Jaap M J Den Toonder

List of Publications by Year
in descending order

80 papers	3,395 citations	117453 34 h-index	149479 56 g-index
83 all docs	83 docs citations	83 times ranked	3689 citing authors

#	Article	IF	Citations
1	Artificial cilia for active micro-fluidic mixing. Lab on A Chip, 2008, 8, 533.	3.1	250
2	Integrated lab-on-chip biosensing systems based on magnetic particle actuation â€“ a comprehensive review. Lab on A Chip, 2014, 14, 1966-1986.	3.1	219
3	Photoâ€Switchable Surface Topologies in Chiral Nematic Coatings. Angewandte Chemie - International Edition, 2012, 51, 892-896.	7.2	158
4	Magnetically-actuated artificial cilia for microfluidic propulsion. Lab on A Chip, 2011, 11, 2002.	3.1	147
5	Microfluidic manipulation with artificial/bioinspired cilia. Trends in Biotechnology, 2013, 31, 85-91.	4.9	138
6	Circulating tumor cells: the Grand Challenge. Lab on A Chip, 2011, 11, 375.	3.1	130
7	A Soft Transporter Robot Fueled by Light. Advanced Science, 2020, 7, 1902842.	5.6	112
8	Light-Induced Formation of Dynamic and Permanent Surface Topologies in Chiralâ€“Nematic Polymer Networks. Macromolecules, 2012, 45, 8005-8012.	2.2	101
9	Active micromixer based on artificial cilia. Physics of Fluids, 2007, 19, .	1.6	99
10	Metastasis in context: modeling the tumor microenvironment with cancer-on-a-chip approaches. DMM Disease Models and Mechanisms, 2018, 11, .	1.2	98
11	A biomimetic microfluidic model to study signalling between endothelial and vascular smooth muscle cells under hemodynamic conditions. Lab on A Chip, 2018, 18, 1607-1620.	3.1	88
12	Numerical and experimental study of a rotating magnetic particle chain in a viscous fluid. Physical Review E, 2012, 86, 041503.	0.8	87
13	Microfluidic propulsion by the metachronal beating of magnetic artificial cilia: a numerical analysis. Journal of Fluid Mechanics, 2011, 688, 44-65.	1.4	76
14	Nature-inspired microfluidic propulsion using magnetic actuation. Physical Review E, 2009, 79, 046304.	0.8	74
15	Microfluidic Magnetic Mixing at Low Reynolds Numbers and in Stagnant Fluids. Micromachines, 2019, 10, 731.	1.4	64
16	Versatile microfluidic flow generated by moulded magnetic artificial cilia. Sensors and Actuators B: Chemical, 2018, 263, 614-624.	4.0	62
17	Out of the cleanroom, self-assembled magnetic artificial cilia. Lab on A Chip, 2013, 13, 3360.	3.1	58
18	A concise review of microfluidic particle manipulation methods. Microfluidics and Nanofluidics, 2020, 24, 1.	1.0	54

