

Abraham D Stroock

List of Publications by Year in descending order

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92
papers

15,944
citations

53794

45
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42399

92
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101
all docs

101
docs citations

101
times ranked

15647
citing authors

#	ARTICLE	IF	CITATIONS
1	Re-entrant transition as a bridge of broken ergodicity in confined monolayers of hexagonal prisms and cylinders. <i>Journal of Colloid and Interface Science</i> , 2022, 607, 1478-1490.	9.4	1
2	Nonisothermal effects on water potential measurement in a simple geometry. <i>Physical Review Fluids</i> , 2021, 6, .	2.5	1
3	A minimally disruptive method for measuring water potential in planta using hydrogel nanoreporters. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	19
4	<i>Ex Situ</i> and <i>In Situ</i> Measurement of Water Activity with a MEMS Tensiometer. <i>Analytical Chemistry</i> , 2020, 92, 716-723.	6.5	9
5	How Solutes Modify the Thermodynamics and Dynamics of Filling and Emptying in Extreme Ink-Bottle Pores. <i>Langmuir</i> , 2019, 35, 2934-2947.	3.5	4
6	Adsorption, Desorption, and Crystallization of Aqueous Solutions in Nanopores. <i>Langmuir</i> , 2019, 35, 3949-3962.	3.5	8
7	Modeling the dynamics of remobilized CO ₂ within the geologic subsurface. <i>International Journal of Greenhouse Gas Control</i> , 2018, 70, 128-145.	4.6	3
8	Controlling rotation and migration of rings in a simple shear flow through geometric modifications. <i>Journal of Fluid Mechanics</i> , 2018, 840, 379-407.	3.4	6
9	Multi-scale computational study of the Warburg effect, reverse Warburg effect and glutamine addiction in solid tumors. <i>PLoS Computational Biology</i> , 2018, 14, e1006584.	3.2	31
10	Enhanced Oxygen Solubility in Metastable Water under Tension. <i>Langmuir</i> , 2018, 34, 12017-12024.	3.5	9
11	Imbibition Triggered by Capillary Condensation in Nanopores. <i>Langmuir</i> , 2017, 33, 1655-1661.	3.5	54
12	Passive phloem loading and long-distance transport in a synthetic tree-on-a-chip. <i>Nature Plants</i> , 2017, 3, 17032.	9.3	43
13	Phloem Loading through Plasmodesmata: A Biophysical Analysis. <i>Plant Physiology</i> , 2017, 175, 904-915.	4.8	48
14	Analysis of a time dependent injection strategy to accelerate the residual trapping of sequestered CO ₂ in the geologic subsurface. <i>International Journal of Greenhouse Gas Control</i> , 2016, 44, 185-198.	4.6	8
15	Capillarity-driven flows at the continuum limit. <i>Soft Matter</i> , 2016, 12, 6656-6661.	2.7	57
16	Stability Limit of Water by Metastable Vapor—Liquid Equilibrium with Nanoporous Silicon Membranes. <i>Journal of Physical Chemistry B</i> , 2016, 120, 5209-5222.	2.6	20
17	Adipose-derived stem cells increase angiogenesis through matrix metalloproteinase-dependent collagen remodeling. <i>Integrative Biology (United Kingdom)</i> , 2016, 8, 205-215.	1.3	57
18	3D culture broadly regulates tumor cell hypoxia response and angiogenesis via pro-inflammatory pathways. <i>Biomaterials</i> , 2015, 55, 110-118.	11.4	112

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19	Endothelial cell dynamics during anastomosis <i>in vitro</i> . Integrative Biology (United Kingdom), 2015, 7, 454-466.	1.3	22
20	Rotational motion of a thin axisymmetric disk in a low Reynolds number linear flow. Physics of Fluids, 2014, 26, .	4.0	15
21	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
22	Leaf hydraulics II: Vascularized tissues. Journal of Theoretical Biology, 2014, 340, 267-284.	1.7	10
23	Analysis of superheated loop heat pipes exploiting nanoporous wick membranes. AIChE Journal, 2014, 60, 762-777.	3.6	9
24	The Physicochemical Hydrodynamics of Vascular Plants. Annual Review of Fluid Mechanics, 2014, 46, 615-642.	25.0	160
25	A microtensiometer capable of measuring water potentials below ~ 10 MPa. Lab on A Chip, 2014, 14, 2806-2817.	6.0	45
26	How a "pinch of salt" can tune chaotic mixing of colloidal suspensions. Soft Matter, 2014, 10, 4795.	2.7	20
27	Leaf hydraulics I: Scaling transport properties from single cells to tissues. Journal of Theoretical Biology, 2014, 340, 251-266.	1.7	17
28	The Competition between Liquid and Vapor Transport in Transpiring Leaves \hat{A} \hat{A} . Plant Physiology, 2014, 164, 1741-1758.	4.8	108
29	Innovative 3D Collagen Microsphere Scaffold (MSS) Promotes Robust Cellular Invasion. Plastic and Reconstructive Surgery, 2014, 134, 28.	1.4	2
30	Formation of microvascular networks <i>in vitro</i> . Nature Protocols, 2013, 8, 1820-1836.	12.0	164
31	Rigid ring-shaped particles that align in simple shear flow. Journal of Fluid Mechanics, 2013, 722, 121-158.	3.4	17
32	Impact of Electroviscosity on the Hydraulic Conductance of the Bordered Pit Membrane: A Theoretical Investigation. Plant Physiology, 2013, 163, 999-1011.	4.8	42
33	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
34	Application of tissue engineering to the immune system: development of artificial lymph nodes. Frontiers in Immunology, 2012, 3, 343.	4.8	58
35	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
36	<i>In vitro</i> 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

