Abraham D Stroock

List of Publications by Year in Descending Order

93 papers	13,629 citations	41 h-index	101 g-index
101 ext. papers	14,939 ext. citations	7.9 avg, IF	6.31 L-index

#	Paper	IF	Citations
93	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	9.3	0
92	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,	11.5	4
91	and Measurement of Water Activity with a MEMS Tensiometer. *Analytical Chemistry*, **2020**, 92, 716-723	7.8	3
90	How Solutes Modify the Thermodynamics and Dynamics of Filling and Emptying in Extreme Ink-Bottle Pores. *Langmuir*, **2019**, 35, 2934-2947	4	3
89	Adsorption, Desorption, and Crystallization of Aqueous Solutions in Nanopores. *Langmuir*, **2019**, 35, 3949-3962	4	5
88	Modeling the dynamics of remobilized CO2 within the geologic subsurface. *International Journal of Greenhouse Gas Control*, **2018**, 70, 128-145	4.2	2
87	Controlling rotation and migration of rings in a simple shear flow through geometric modifications. *Journal of Fluid Mechanics*, **2018**, 840, 379-407	3.7	5
86	Multi-scale computational study of the Warburg effect, reverse Warburg effect and glutamine addiction in solid tumors. *PLoS Computational Biology*, **2018**, 14, e1006584	5	15
85	Enhanced Oxygen Solubility in Metastable Water under Tension. *Langmuir*, **2018**, 34, 12017-12024	4	7
84	Imbibition Triggered by Capillary Condensation in Nanopores. *Langmuir*, **2017**, 33, 1655-1661	4	36
83	Passive phloem loading and long-distance transport in a synthetic tree-on-a-chip. *Nature Plants*, **2017**, 3, 17032	11.5	34
82	Phloem Loading through Plasmodesmata: A Biophysical Analysis. *Plant Physiology*, **2017**, 175, 904-915	6.6	33
81	Capillarity-driven flows at the continuum limit. *Soft Matter*, **2016**, 12, 6656-61	3.6	41
80	Stability Limit of Water by Metastable Vapor-Liquid Equilibrium with Nanoporous Silicon Membranes. *Journal of Physical Chemistry B*, **2016**, 120, 5209-22	3.4	18
79	Adipose-derived stem cells increase angiogenesis through matrix metalloproteinase-dependent collagen remodeling. *Integrative Biology (United Kingdom)*, **2016**, 8, 205-15	3.7	41
78	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	4.2	6
77	3D culture broadly regulates tumor cell hypoxia response and angiogenesis via pro-inflammatory pathways. *Biomaterials*, **2015**, 55, 110-8	15.6	90

76	Endothelial cell dynamics during anastomosis in vitro. *Integrative Biology (United Kingdom)*, **2015**, 7, 454-66	3.7	20
75	Analysis of superheated loop heat pipes exploiting nanoporous wick membranes. *AICHE Journal*, **2014**, 60, 762-777	3.6	7
74	The Physicochemical Hydrodynamics of Vascular Plants. *Annual Review of Fluid Mechanics*, **2014**, 46, 615-642	6.2	122
73	A microtensiometer capable of measuring water potentials below -10 MPa. *Lab on A Chip*, **2014**, 14, 2806-17	7.2	31
72	How a "pinch of salt" can tune chaotic mixing of colloidal suspensions. *Soft Matter*, **2014**, 10, 4795-9	3.6	13
71	Leaf hydraulics I: scaling transport properties from single cells to tissues. *Journal of Theoretical Biology*, **2014**, 340, 251-66	2.3	13
70	The competition between liquid and vapor transport in transpiring leaves. *Plant Physiology*, **2014**, 164, 1741-58	6.6	77
69	Innovative 3D Collagen Microsphere Scaffold (MSS) Promotes Robust Cellular Invasion. *Plastic and Reconstructive Surgery*, **2014**, 134, 28	2.7	2
68	Rotational motion of a thin axisymmetric disk in a low Reynolds number linear flow. *Physics of Fluids* , **2014**, 26, 033303	4.4	13
67	Drying by cavitation and poroelastic relaxations in porous media with macroscopic pores connected by nanoscale throats. *Physical Review Letters*, **2014**, 113, 134501	7.4	46
66	Leaf hydraulics II: vascularized tissues. *Journal of Theoretical Biology*, **2014**, 340, 267-84	2.3	10
65	Formation of microvascular networks in vitro. *Nature Protocols*, **2013**, 8, 1820-36	18.8	149
64	Rigid ring-shaped particles that align in simple shear flow. *Journal of Fluid Mechanics*, **2013**, 722, 121-158	3.7	12
63	The Stability Limit and other Open Questions on Water at Negative Pressure. *Advances in Chemical Physics*, **2013**, 51-80		15
62	Impact of electroviscosity on the hydraulic conductance of the bordered pit membrane: a theoretical investigation. *Plant Physiology*, **2013**, 163, 999-1011	6.6	33
61	Physicochemical regulation of endothelial sprouting in a 3D microfluidic angiogenesis model. *Journal of Biomedical Materials Research - Part A*, **2013**, 101, 2948-56	5.4	59
60	Phosphorescent nanoparticles for quantitative measurements of oxygen profiles in vitro and in vivo. *Biomaterials*, **2012**, 33, 2710-22	15.6	48
59	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, 9342-7	11.5	657