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19	Wearable sweat sensing for prolonged, semicontinuous, and nonobtrusive health monitoring. View, 2020, 1, 20200077.	2.7	53
20	Conventional glaucoma implants and the new MIGS devices: a comprehensive review of current options and future directions. Eye, 2021, 35, 3202-3221.	1.1	52
21	Breaking of symmetry in microfluidic propulsion driven by artificial cilia. Physical Review E, 2010, 82, 027302.	0.8	50
22	Disaggregation of microparticle clusters by induced magnetic dipoleâ€“dipole repulsion near a surface. Lab on A Chip, 2013, 13, 1394.	3.1	50
23	Inertial flow effects in a micro-mixer based on artificial cilia. Lab on A Chip, 2009, 9, 2326.	3.1	44
24	Artificial cilia fabricated using magnetic fiber drawing generate substantial fluid flow. Microfluidics and Nanofluidics, 2015, 18, 167-174.	1.0	43
25	Fluid flow due to collective non-reciprocal motion of symmetrically-beating artificial cilia. Biomicrofluidics, 2012, 6, 14106-1410614.	1.2	42
26	Organs on Chips 2013. Lab on A Chip, 2013, 13, 3447.	3.1	40
27	Anti-Biofouling and Self-Cleaning Surfaces Featured with Magnetic Artificial Cilia. ACS Applied Materials & Interfaces, 2020, 12, 27726-27736.	4.0	40
28	A continuous roll-pulling approach for the fabrication of magnetic artificial cilia with microfluidic pumping capability. Lab on A Chip, 2016, 16, 2277-2286.	3.1	39
29	Removal of Microparticles by Ciliated Surfacesâ€"an Experimental Study. Advanced Functional Materials, 2019, 29, 1806434.	7.8	39
30	Controlled Multidirectional Particle Transportation by Magnetic Artificial Cilia. ACS Nano, 2020, 14, 10313-10323.	7.3	39
31	Sorting algal cells by morphology in spiral microchannels using inertial microfluidics. Microfluidics and Nanofluidics, 2016, 20, 1.	1.0	37
32	Metachronal actuation of microscopic magnetic artificial cilia generates strong microfluidic pumping. Lab on A Chip, 2020, 20, 3569-3581.	3.1	37
33	Recapitulating the Vasculature Using Organ-On-Chip Technology. Bioengineering, 2020, 7, 17.	1.6	37
34	Chaotic fluid mixing by alternating microparticle topologies to enhance biochemical reactions. Microfluidics and Nanofluidics, 2014, 16, 265-274.	1.0	36
35	An integrated flex-microfluidic-Si chip device towards sweat sensing applications. Sensors and Actuators B: Chemical, 2016, 227, 427-437.	4.0	35
36	Metachronal Î¼-Cilia for On-Chip Integrated Pumps and Climbing Robots. ACS Applied Materials & Interfaces, 2021, 13, 20845-20857.	4.0	34

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37	(Photo-)Thermally Induced Formation of Dynamic Surface Topographies in Polymer Hydrogel Networks. Langmuir, 2013, 29, 5622-5629.	1.6	32
38	An artificial aquatic polyp that wirelessly attracts, grasps, and releases objects. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 17571-17577.	3.3	32
39	Microscopic artificial cilia â€" a review. Lab on A Chip, 2022, 22, 1650-1679.	3.1	29
40	Dynamics of magnetic chains in a shear flow under the influence of a uniform magnetic field. Physics of Fluids, 2012, 24, .	1.6	28
41	Magnetically Actuated Artificial Cilia: The Effect of Fluid Inertia. Langmuir, 2012, 28, 7921-7937.	1.6	27
42	Single-composition three-dimensionally morphing hydrogels. Soft Matter, 2013, 9, 588-596.	1.2	27
43	Climbing droplets driven by mechanowetting on transverse waves. Science Advances, 2019, 5, eaaw0914.	4.7	26
44	MDA-MB-231 Breast Cancer Cells and Their CSC Population Migrate Towards Low Oxygen in a Microfluidic Gradient Device. International Journal of Molecular Sciences, 2018, 19, 3047.	1.8	24
45	Fluid propulsion using magnetically-actuated artificial cilia â€" experiments and simulations. RSC Advances, 2013, 3, 12735.	1.7	20
46	A novel method to understand tumor cell invasion: integrating extracellular matrix mimicking layers in microfluidic chips by â€œselective curingâ€. Biomedical Microdevices, 2017, 19, 92.	1.4	20
47	Stretchable broadband photo-sensor sheets for nonsampling, source-free, and label-free chemical monitoring by simple deformable wrapping. Science Advances, 2022, 8, eabm4349.	4.7	19
48	Advances in 3D neuronal cell culture. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2015, 33, .	0.6	18
49	Circulating Tumor Cells: What Is in It for the Patient? A Vision towards the Future. Cancers, 2014, 6, 1195-1207.	1.7	17
50	Microfluidic magnetic bead conveyor belt. Lab on A Chip, 2017, 17, 3826-3840.	3.1	17
51	Characterizing the invasion of different breast cancer cell lines with distinct E-cadherin status in 3D using a microfluidic system. Biomedical Microdevices, 2019, 21, 101.	1.4	17
52	Monocytic Cells Become Less Compressible but More Deformable upon Activation. PLoS ONE, 2014, 9, e92814.	1.1	17
53	Highly motile nanoscale magnetic artificial cilia. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	16
54	Transport and mixing by metachronal waves in nonreciprocal soft robotic pneumatic artificial cilia at low Reynolds numbers. Physics of Fluids, 2021, 33, .	1.6	16

