Aaron R Wheeler

List of Publications by Year
in descending order

148 papers	12,481 citations	16451 64 h-index	24982 109 g-index
153 all docs	153 docs citations	153 times ranked	10222 citing authors

#	Article	IF	Citations
1	Analysis of the effects of aryl hydrocarbon receptor expression on cancer cell invasion via three-dimensional microfluidic invasion assays. Lab on A Chip, 2022, 22, 313-325.	6.0	6
2	Portable sample processing for molecular assays: application to Zika virus diagnostics. Lab on A Chip, 2022, 22, 1748-1763.	6.0	15
3	Vertical Addressing of 1â€Plane Electrodes for Digital Microfluidics. Advanced Materials Technologies, 2022, 7, .	5.8	6
4	Machine Learning to Automate the Visual Interpretation of Chemical Agglutination Tests. , 2022, , .		0
5	Early Warning Measurement of SARS-CoV-2 Variants of Concern in Wastewaters by Mass Spectrometry. Environmental Science and Technology Letters, 2022, 9, 638-644.	8.7	4
6	Lab on a Chip â€“ past, present, and future. Lab on A Chip, 2021, 21, 1197-1198.	6.0	1
7	Bacterial classification and antibiotic susceptibility testing on an integrated microfluidic platform. Lab on A Chip, 2021, 21, 4208-4222.	6.0	23
8	Understanding Carbon Nanotubeâ€Based Ionic Diodes: Design and Mechanism. Small, 2021, 17, e2100383.	10.0	15
9	Integrated Assembly and Photopreservation of Topographical Micropatterns. Small, 2021, 17, e2103702.	10.0	12
10	Reconfigurable multi-component micromachines driven by optoelectronic tweezers. Nature Communications, 2021, 12, 5349.	12.8	41
11	Integrated Assembly and Photopreservation of Topographical Micropatterns (Small 37/2021). Small, 2021, 17, 2170193.	10.0	2
12	Digital Microfluidic Hemagglutination Assays for Blood Typing, Donor Compatibility Testing, and Hematocrit Analysis. Clinical Chemistry, 2021, 67, 1699-1708.	3.2	23
13	Interaction between positive and negative dielectric microparticles/microorganism in optoelectronic tweezers. Lab on A Chip, 2021, 21, 4379-4389.	6.0	13
14	Autonomous object harvesting using synchronized optoelectronic microrobots. , 2021, , .		1
15	When robotics met fluidics. Lab on A Chip, 2020, 20, 709-716.	6.0	27
16	Cell invasion in digital microfluidic microgel systems. Science Advances, 2020, 6, eaba9589.	10.3	24
17	Digital microfluidic isolation of single cells for -Omics. Nature Communications, 2020, 11, 5632.	12.8	85
18	Ionotronics Based on Horizontally Aligned Carbon Nanotubes. Advanced Functional Materials, 2020, 30, 2003177.	14.9	33