58	Multiscale models of breast cancer progression. *Annals of Biomedical Engineering*, **2012**, 40, 2488-500	4.7	38
57	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, 6076-9	16.4	64
56	Exploring water and other liquids at negative pressure. *Journal of Physics Condensed Matter*, **2012**, 24, 284110	1.8	52
55	Transport phenomena in chaotic laminar flows. *Annual Review of Chemical and Biomolecular Engineering*, **2012**, 3, 473-96	8.9	25
54	Application of tissue engineering to the immune system: development of artificial lymph nodes. *Frontiers in Immunology*, **2012**, 3, 343	8.4	37
53	Mathematical modeling and frequency gradient analysis of cellular and vascular invasion into integra and strattice: toward optimal design of tissue regeneration scaffolds. *Plastic and Reconstructive Surgery*, **2012**, 129, 89-99	2.7	18
52	Ideal rate of collision of cylinders in simple shear flow. *Langmuir*, **2011**, 27, 11813-23	4	14
51	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	3.8	13
50	The Acellular Dermal Replacement Scaffolds Strattice™ and Integra® . *Plastic and Reconstructive Surgery*, **2011**, 128, 37	2.7	6
49	Microstructured templates for directed growth and vascularization of soft tissue in vivo. *Biomaterials*, **2011**, 32, 5391-401	15.6	46
48	Oxygen-controlled three-dimensional cultures to analyze tumor angiogenesis. *Tissue Engineering - Part A*, **2010**, 16, 2133-41	3.9	84
47	Microfluidic culture models of tumor angiogenesis. *Tissue Engineering - Part A*, **2010**, 16, 2143-6	3.9	70
46	Dense type I collagen matrices that support cellular remodeling and microfabrication for studies of tumor angiogenesis and vasculogenesis in vitro. *Biomaterials*, **2010**, 31, 8596-607	15.6	243
45	Interfacial mass transport in steady three-dimensional flows in microchannels. *New Journal of Physics*, **2009**, 11, 075028	2.9	11
44	Stability limit of liquid water in metastable equilibrium with subsaturated vapors. *Langmuir*, **2009**, 25, 7609-22	4	30
43	The transpiration of water at negative pressures in a synthetic tree. *Nature*, **2008**, 455, 208-12	50.4	341
42	Experimental investigation of selective colloidal interactions controlled by shape, surface roughness, and steric layers. *Langmuir*, **2008**, 24, 11451-63	4	39
41	MICROFLUIDICS **2008**, 659-681		4

