

Wouter van der Wijngaart

List of Publications by Year in descending order

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142
papers

3,530
citations

147566

31
h-index

149479

56
g-index

146
all docs

146
docs citations

146
times ranked

4366
citing authors

#	ARTICLE	IF	CITATIONS
1	New materials for micro-scale sensors and actuators. <i>Materials Science and Engineering Reports</i> , 2007, 56, 1-129.	14.8	438
2	Beyond PDMS: off-stoichiometry thiol-ene (OSTE) based soft lithography for rapid prototyping of microfluidic devices. <i>Lab on A Chip</i> , 2011, 11, 3136.	3.1	260
3	A packaged optical slot-waveguide ring resonator sensor array for multiplex label-free assays in labs-on-chips. <i>Lab on A Chip</i> , 2010, 10, 281-290.	3.1	238
4	A valve-less diffuser micropump for microfluidic analytical systems. <i>Sensors and Actuators B: Chemical</i> , 2001, 72, 259-265.	4.0	193
5	Micromachined flow-through filter-chamber for chemical reactions on beads. <i>Sensors and Actuators B: Chemical</i> , 2000, 67, 203-208.	4.0	154
6	On-chip temperature compensation in an integrated slot-waveguide ring resonator refractive index sensor array. <i>Optics Express</i> , 2010, 18, 3226.	1.7	99
7	Hydrophobic valves of plasma deposited octafluorocyclobutane in DRIE channels. <i>Sensors and Actuators B: Chemical</i> , 2001, 75, 136-141.	4.0	94
8	Micromachined filter-chamber array with passive valves for biochemical assays on beads. <i>Electrophoresis</i> , 2001, 22, 249-257.	1.3	85
9	A fast passive and planar liquid sample micromixer. <i>Lab on A Chip</i> , 2004, 4, 214-219.	3.1	70
10	A high-stroke, high-pressure electrostatic actuator for valve applications. <i>Sensors and Actuators A: Physical</i> , 2002, 100, 264-271.	2.0	64
11	A liquid-triggered liquid microvalve for on-chip flow control. <i>Sensors and Actuators B: Chemical</i> , 2004, 100, 463-468.	4.0	63
12	Functional off-stoichiometry thiol-ene-epoxy thermosets featuring temporally controlled curing stages via an UV/UV dual cure process. <i>Journal of Polymer Science Part A</i> , 2014, 52, 2604-2615.	2.5	63
13	Synthetic microfluidic paper: high surface area and high porosity polymer micropillar arrays. <i>Lab on A Chip</i> , 2016, 16, 298-304.	3.1	60
14	Flexible and Stretchable Microneedle Patches with Integrated Rigid Stainless Steel Microneedles for Transdermal Biointerfacing. <i>PLoS ONE</i> , 2016, 11, e0166330.	1.1	59
15	Sustained Superhydrophobic Friction Reduction at High Liquid Pressures and Large Flows. <i>Langmuir</i> , 2011, 27, 487-493.	1.6	58
16	Light-Converting Polymer/Si Nanocrystal Composites with Stable 60-70% Quantum Efficiency and Their Glass Laminates. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 30267-30272.	4.0	57
17	Reaction injection molding and direct covalent bonding of OSTE+ polymer microfluidic devices. <i>Journal of Micromechanics and Microengineering</i> , 2015, 25, 075002.	1.5	51
18	Dry adhesive bonding of nanoporous inorganic membranes to microfluidic devices using the OSTE(+) dual-cure polymer. <i>Journal of Micromechanics and Microengineering</i> , 2013, 23, 025021.	1.5	50