#	Article	IF	Citations
19	A Digitalâ€toâ€Channel Microfluidic Interface via Inkjet Printing of Silver and UV Curing of Thiolâ€“Enes. Advanced Materials Technologies, 2020, 5, 2000451.	5.8	16
20	Direct loading of blood for plasma separation and diagnostic assays on a digital microfluidic device. Lab on A Chip, 2020, 20, 1845-1855.	6.0	43
21	Assembly of Topographical Micropatterns with Optoelectronic Tweezers. Advanced Optical Materials, 2019, 7, 1900669.	7.3	14
22	The optoelectronic microrobot: A versatile toolbox for micromanipulation. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 14823-14828.	7.1	79
23	Rapid Chemical Reaction Monitoring by Digital Microfluidicsâ€NMR: Proof of Principle Towards an Automated Synthetic Discovery Platform. Angewandte Chemie, 2019, 131, 15516-15520.	2.0	3
24	Rapid Chemical Reaction Monitoring by Digital Microfluidicsâ€NMR: Proof of Principle Towards an Automated Synthetic Discovery Platform. Angewandte Chemie - International Edition, 2019, 58, 15372-15376.	13.8	33
25	â€œPlug-n-Playâ€•Sensing with Digital Microfluidics. Analytical Chemistry, 2019, 91, 2506-2515.	6.5	35
26	Digital microfluidics and nuclear magnetic resonance spectroscopy for in situ diffusion measurements and reaction monitoring. Lab on A Chip, 2019, 19, 641-653.	6.0	39
27	Ion-Exchange Based Immobilization of Chromogenic Reagents on Microfluidic Paper Analytical Devices. Analytical Chemistry, 2019, 91, 8756-8761.	6.5	19
28	A microfluidic platform for continuous monitoring of dopamine homeostasis in dopaminergic cells. Microsystems and Nanoengineering, 2019, 5, 10.	7.0	16
29	Velocity Saturation in Digital Microfluidics. Langmuir, 2019, 35, 5342-5352.	3.5	25
30	Size-scaling effects for microparticles and cells manipulated by optoelectronic tweezers. Optics Letters, 2019, 44, 4171.	3.3	20
31	A digital microfluidic system for serological immunoassays in remote settings. Science Translational Medicine, 2018, 10, .	12.4	117
32	Patterned Optoelectronic Tweezers: A New Scheme for Selecting, Moving, and Storing Dielectric Particles and Cells. Small, 2018, 14, e1803342.	10.0	41
33	Escape from an Optoelectronic Tweezer Trap: experimental results and simulations. Optics Express, 2018, 26, 5300.	3.4	19
34	Hopping mechanism of particles and cells escaping from optoelectronic tweezer traps. , 2018, , .		0
35	Printed Microfluidics. Advanced Functional Materials, 2017, 27, 1604824.	14.9	41
36	Pre-concentration by liquid intake by paper (P-CLIP): a new technique for large volumes and digital microfluidics. Lab on A Chip, 2017, 17, 2272-2280.	6.0	27

#	Article	IF	Citations
37	Upon the Shoulders of Giants: Open-Source Hardware and Software in Analytical Chemistry. Analytical Chemistry, 2017, 89, 4330-4338.	6.5	67
38	Towards a personalized approach to aromatase inhibitor therapy: a digital microfluidic platform for rapid analysis of estradiol in core-needle-biopsies. Lab on A Chip, 2017, 17, 1594-1602.	6.0	27
39	Reply to the â€˜Comment on â€œTowards a personalized approach to aromatase inhibitor therapy: a digital microfluidic platform for rapid analysis of estradiol in core-needle-biopsiesâ€â€™ by P. E. LÃ¸nning, Lab Chip, 2017, 17, DOI: 10.1039/C7LC00617A. Lab on A Chip, 2017, 17, 3188-3189.	6.0	0
40	A digital microfluidic interface between solid-phase microextraction and liquid chromatographyâ€“mass spectrometry. Journal of Chromatography A, 2016, 1444, 1-7.	3.7	29
41	Digital Microfluidics for Immunoprecipitation. Analytical Chemistry, 2016, 88, 10223-10230.	6.5	33
42	Interfacing digital microfluidics with high-field nuclear magnetic resonance spectroscopy. Lab on A Chip, 2016, 16, 4424-4435.	6.0	42
43	An inkjet printed, roll-coated digital microfluidic device for inexpensive, miniaturized diagnostic assays. Lab on A Chip, 2016, 16, 4560-4568.	6.0	88
44	Biodegradable scaffold with built-in vasculature for organ-on-a-chip engineering and direct surgical anastomosis. Nature Materials, 2016, 15, 669-678.	27.5	471
45	A microfluidic method for dopamine uptake measurements in dopaminergic neurons. Lab on A Chip, 2016, 16, 543-552.	6.0	23
46	Electrochemiluminescence on digital microfluidics for microRNA analysis. Biosensors and Bioelectronics, 2016, 77, 845-852.	10.1	69
47	Digital Microfluidic Cell Culture. Annual Review of Biomedical Engineering, 2015, 17, 91-112.	12.3	65
48	Dynamic Fluoroalkyl Polyethylene Glycol Coâ€Polymers: A New Strategy for Reducing Protein Adhesion in Labâ€onâ€aâ€Chip Devices. Advanced Functional Materials, 2015, 25, 506-515.	14.9	25
49	A digital microfluidic device with integrated nanostructured microelectrodes for electrochemical immunoassays. Lab on A Chip, 2015, 15, 3776-3784.	6.0	58
50	A guiding light: spectroscopy on digital microfluidic devices using in-plane optical fibre waveguides. Analytical and Bioanalytical Chemistry, 2015, 407, 7467-7475.	3.7	23
51	Digital microfluidic immunocytochemistry in single cells. Nature Communications, 2015, 6, 7513.	12.8	98
52	Electrochemistry, biosensors and microfluidics: a convergence of fields. Chemical Society Reviews, 2015, 44, 5320-5340.	38.1	279
53	Attractive Design: An Elution Solvent Optimization Platform for Magnetic-Bead-based Fractionation Using Digital Microfluidics and Design of Experiments. Analytical Chemistry, 2015, 87, 3902-3910.	6.5	26
54	A Microfluidic Technique for Quantification of Steroids in Core Needle Biopsies. Analytical Chemistry, 2015, 87, 4688-4695.	6.5	21