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37	Multiscale Models of Breast Cancer Progression. <i>Annals of Biomedical Engineering</i> , 2012, 40, 2488-2500.	2.5	45
38	Membraneless, Room-Temperature, Direct Borohydride/Cerium Fuel Cell with Power Density of Over 0.25 W/cm ² . <i>Journal of the American Chemical Society</i> , 2012, 134, 6076-6079.	13.7	71
39	Exploring water and other liquids at negative pressure. <i>Journal of Physics Condensed Matter</i> , 2012, 24, 284110.	1.8	62
40	Transport Phenomena in Chaotic Laminar Flows. <i>Annual Review of Chemical and Biomolecular Engineering</i> , 2012, 3, 473-496.	6.8	26
41	Phosphorescent nanoparticles for quantitative measurements of oxygen profiles in vitro and in vivo. <i>Biomaterials</i> , 2012, 33, 2710-2722.	11.4	54
42	Ideal Rate of Collision of Cylinders in Simple Shear Flow. <i>Langmuir</i> , 2011, 27, 11813-11823.	3.5	17
43	Alternative Oxidants for High-Power Fuel Cells Studied by Rotating Disk Electrode (RDE) Voltammetry at Pt, Au, and Glassy Carbon Electrodes. <i>Journal of Physical Chemistry C</i> , 2011, 115, 6073-6084.	3.1	16
44	The Acellular Dermal Replacement Scaffolds Strattice® and Integra®. <i>Plastic and Reconstructive Surgery</i> , 2011, 128, 37.	1.4	6
45	Microstructured templates for directed growth and vascularization of soft tissue in vivo. <i>Biomaterials</i> , 2011, 32, 5391-5401.	11.4	47
46	Dense type I collagen matrices that support cellular remodeling and microfabrication for studies of tumor angiogenesis and vasculogenesis in vitro. <i>Biomaterials</i> , 2010, 31, 8596-8607.	11.4	306
47	Oxygen-Controlled Three-Dimensional Cultures to Analyze Tumor Angiogenesis. <i>Tissue Engineering - Part A</i> , 2010, 16, 2133-2141.	3.1	89
48	Microfluidic Culture Models of Tumor Angiogenesis. <i>Tissue Engineering - Part A</i> , 2010, 16, 2143-2146.	3.1	75
49	Interfacial mass transport in steady three-dimensional flows in microchannels. <i>New Journal of Physics</i> , 2009, 11, 075028.	2.9	12
50	Stability Limit of Liquid Water in Metastable Equilibrium with Subsaturated Vapors. <i>Langmuir</i> , 2009, 25, 7609-7622.	3.5	34
51	Adhesive properties of laminated alginate gels for tissue engineering of layered structures. <i>Journal of Biomedical Materials Research - Part A</i> , 2008, 85A, 611-618.	4.0	32
52	The transpiration of water at negative pressures in a synthetic tree. <i>Nature</i> , 2008, 455, 208-212.	27.8	435
53	Experimental Investigation of Selective Colloidal Interactions Controlled by Shape, Surface Roughness, and Steric Layers. <i>Langmuir</i> , 2008, 24, 11451-11463.	3.5	47
54	MICROFLUIDICS. , 2008, , 659-681.		5