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19	Inertial microfluidics in parallel channels for high-throughput applications. <i>Lab on A Chip</i> , 2012, 12, 4644.	3.1	49
20	Single-Step Imprinting of Femtoliter Microwell Arrays Allows Digital Bioassays with Attomolar Limit of Detection. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 10418-10426.	4.0	48
21	Structuring of Functional Spider Silk Wires, Coatings, and Sheets by Self-Assembly on Superhydrophobic Pillar Surfaces. <i>Advanced Materials</i> , 2018, 30, 1704325.	11.1	46
22	Sampling and detection of airborne influenza virus towards point-of-care applications. <i>PLoS ONE</i> , 2017, 12, e0174314.	1.1	44
23	Modeling and simulation of electrostatically gated nanochannels. <i>Advances in Colloid and Interface Science</i> , 2013, 199-200, 78-94.	7.0	42
24	Pt-Al ₂ O ₃ dual layer atomic layer deposition coating in high aspect ratio nanopores. <i>Nanotechnology</i> , 2013, 24, 015602.	1.3	42
25	Behaviour and design considerations for continuous flow closed-open-closed liquid microchannels. <i>Lab on A Chip</i> , 2005, 5, 682.	3.1	40
26	Active liquid degassing in microfluidic systems. <i>Lab on A Chip</i> , 2013, 13, 4366.	3.1	38
27	A High-Yield Process for 3-D Large-Scale Integrated Microfluidic Networks in PDMS. <i>Journal of Microelectromechanical Systems</i> , 2010, 19, 1050-1057.	1.7	37
28	Biocompatible click-wafer bonding for microfluidic devices. <i>Lab on A Chip</i> , 2012, 12, 3032.	3.1	37
29	Aerosol sampling using an electrostatic precipitator integrated with a microfluidic interface. <i>Sensors and Actuators B: Chemical</i> , 2015, 212, 344-352.	4.0	36
30	E-Beam Nanostructuring and Direct Click Biofunctionalization of Thiolene Resist. <i>ACS Nano</i> , 2018, 12, 9940-9946.	7.3	36
31	Synthetic Paper Separates Plasma from Whole Blood with Low Protein Loss. <i>Analytical Chemistry</i> , 2020, 92, 6194-6199.	3.2	35
32	A micromachined interface for airborne sample-to-liquid transfer and its application in a biosensor system. <i>Lab on A Chip</i> , 2006, 6, 1504-1509.	3.1	31
33	Adhesive copper films for an air-breathing polymer electrolyte fuel cell. <i>Journal of Power Sources</i> , 2005, 144, 113-121.	4.0	28
34	Capillary pumping independent of the liquid surface energy and viscosity. <i>Microsystems and Nanoengineering</i> , 2018, 4, 2.	3.4	27
35	Wafer-Scale Manufacturing of Bulk Shape-Memory-Alloy Microactuators Based on Adhesive Bonding of Titanium-Nickel Sheets to Structured Silicon Wafers. <i>Journal of Microelectromechanical Systems</i> , 2009, 18, 1309-1317.	1.7	26
36	Direct detection of small molecules using a nano-molecular imprinted polymer receptor and a quartz crystal resonator driven at a fixed frequency and amplitude. <i>Biosensors and Bioelectronics</i> , 2020, 158, 112176.	5.3	26

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37	Fabrication and transfer of fragile 3D PDMS microstructures. <i>Journal of Micromechanics and Microengineering</i> , 2012, 22, 085009.	1.5	25
38	Rapid mold-free manufacturing of microfluidic devices with robust and spatially directed surface modifications. <i>Microfluidics and Nanofluidics</i> , 2014, 17, 773-779.	1.0	24
39	Recombinant Spider Silk Forms Tough and Elastic Nanomembranes that are Protein-Permeable and Support Cell Attachment and Growth. <i>Advanced Functional Materials</i> , 2020, 30, 2002982.	7.8	24
40	A Low-Temperature Thermopneumatic Actuation Principle for Gas Bubble Microvalves. <i>Journal of Microelectromechanical Systems</i> , 2007, 16, 765-774.	1.7	22
41	SMA Microvalves for Very Large Gas Flow Control Manufactured Using Wafer-Level Eutectic Bonding. <i>IEEE Transactions on Industrial Electronics</i> , 2012, 59, 4895-4906.	5.2	21
42	Off-line integration of CE and MALDI-MS using a closed-open-closed microchannel system. <i>Electrophoresis</i> , 2007, 28, 2458-2465.	1.3	19
43	Thiol-ene epoxy thermoset for low-temperature bonding to biofunctionalized microarray surfaces. <i>Lab on A Chip</i> , 2017, 17, 3672-3681.	3.1	19
44	Digital dipstick: miniaturized bacteria detection and digital quantification for the point-of-care. <i>Lab on A Chip</i> , 2020, 20, 4349-4356.	3.1	19
45	Immunoassays on thiol-ene synthetic paper generate a superior fluorescence signal. <i>Biosensors and Bioelectronics</i> , 2020, 163, 112279.	5.3	19
46	An integrated QCM-based narcotics sensing microsystem. <i>Lab on A Chip</i> , 2008, 8, 1648.	3.1	17
47	Capillary Pumping Independent of Liquid Sample Viscosity. <i>Langmuir</i> , 2016, 32, 12650-12655.	1.6	17
48	Fluid interfacial energy drives the emergence of three-dimensional periodic structures in micropillar scaffolds. <i>Nature Physics</i> , 2021, 17, 794-800.	6.5	17
49	Simple and ultrafast resonance frequency and dissipation shift measurements using a fixed frequency drive. <i>Sensors and Actuators B: Chemical</i> , 2019, 281, 960-970.	4.0	16
50	A compact, low-cost microliter-range liquid dispenser based on expandable microspheres. <i>Journal of Micromechanics and Microengineering</i> , 2006, 16, 2740-2746.	1.5	15
51	Reaction injection molding of hydrophilic-in-hydrophobic femtolitre-well arrays. <i>Microsystems and Nanoengineering</i> , 2019, 5, 25.	3.4	15
52	Fibrillar Nanomembranes of Recombinant Spider Silk Protein Support Cell Co-culture in an <i>In Vitro</i> Blood Vessel Wall Model. <i>ACS Biomaterials Science and Engineering</i> , 2021, 7, 3332-3339.	2.6	15
53	Design and Wafer-Level Fabrication of SMA Wire Microactuators on Silicon. <i>Journal of Microelectromechanical Systems</i> , 2010, 19, 982-991.	1.7	14
54	A seat microvalve nozzle for optimal gas-flow capacity at large-controlled pressure. <i>Journal of Microelectromechanical Systems</i> , 2005, 14, 200-206.	1.7	13