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55	3D Sugar Printing of Networks Mimicking the Vasculature. Micromachines, 2020, 11, 43.	1.4	14
56	Enhanced Microfluidic Sample Homogeneity and Improved Antibody-Based Assay Kinetics Due to Magnetic Mixing. ACS Sensors, 2021, 6, 2553-2562.	4.0	14
57	Foil-to-Foil System Integration Through Capillary Self-Alignment Directed by Laser Patterning. Journal of Microelectromechanical Systems, 2015, 24, 126-133.	1.7	12
58	Accurate quantification of magnetic particle properties by intra-pair magnetophoresis for nanobiotechnology. Applied Physics Letters, 2013, 103, 043704.	1.5	11
59	A membrane-based microfluidic device for mechano-chemical cell manipulation. Biomedical Microdevices, 2016, 18, 31.	1.4	11
60	Dynamics of magnetic particles near a surface: Model and experiments on field-induced disaggregation. Physical Review E, 2014, 89, 042306.	0.8	8
61	Validation and Optimization of an Image-Based Screening Method Applied to the Study of Neuronal Processes on Nanogrooves. Frontiers in Cellular Neuroscience, 2018, 12, 415.	1.8	8
62	Enhancement of microalgae growth using magnetic artificial cilia. Biotechnology and Bioengineering, 2021, 118, 2472-2481.	1.7	7
63	Metachronal patterns by magnetically-programmable artificial cilia surfaces for low Reynolds number fluid transport and mixing. Soft Matter, 2022, 18, 3902-3909.	1.2	7
64	Capturing Essential Physiological Aspects of Interacting Cartilage and Bone Tissue with Osteoarthritis Pathophysiology: A Human Osteochondral Unitâ€ənâ€əâ€Chip Model. Advanced Materials Technologies, 2022, 7, .	3.0	7
65	Magnetic Artificial Cilia for Microfluidic Propulsion. Advances in Applied Mechanics, 2015, 48, 1-78.	1.4	6
66	A stirring system using suspended magnetically-actuated pillars for controlled cell clustering. Soft Matter, 2019, 15, 1435-1443.	1.2	5
67	Mechanowetting drives droplet and fluid transport on traveling surface waves generated by light-responsive liquid crystal polymers. Physics of Fluids, 2021, 33, .	1.6	5
68	Engineered modular microphysiological models of the human airway clearance phenomena. Biotechnology and Bioengineering, 2021, 118, 3898-3913.	1.7	5
69	Microfluidic slug transport on traveling-wave surface topographies by mechanowetting. Physical Review Fluids, 2020, 5, .	1.0	5
70	Magnetic bead mixing in a microfluidic chamber induced by an in-plane rotating magnetic field. Microfluidics and Nanofluidics, 2022, 26, 1.	1.0	5
71	Selfâ€Cleaning Surfaces Realized by Biologically Sized Magnetic Artificial Cilia. Advanced Materials Interfaces, 2022, 9, 2102016.	1.9	5
72	Magnetic interaction of Janus magnetic particles suspended in a viscous fluid. Physical Review E, 2016, 93, 022607.	0.8	4

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73	Influence Function Measurement Technique Using the Direct and Indirect Piezoelectric Effect for Surface Shape Control in Adaptive Systems. IEEE Transactions on Automation Science and Engineering, 2022, 19, 994-1002.	3.4	3
74	An integrated system for automated measurement of airborne pollen based on electrostatic enrichment and image analysis with machine vision. Talanta, 2022, 237, 122908.	2.9	2
75	In-vitro investigation of the relationship between microvascular structure and ultrasound contrast agent dynamics. , 2019, , .		1
76	Magnetically Actuated Glaucoma Drainage Device with Adjustable Flow Properties after Implantation. , 0, , .		1
77	A Prototype System With Custom-Designed RX ICs for Contrast-Enhanced Ultrasound Imaging. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 1649-1660.	1.7	1
78	Directional droplet transport on switchable ratchets by mechanowetting. Microfluidics and Nanofluidics, 2022, 26, 1.	1.0	1
79	One-Minute Wear-Rate Measurement. Macromolecular Rapid Communications, 2005, 26, 188-191.	2.0	0
80	Macromol. Rapid Commun. 1/2018. Macromolecular Rapid Communications, 2018, 39, 1870004.	2.0	0