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55	Shape Selectivity in the Assembly of Lithographically Designed Colloidal Particles. <i>Journal of the American Chemical Society</i> , 2007, 129, 40-41.	13.7	117
56	An active wound dressing for controlled convective mass transfer with the wound bed. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2007, 82B, 210-222.	3.4	22
57	Integration of layered chondrocyte-seeded alginate hydrogel scaffolds. <i>Biomaterials</i> , 2007, 28, 2987-2993.	11.4	91
58	Microfluidic scaffolds for tissue engineering. <i>Nature Materials</i> , 2007, 6, 908-915.	27.5	550
59	Nanobiotechnology: Protein-Nanomaterial Interactions. <i>Biotechnology Progress</i> , 2007, 23, 316-319.	2.6	122
60	Mass transfer to reactive boundaries from steady three-dimensional flows in microchannels. <i>Physics of Fluids</i> , 2006, 18, 073602.	4.0	34
61	Microfluidic Biomaterials. <i>MRS Bulletin</i> , 2006, 31, 114-119.	3.5	18
62	Protein translocation through a tunnel induces changes in folding kinetics: A lattice model study. <i>Biotechnology and Bioengineering</i> , 2006, 94, 105-117.	3.3	21
63	Materials for Micro- and Nanofluidics. <i>MRS Bulletin</i> , 2006, 31, 87-94.	3.5	19
64	Microfluidic Relief for Transport Limitations. <i>BioTechniques</i> , 2005, 39, 159-163.	1.8	2
65	A Microfluidic Biomaterial. <i>Journal of the American Chemical Society</i> , 2005, 127, 13788-13789.	13.7	211
66	A General Method for Patterning Gradients of Biomolecules on Surfaces Using Microfluidic Networks. <i>Analytical Chemistry</i> , 2005, 77, 2338-2347.	6.5	156
67	Cubic liquid-crystalline behavior in a system of hard cuboids. <i>Journal of Chemical Physics</i> , 2004, 120, 9383-9389.	3.0	71
68	Three-dimensional flows in slowly varying planar geometries. <i>Physics of Fluids</i> , 2004, 16, 3051-3062.	4.0	50
69	ENGINEERING FLOWS IN SMALL DEVICES. <i>Annual Review of Fluid Mechanics</i> , 2004, 36, 381-411.	25.0	3,041
70	Investigation of the staggered herringbone mixer with a simple analytical model. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2004, 362, 971-986.	3.4	100
71	A Miniaturized, Parallel, Serially Diluted Immunoassay for Analyzing Multiple Antigens. <i>Journal of the American Chemical Society</i> , 2003, 125, 5294-5295.	13.7	164
72	Synthesis of Free-Standing Quasi-Two-Dimensional Polymers. <i>Langmuir</i> , 2003, 19, 2466-2472.	3.5	73

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73	Fluidic Ratchet Based on Marangoni-Driven Convection. <i>Langmuir</i> , 2003, 19, 4358-4362.	3.5	34
74	Controlling Flows in Microchannels with Patterned Surface Charge and Topography. <i>Accounts of Chemical Research</i> , 2003, 36, 597-604.	15.6	140
75	Pumping based on transverse electrokinetic effects. <i>Applied Physics Letters</i> , 2003, 83, 1486-1488.	3.3	38
76	Patterning Flows Using Grooved Surfaces. <i>Analytical Chemistry</i> , 2002, 74, 5306-5312.	6.5	366
77	Membraneless Vanadium Redox Fuel Cell Using Laminar Flow. <i>Journal of the American Chemical Society</i> , 2002, 124, 12930-12931.	13.7	412
78	Prototyping of Microfluidic Devices in Poly(dimethylsiloxane) Using Solid-Object Printing. <i>Analytical Chemistry</i> , 2002, 74, 1537-1545.	6.5	239
79	Chaotic Mixer for Microchannels. <i>Science</i> , 2002, 295, 647-651.	12.6	2,963
80	Soft Lithography and Microfluidics. , 2002, , 571-595.		9
81	Components for integrated poly(dimethylsiloxane) microfluidic systems. <i>Electrophoresis</i> , 2002, 23, 3461-3473.	2.4	565
82	Components for integrated poly(dimethylsiloxane) microfluidic systems. , 2002, 23, 3461.		4
83	Patterning Flows Using Grooved Surfaces: Application to Microfluidics. , 2002, , 620-622.		1
84	An Integrated Fluorescence Detection System in Poly(dimethylsiloxane) for Microfluidic Applications. <i>Analytical Chemistry</i> , 2001, 73, 4491-4498.	6.5	394
85	Flexible Methods for Microfluidics. <i>Physics Today</i> , 2001, 54, 42-48.	0.3	496
86	Using three-dimensional microfluidic networks for solving computationally hard problems. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2001, 98, 2961-2966.	7.1	81
87	Competition of intrinsic and topographically imposed patterns in Marangoni convection. <i>Applied Physics Letters</i> , 2001, 79, 439-441.	3.3	24
88	Synthesis of Geometrically Well Defined, Molecularly Thin Polymer Films. <i>Angewandte Chemie - International Edition</i> , 2000, 39, 1058-1061.	13.8	64
89	Patterning Electro-osmotic Flow with Patterned Surface Charge. <i>Physical Review Letters</i> , 2000, 84, 3314-3317.	7.8	317
90	Generation of Solution and Surface Gradients Using Microfluidic Systems. <i>Langmuir</i> , 2000, 16, 8311-8316.	3.5	875

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91	Experimental and theoretical scaling laws for transverse diffusive broadening in two-phase laminar flows in microchannels. <i>Applied Physics Letters</i> , 2000, 76, 2376-2378.	3.3	478
92	Patterned Polymer Multilayers as Etch Resists. <i>Langmuir</i> , 1999, 15, 6862-6867.	3.5	72