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55	Leak-tight vertical membrane microvalves. Lab on A Chip, 2016, 16, 1439-1446.	3.1	13
56	A comparative study of the bonding energy in adhesive wafer bonding. Journal of Micromechanics and Microengineering, 2013, 23, 085019.	1.5	12
57	Off-stoichiometry improves the photostructuring of thiolâ€œenes through diffusion-induced monomer depletion. Microsystems and Nanoengineering, 2016, 2, 15043.	3.4	12
58	Human Cell Encapsulation in Gel Microbeads with Cosynthesized Concentric Nanoporous Solid Shells. Advanced Functional Materials, 2018, 28, 1707129.	7.8	12
59	Droplet Impact on Asymmetric Hydrophobic Microstructures. Langmuir, 2022, 38, 7956-7964.	1.6	12
60	Integration of microfluidics with grating coupled silicon photonic sensors by one-step combined photopatterning and molding of OSTE. Optics Express, 2013, 21, 21293.	1.7	11
61	Robust actuation of silicon MEMS using SMA wires integrated at wafer-level by nickel electroplating. Sensors and Actuators A: Physical, 2013, 189, 108-116.	2.0	10
62	OSTE: a novel polymer system developed for Lab-on-Chip. Proceedings of SPIE, 2014, , .	0.8	9
63	Low gas permeable and non-absorbent rubbery OSTE+ for pneumatic microvalves. , 2014, , .		9
64	Simultaneous Replication of Hydrophilic and Superhydrophobic Micropatterns through Areaâ€œSelective Monomers Selfâ€œAssembly. Advanced Materials Interfaces, 2016, 3, 1600404.	1.9	9
65	Efficient DNA-assisted synthesis of trans-membrane gold nanowires. Microsystems and Nanoengineering, 2018, 4, .	3.4	9
66	Droplet Impact on Surfaces with Asymmetric Microscopic Features. Langmuir, 2021, 37, 10849-10858.	1.6	9
67	Microchannels with Substantial Friction Reduction at Large Pressure and Large Flow. , 2009, , .		8
68	A low-power high-flow shape memory alloy wire gas microvalve. Journal of Micromechanics and Microengineering, 2012, 22, 075002.	1.5	8
69	Out-of-Plane Knife-Gate Microvalves for Controlling Large Gas Flows. Journal of Microelectromechanical Systems, 2006, 15, 1281-1288.	1.7	7
70	Continuous flow switching by pneumatic actuation of the air lubrication layer on superhydrophobic microchannel walls. Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 2008, , .	0.0	7
71	Localized removal of the Auâ€œSi eutectic bonding layer for the selective release of microstructures. Journal of Micromechanics and Microengineering, 2009, 19, 105014.	1.5	7
72	Fabrication of large-scale monocrystalline silicon micro-mirror arrays using adhesive wafer transfer bonding. , 2009, , .		7

