flow. Langmuir, 2011, 27, 11813-11823.	3.5	17
70	Rigid ring-shaped particles that align in simple shear flow. Journal of Fluid Mechanics, 2013, 722, 121-158.	3.4	17
71	Leaf hydraulics I: Scaling transport properties from single cells to tissues. Journal of Theoretical Biology, 2014, 340, 251-266.	1.7	17
72	Alternative Oxidants for High-Power Fuel Cells Studied by Rotating Disk Electrode (RDE) Voltammetry at Pt, Au, and Glassy Carbon Electrodes. Journal of Physical Chemistry C, 2011, 115, 6073-6084.	3.1	16

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73	Rotational motion of a thin axisymmetric disk in a low Reynolds number linear flow. Physics of Fluids, 2014, 26, .	4.0	15
74	Interfacial mass transport in steady three-dimensional flows in microchannels. New Journal of Physics, 2009, 11, 075028.	2.9	12
75	Leaf hydraulics II: Vascularized tissues. Journal of Theoretical Biology, 2014, 340, 267-284.	1.7	10
76	Soft Lithography and Microfluidics. , 2002, , 571-595.		9
77	Analysis of superheated loop heat pipes exploiting nanoporous wick membranes. AICHE Journal, 2014, 60, 762-777.	3.6	9
78	Enhanced Oxygen Solubility in Metastable Water under Tension. Langmuir, 2018, 34, 12017-12024.	3.5	9
79	Ex Situ and In Situ Measurement of Water Activity with a MEMS Tensiometer. Analytical Chemistry, 2020, 92, 716-723.	6.5	9
80	Analysis of a time dependent injection strategy to accelerate the residual trapping of sequestered CO 2 in the geologic subsurface. International Journal of Greenhouse Gas Control, 2016, 44, 185-198.	4.6	8
81	Adsorption, Desorption, and Crystallization of Aqueous Solutions in Nanopores. Langmuir, 2019, 35, 3949-3962.	3.5	8
82	The Acellular Dermal Replacement Scaffolds StratticeÂ® and IntegraÂ®. Plastic and Reconstructive Surgery, 2011, 128, 37.	1.4	6
83	Controlling rotation and migration of rings in a simple shear flow through geometric modifications. Journal of Fluid Mechanics, 2018, 840, 379-407.	3.4	6
84	MICROFLUIDICS. , 2008, , 659-681.		5
85	How Solutes Modify the Thermodynamics and Dynamics of Filling and Emptying in Extreme Ink-Bottle Pores. Langmuir, 2019, 35, 2934-2947.	3.5	4
86	Components for integrated poly(dimethylsiloxane) microfluidic systems. , 2002, 23, 3461.		4
87	Modeling the dynamics of remobilized CO2 within the geologic subsurface. International Journal of Greenhouse Gas Control, 2018, 70, 128-145.	4.6	3
88	Microfluidic Relief for Transport Limitations. BioTechniques, 2005, 39, 159-163.	1.8	2
89	Innovative 3D Collagen Microsphere Scaffold (MSS) Promotes Robust Cellular Invasion. Plastic and Reconstructive Surgery, 2014, 134, 28.	1.4	2
90	Nonisothermal effects on water potential measurement in a simple geometry. Physical Review Fluids, 2021, 6, .	2.5	1

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91	Re-entrant transition as a bridge of broken ergodicity in confined monolayers of hexagonal prisms and cylinders. Journal of Colloid and Interface Science, 2022, 607, 1478-1490.	9.4	1
92	Patterning Flows Using Grooved Surfaces: Application to Microfluidics. , 2002, , 620-622.		1