#	Article	IF	Citations
55	Next-Generation Microfluidic Point-of-Care Diagnostics. Clinical Chemistry, 2015, 61, 1233-1234.	3.2	16
56	Direct Interface between Digital Microfluidics and High Performance Liquid Chromatographyâ€“Mass Spectrometry. Analytical Chemistry, 2015, 87, 11967-11972.	6.5	20
57	Digital Microfluidic Platform for the Detection of Rubella Infection and Immunity: A Proof of Concept. Clinical Chemistry, 2015, 61, 420-429.	3.2	55
58	DStat: A Versatile, Open-Source Potentiostat for Electroanalysis and Integration. PLoS ONE, 2015, 10, e0140349.	2.5	157
59	Strong and small: strong cation-exchange solid-phase extractions using porous polymer monoliths on a digital microfluidic platform. Canadian Journal of Chemistry, 2014, 92, 179-185.	1.1	15
60	Multiplexed extraction and quantitative analysis of pharmaceuticals from DBS samples using digital microfluidics. Bioanalysis, 2014, 6, 307-318.	1.5	28
61	Paper Microfluidics Goes Digital. Advanced Materials, 2014, 26, 2838-2843.	21.0	109
62	Microgels on-demand. Nature Communications, 2014, 5, 3355.	12.8	80
63	A digital microfluidic electrochemical immunoassay. Lab on A Chip, 2014, 14, 547-554.	6.0	106
64	A droplet-based screen for wavelength-dependent lipid production in algae. Energy and Environmental Science, 2014, 7, 2366.	30.8	48
65	Digital Microfluidic Platform for Human Plasma Protein Depletion. Analytical Chemistry, 2014, 86, 8466-8472.	6.5	46
66	Hepatic organoids for microfluidic drug screening. Lab on A Chip, 2014, 14, 3290.	6.0	126
67	Analysis on the Go: Quantitation of Drugs of Abuse in Dried Urine with Digital Microfluidics and Miniature Mass Spectrometry. Analytical Chemistry, 2014, 86, 6121-6129.	6.5	67
68	Microfluidic origami: a new device format for in-line reaction monitoring by nanoelectrospray ionization mass spectrometry. Lab on A Chip, 2013, 13, 2533.	6.0	54
69	Integrated Digital Microfluidic Platform for Voltammetric Analysis. Analytical Chemistry, 2013, 85, 8809-8816.	6.5	48
70	Automated Digital Microfluidic Platform for Magnetic-Particle-Based Immunoassays with Optimization by Design of Experiments. Analytical Chemistry, 2013, 85, 9638-9646.	6.5	127
71	Lab on a chip Canada â€“ rapid diffusion over large length scales. Lab on A Chip, 2013, 13, 2438.	6.0	1
72	A digital microfluidic control system with precise control of electrostatic force and impedance-based velocity measurement. , 2013, , .		0