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73	PCR on a PDMS-based microchip with integrated bubble removal. , 2011, , .		7
74	The Influence of Air Flow Velocity and Particle Size on the Collection Efficiency of Passive Electrostatic Aerosol Samplers. Aerosol and Air Quality Research, 2019, 19, 195-203.	0.9	7
75	Facile Nanoimprinting of Robust High-Aspect-Ratio Nanostructures for Human Cell Biomechanics. ACS Applied Bio Materials, 2020, 3, 8757-8767.	2.3	7
76	Direct detection of whole bacteria using a nonlinear acoustic resonator. Sensors and Actuators B: Chemical, 2020, 316, 128086.	4.0	7
77	Fluid dynamic behavior of dispensing small droplets through a thin liquid film. Microfluidics and Nanofluidics, 2010, 9, 303-311.	1.0	6
78	Wire-bonder-assisted integration of non-bondable SMA wires into MEMS substrates. Journal of Micromechanics and Microengineering, 2012, 22, 055025.	1.5	6
79	Dry transfer bonding of porous silicon membranes to OSTE(+) polymer microfluidic devices. , 2012, , .		6
80	Surface energy micropattern inheritance from mold to replica. , 2014, , .		6
81	Batch fabrication of polymer microfluidic cartridges for QCM sensor packaging by direct bonding. Journal of Micromechanics and Microengineering, 2017, 27, 124001.	1.5	6
82	Micromachined Flow-through Filter-Chamber for Solid Phase DNA Analysis. , 2000, , 473-476.		6
83	Wafer-level mechanical and electrical integration of SMA wires to silicon MEMS using electroplating. , 2011, , .		5
84	Electrostatic gating of ion and molecule transport through a nanochannel-array membrane. , 2011, , .		5
85	Inertial particle focusing in parallel microfluidic channels for high-throughput filtration. , 2011, , .		5
86	Low-stress transfer bonding using floatation. Journal of Micromechanics and Microengineering, 2012, 22, 075005.	1.5	5
87	Droplet leaping governs microstructured surface wetting. Soft Matter, 2019, 15, 9528-9536.	1.2	5
88	Electrostatic Sampling of Patient Breath for Pathogen Detection: A Pilot Study. Frontiers in Mechanical Engineering, 2020, 6, .	0.8	5
89	A micromachined knife gate valve for high-flow pressure regulation applications. , 0, , .		4
90	Large scale integrated 3D microfluidic networks through high yield fabrication of vertical vias in PDMS. , 2010, , .		4

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91	One step integration of gold coated sensors with OSTE polymer cartridges by low temperature dry bonding. , 2011, , .		4
92	A polymer neural probe with tunable flexibility. , 2013, , .		4
93	Droplet microfluidics inside paper. , 2018, , .		4
94	A micropneumatic-to-vibration energy converter concept. Sensors and Actuators A: Physical, 2002, 100, 77-83.	2.0	3
95	Small footprint knife gate microvalves for large flow control. , 0, , .		3
96	Electrohydrodynamic enhanced transport and trapping of airborne particles to a microfluidic air-liquid interface. Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 2008, , .	0.0	3
97	Full wafer integration of shape memory alloy microactuators using adhesive bonding. , 2009, , .		3
98	Wafer-level integration of NiTi shape memory alloy on silicon using Au-Si eutectic bonding. Journal of Micromechanics and Microengineering, 2013, 23, 015008.	1.5	3
99	Microfluidic system for the identification of bacterial pathogens causing urinary tract infections. , 2015, , .		3
100	Electro-optical effects of high aspect ratio P3HT nanofibers colloid in polymer micro-fluid cells. Optics Letters, 2017, 42, 2157.	1.7	3
101	Beads in Biochemical Microfluidics. , 2002, , 605-607.		3
102	A liquid-triggered liquid microvalve. , 0, , .		2
103	Fast narcotics and explosives detection using a microfluidic sample interface. , 0, , .		2
104	A miniaturised integrated QCM-based electronic nose microsystem. , 2007, , .		2
105	Low-stress wafer-level transfer bonding of polymer layers using floatation. , 2011, , .		2
106	Robust microdevice manufacturing by direct lithography and adhesive-free bonding of off-stoichiometry thiol-ene-epoxy (OSTE) polymer. , 2013, , .		2
107	Integration of polymer microfluidic channels, vias, and connectors with silicon photonic sensors by one-step combined photopatterning and molding of OSTE. , 2013, , .		2
108	Vertical membrane microvalves in PDMS. , 2015, , .		2