40	Adhesive properties of laminated alginate gels for tissue engineering of layered structures. *Journal of Biomedical Materials Research - Part A*, **2008**, 85, 611-8	5.4	29
39	Shape selectivity in the assembly of lithographically designed colloidal particles. *Journal of the American Chemical Society*, **2007**, 129, 40-1	16.4	107
38	An active wound dressing for controlled convective mass transfer with the wound bed. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2007**, 82, 210-22	3.5	19
37	Integration of layered chondrocyte-seeded alginate hydrogel scaffolds. *Biomaterials*, **2007**, 28, 2987-93	15.6	78
36	Microfluidic scaffolds for tissue engineering. *Nature Materials*, **2007**, 6, 908-15	27	498
35	Nanobiotechnology: protein-nanomaterial interactions. *Biotechnology Progress*, **2007**, 23, 316-9	2.8	105
34	Protein translocation through a tunnel induces changes in folding kinetics: a lattice model study. *Biotechnology and Bioengineering*, **2006**, 94, 105-17	4.9	21
33	Materials for Micro- and Nanofluidics. *MRS Bulletin*, **2006**, 31, 87-94	3.2	18
32	Mass transfer to reactive boundaries from steady three-dimensional flows in microchannels. *Physics of Fluids*, **2006**, 18, 073602	4.4	32
31	Microfluidic Biomaterials. *MRS Bulletin*, **2006**, 31, 114-119	3.2	17
30	A microfluidic biomaterial. *Journal of the American Chemical Society*, **2005**, 127, 13788-9	16.4	190
29	A general method for patterning gradients of biomolecules on surfaces using microfluidic networks. *Analytical Chemistry*, **2005**, 77, 2338-47	7.8	141
28	Microfluidic relief for transport limitations. *BioTechniques*, **2005**, 39, 159, 161, 163	2.5	2
27	Cubatic liquid-crystalline behavior in a system of hard cuboids. *Journal of Chemical Physics*, **2004**, 120, 9383-9	3.9	60
26	Three-dimensional flows in slowly varying planar geometries. *Physics of Fluids*, **2004**, 16, 3051-3062	4.4	46
25	ENGINEERING FLOWS IN SMALL DEVICES. *Annual Review of Fluid Mechanics*, **2004**, 36, 381-411	22	2632
24	Investigation of the staggered herringbone mixer with a simple analytical model. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2004**, 362, 971-86	3	92
23	A miniaturized, parallel, serially diluted immunoassay for analyzing multiple antigens. *Journal of the American Chemical Society*, **2003**, 125, 5294-5	16.4	144

22	Synthesis of Free-Standing Quasi-Two-Dimensional Polymers. *Langmuir*, **2003**, 19, 2466-2472	4	69
21	Fluidic Ratchet Based on Marangoni–Bénard Convection. *Langmuir*, **2003**, 19, 4358-4362	4	27
20	Controlling flows in microchannels with patterned surface charge and topography. *Accounts of Chemical Research*, **2003**, 36, 597-604	24.3	121
19	Pumping based on transverse electrokinetic effects. *Applied Physics Letters*, **2003**, 83, 1486-1488	3.4	34
18	Soft Lithography and Microfluidics **2002**, 571-595		5
17	Components for integrated poly(dimethylsiloxane) microfluidic systems. *Electrophoresis*, **2002**, 23, 3461-78	3.8	496
16	Patterning flows using grooved surfaces. *Analytical Chemistry*, **2002**, 74, 5306-12	7.8	315
15	Membraneless vanadium redox fuel cell using laminar flow. *Journal of the American Chemical Society*, **2002**, 124, 12930-1	16.4	347
14	Prototyping of microfluidic devices in poly(dimethylsiloxane) using solid-object printing. *Analytical Chemistry*, **2002**, 74, 1537-45	7.8	211
13	Chaotic mixer for microchannels. *Science*, **2002**, 295, 647-51	33.3	2471
12	Patterning Flows Using Grooved Surfaces: Application to Microfluidics **2002**, 620-622		
11	Components for integrated poly(dimethylsiloxane) microfluidic systems **2002**, 23, 3461		2
10	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, 2961-6	11.5	74
9	Competition of intrinsic and topographically imposed patterns in Bénard–Marangoni convection. *Applied Physics Letters*, **2001**, 79, 439-441	3.4	20
8	An integrated fluorescence detection system in poly(dimethylsiloxane) for microfluidic applications. *Analytical Chemistry*, **2001**, 73, 4491-8	7.8	347
7	Flexible Methods for Microfluidics. *Physics Today*, **2001**, 54, 42-48	0.9	430
6	Synthesis of Geometrically Well Defined, Molecularly Thin Polymer Films This work was supported by the National Institutes of Health (GM30376). A.D.S is supported by a NIH Molecular Biophysics Training Grant (GM08313-10). *Angewandte Chemie - International Edition*, **2000**, 39, 1058-1061	16.4	54
5	Patterning electro-osmotic flow with patterned surface charge. *Physical Review Letters*, **2000**, 84, 3314-7	7.4	271

4	Generation of Solution and Surface Gradients Using Microfluidic Systems. *Langmuir*, **2000**, 16, 8311-8316	4	776
3	Experimental and theoretical scaling laws for transverse diffusive broadening in two-phase laminar flows in microchannels. *Applied Physics Letters*, **2000**, 76, 2376-2378	3.4	436
2	Patterned Polymer Multilayers as Etch Resists. *Langmuir*, **1999**, 15, 6862-6867	4	68
1	Interfacial Transfer from Stirred Laminar Flows91-109		1