#	Article	IF	Citations
73	A 3D microfluidic platform incorporating methacrylated gelatin hydrogels to study physiological cardiovascular cellâ€“cell interactions. Lab on A Chip, 2013, 13, 2591.	6.0	126
74	Digital microfluidics with impedance sensing for integrated cell culture andanalysis. Biosensors and Bioelectronics, 2013, 42, 314-320.	10.1	101
75	Cellular bias on the microscale: probing the effects of digital microfluidic actuation on mammalian cell health, fitness and phenotype. Integrative Biology (United Kingdom), 2013, 5, 1014.	1.3	29
76	Digital Microfluidics: An Emerging Sample Preparation Platform for Mass Spectrometry. Analytical Chemistry, 2013, 85, 6178-6184.	6.5	64
77	DropBot: An open-source digital microfluidic control system with precise control of electrostatic driving force and instantaneous drop velocity measurement. Applied Physics Letters, 2013, 102, .	3.3	173
78	Mission impossible to mission control. Lab on A Chip, 2012, 12, 3851.	6.0	2
79	Combinatorial Synthesis of Peptidomimetics Using Digital Microfluidics. Journal of Flow Chemistry, 2012, 2, 103-107.	1.9	28
80	Dried Blood Spot Analysis by Digital Microfluidics Coupled to Nanoelectrospray Ionization Mass Spectrometry. Analytical Chemistry, 2012, 84, 3731-3738.	6.5	109
81	Digital Microfluidics. Annual Review of Analytical Chemistry, 2012, 5, 413-440.	5.4	664
82	Hydrogel discs for digital microfluidics. Biomicrofluidics, 2012, 6, 14112-1411211.	2.4	36
83	A digital microfluidic platform for primary cell culture and analysis. Lab on A Chip, 2012, 12, 369-375.	6.0	89
84	Virtual microwells for three-dimensional cell culture on a digital microfluidic platform. , 2012, , .		0
85	Digital Microfluidic Magnetic Separation for Particle-Based Immunoassays. Analytical Chemistry, 2012, 84, 8805-8812.	6.5	167
86	A digital microfluidic method for multiplexed cell-based apoptosis assays. Lab on A Chip, 2012, 12, 627-634.	6.0	90
87	Virtual microwells for digital microfluidic reagent dispensing and cell culture. Lab on A Chip, 2012, 12, 750-757.	6.0	75
88	Digital microfluidic hydrogel microreactors for proteomics. Proteomics, 2012, 12, 1310-1318.	2.2	63
89	A feedback control system for high-fidelity digital microfluidics. Lab on A Chip, 2011, 11, 535-540.	6.0	86
90	A New Angle on Pluronic Additives: Advancing Droplets and Understanding in Digital Microfluidics. Langmuir, 2011, 27, 8586-8594.	3.5	95