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109	Single-step manufacturing of femtoliter microwell arrays in a novel surface energy mimicking polymer. , 2015, , .		2
110	Ultrarapid synthesis of microbeads with tuneable surface probe density. , 2016, , .		2
111	NANORIM: Sub-micron structuring with reaction injection molding. , 2017, , .		2
112	Capillary pumping with a constant flow rate independent of the liquid sample viscosity and surface energy. , 2017, , .		2
113	Polymer nanoliter well arrays for liquid storage and rapid on-demand electrochemical release. Sensors and Actuators B: Chemical, 2018, 267, 111-118.	4.0	2
114	Characterisation of particle-surface interactions via anharmonic acoustic transduction. Sensors and Actuators B: Chemical, 2018, 272, 175-184.	4.0	2
115	"Bend-and-Bond" Polymer Microfluidic Origami. , 2021, , .		2
116	Detection of Single Nucleotide Incorporation Using Pyrosequencing in a Microfluidic Device. , 2002, , 308-310.		2
117	Handling of beads in microfluidic devices for biotech applications. , 2003, , 187-204.		1
118	A micromachined interface for transfer of liquid or vapour sample to a liquid solution. , 0, , .		1
119	Selective electrochemical release etching of eutectically bonded microstructures. , 2009, , .		1
120	Ligation-based mutation detection and RCA in surface un-modified OSTE+ polymer microfluidic chambers. , 2013, , .		1
121	Synthetic microfluidic paper. , 2015, , .		1
122	Rapid manufacturing of OSTE polymer RF-MEMS components. , 2017, , .		1
123	Tuneable Microparticle Filters. , 2019, , .		1
124	A loopâ€shaped minimally invasive brush for improved cytology sampling of pancreatic cysts during EUSâ€FNA. Medical Devices & Sensors, 2021, 4, e10165.	2.7	1
125	The Influence of Substrate Microstructures on the Fluorescent Intensity Profile, Size, Roundness, and Coffee Ring Ratio of Protein Microarray Spots. , 2022, , .		1
126	Robust Trimorph Bulk SMA Microactuators for Batch Manufacturing and Integration. , 2007, , .		0

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127	Microfluidic and transducer technologies for lab on a chip applications. , 2010, 2010, 305-7.		0
128	Awafer-level, heterogeneously integrated, high flow SMA-silicon gas microvalve. , 2011, , .		0
129	Low temperature adhesive wafer bonding using OSTE(+) for heterogeneous 3D MEMS integration. , 2013, , .		0
130	Capillary pumps with constant flow rate. Microfluidics and Nanofluidics, 2014, 16, 829.	1.0	0
131	Core-shell microparticle synthesis in droplet microfluidics using a single step polymerization. , 2015, , .		0
132	Capillary driven and volume-metred blood-plasma separation. , 2015, , .		0
133	Letter from the chairs. , 2015, , .		0
134	Surface Energy Mimicking: Simultaneous Replication of Hydrophilic and Superhydrophobic Micropatterns through Area-Selective Monomers Self-Assembly (Adv. Mater. Interfaces 17(2016). Advanced Materials Interfaces, 2016, 3, .	1.9	0
135	Detection of E.coli in a digital assay. , 2018, , .		0
136	Formation of a thin-walled spider silk tube on a micromachined scaffold. , 2018, , .		0
137	Stacking 2D Droplet Arrays for 3D Configurable Droplet Network. , 2019, , .		0
138	An Ultraminiaturized MEMS Microbiopsy Tool for Trans Blood Vessel Wall Biopsies. , 2020, , .		0
139	Quantitative Glucose Measurement on a Synthetic Paper Test Strip. , 2021, , .		0
140	Multidirectional Lithography of Cell-Laden Hydrogels. , 2021, , .		0
141	Numerical Simulation of the Passage of Small Liquid Droplets Through a Thin Liquid Film. , 2008, , .		0
142	Slip-X-Chip: A Sliding Microfluidic Platform with Cross-Flow. , 2022, , .		0