#	Article	IF	Citations
91	A Digital Microfluidic Method for in Situ Formation of Porous Polymer Monoliths with Application to Solid-Phase Extraction. Analytical Chemistry, 2011, 83, 3824-3830.	6.5	59
92	A digital microfluidic method for dried blood spot analysis. Lab on A Chip, 2011, 11, 3218.	6.0	104
93	A switchable digital microfluidic droplet dye-laser. Lab on A Chip, 2011, 11, 3716.	6.0	34
94	Integrated microbioreactor for culture and analysis of bacteria, algae and yeast. Biomedical Microdevices, 2011, 13, 41-50.	2.8	154
95	A digital microfluidic approach to heterogeneous immunoassays. Analytical and Bioanalytical Chemistry, 2011, 399, 337-345.	3.7	70
96	A microfluidic membrane device to mimic critical components of the vascular microenvironment. Biomicrofluidics, 2011, 5, 13409.	2.4	59
97	Immunoassays in microfluidic systems. Analytical and Bioanalytical Chemistry, 2010, 397, 991-1007.	3.7	307
98	Innentitelbild: Synchronized Synthesis of Peptide-Based Macrocycles by Digital Microfluidics (Angew.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	2.8	0
99	Synchronized Synthesis of Peptideâ€Based Macrocycles by Digital Microfluidics. Angewandte Chemie - International Edition, 2010, 49, 8625-8629.	13.8	92
100	Inside Cover: Synchronized Synthesis of Peptide-Based Macrocycles by Digital Microfluidics (Angew.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	13.8	0
101	Durable, region-specific protein patterning in microfluidic channels. Biomaterials, 2010, 31, 315-320.	11.4	36
102	A circular cross-section PDMS microfluidics system for replication of cardiovascular flow conditions. Biomaterials, 2010, 31, 3459-3464.	11.4	143
103	Let's get digital: digitizing chemical biology with microfluidics. Current Opinion in Chemical Biology, 2010, 14, 574-581.	6.1	94
104	Folded emitters for nanoelectrospray ionization mass spectrometry. Rapid Communications in Mass Spectrometry, 2010, 24, 3425-3431.	1.5	16
105	Multilayer Hybrid Microfluidics: A Digital-to-Channel Interface for Sample Processing and Separations. Analytical Chemistry, 2010, 82, 6680-6686.	6.5	55
106	Technique for Real-Time Measurements of Endothelial Permeability in a Microfluidic Membrane Chip Using Laser-Induced Fluorescence Detection. Analytical Chemistry, 2010, 82, 808-816.	6.5	86
107	Intimidating yet Inspiring: Emerging Investigators special issue. Lab on A Chip, 2010, 10, 2321.	6.0	0
108	A microfluidic platform for complete mammalian cell culture. Lab on A Chip, 2010, 10, 1536.	6.0	326

#	Article	IF	Citations
109	Droplet-Scale Estrogen Assays in Breast Tissue, Blood, and Serum. Science Translational Medicine, 2009, 1, 1ra2.	12.4	88
110	The Digital Revolution: A New Paradigm for Microfluidics. Advanced Materials, 2009, 21, 920-925.	21.0	365
111	Digital bioanalysis. Analytical and Bioanalytical Chemistry, 2009, 393, 419-426.	3.7	68
112	Gradient Elution in Microchannel Electrochromatography. Analytical Chemistry, 2009, 81, 3851-3857.	6.5	12
113	A World-to-Chip Interface for Digital Microfluidics. Analytical Chemistry, 2009, 81, 1061-1067.	6.5	72
114	Optimization of device geometry in single-plate digital microfluidics. Journal of Applied Physics, 2009, 105, .	2.5	71
115	Digital Microfluidic Method for Protein Extraction by Precipitation. Analytical Chemistry, 2009, 81, 330-335.	6.5	95
116	A Digital Microfluidic Approach to Proteomic Sample Processing. Analytical Chemistry, 2009, 81, 4524-4530.	6.5	97
117	Hybrid microfluidics: A digital-to-channel interface for in-line sample processing and chemical separations. Lab on A Chip, 2009, 9, 1046.	6.0	111
118	Augmenting microgel flow viareceptor-ligand binding in the constrained geometries of microchannels. Lab on A Chip, 2009, 9, 286-290.	6.0	16
119	Digital Microfluidics for Automated Proteomic Processing. Journal of Visualized Experiments, 2009, , .	0.3	17
120	Low-cost, rapid-prototyping of digital microfluidics devices. Microfluidics and Nanofluidics, 2008, 4, 349-355.	2.2	108
121	A practical interface for microfluidics and nanoelectrospray mass spectrometry. Electrophoresis, 2008, 29, 1836-1843.	2.4	31
122	Digital microfluidics for cell-based assays. Lab on A Chip, 2008, 8, 519.	6.0	292
123	Soft lithography: masters on demand. Lab on A Chip, 2008, 8, 1379.	6.0	72
124	All-terrain droplet actuation. Lab on A Chip, 2008, 8, 672.	6.0	158
125	A Digital Microfluidic Approach to Homogeneous Enzyme Assays. Analytical Chemistry, 2008, 80, 1614-1619.	6.5	151
126	Pluronic Additives: A Solution to Sticky Problems in Digital Microfluidics. Langmuir, 2008, 24, 6382-6389.	3.5	242

#	Article	IF	Citations
127	Putting Electrowetting to Work. Science, 2008, 322, 539-540.	12.6	324
128	3D Droplet Actuation in Digital Microfluidics Devices. , 2007, , .		2
129	Matrix-dependent adhesion of vascular and valvular endothelial cells in microfluidic channels. Lab on A Chip, 2007, 7, 1759.	6.0	139
130	Flow of microgel capsules through topographically patterned microchannels. Lab on A Chip, 2007, 7, 863.	6.0	31
131	Maze exploration and learning in C. elegans. Lab on A Chip, 2007, 7, 186-192.	6.0	134
132	Rapid Prototyping in Copper Substrates for Digital Microfluidics. Advanced Materials, 2007, 19, 133-137.	21.0	91
133	Microcontact Printing-Based Fabrication of Digital Microfluidic Devices. Analytical Chemistry, 2006, 78, 7877-7885.	6.5	37
134	Proteome-on-a-chip: Mirage, or on the horizon?. Lab on A Chip, 2006, 6, 1415.	6.0	121
135	Droplet-based microfluidics with nonaqueous solvents and solutions. Lab on A Chip, 2006, 6, 199.	6.0	220
136	Bio-Microarray Fabrication Techniquesâ€"A Review. Critical Reviews in Biotechnology, 2006, 26, 237-259.	9.0	334
137	An integrated digital microfluidic chip for multiplexed proteomic sample preparation and analysis by MALDI-MS. Lab on A Chip, 2006, 6, 1213.	6.0	266
138	Digital Microfluidics with In-Line Sample Purification for Proteomics Analyses with MALDI-MS. Analytical Chemistry, 2005, 77, 534-540.	6.5	301
139	Chemical cytometry on a picoliter-scale integrated microfluidic chip. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 12809-12813.	7.1	232
140	Poly(dimethylsiloxane) microfluidic flow cells for surface plasmon resonance spectroscopy. Sensors and Actuators B: Chemical, 2004, 98, 208-214.	7.8	32
141	Electroosmotic flow in a poly(dimethylsiloxane) channel does not depend on percent curing agent. Electrophoresis, 2004, 25, 1120-1124.	2.4	32
142	Electrowetting-Based Microfluidics for Analysis of Peptides and Proteins by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry. Analytical Chemistry, 2004, 76, 4833-4838.	6.5	295
143	Flow Injection Analysis in a Microfluidic Format. Analytical Chemistry, 2003, 75, 967-972.	6.5	78
144	Microfluidic Device for Single-Cell Analysis. Analytical Chemistry, 2003, 75, 3581-3586.	6.5	545

#	Article	IF	Citations
145	Programmable modification of cell adhesion and zeta potential in silica microchips. Lab on A Chip, 2003, 3, 5.	6.0	79
146	A Laser-Polymerized Thin Film Silica Surface Modification for Suppression of Cell Adhesion and Electroosmotic Flow in Microchannels. , 2001, , 605-606.		0
147	Single Organelle Analysis with Integrated Chip Electrophoresis and Optical Tweezers. , 2000, , 25-28.		3
148	Influence of light pattern thickness on the manipulation of dielectric microparticles by optoelectronic tweezers. Photonics Research, 0, , .	7.0	6