Roland Zengerle

List of Publications by Year in descending order

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142 papers

9,892 citations

45 h-index 96 g-index

148 all docs

148
docs citations

148 times ranked 13470 citing authors

#	Article	IF	Citations
1	Mechanical properties of polycaprolactone (PCL) scaffolds for hybrid 3D-bioprinting with alginate-gelatin hydrogel. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 130, 105219.	1.5	14
2	Microfluidic One-Pot Digital Droplet FISH Using LNA/DNA Molecular Beacons for Bacteria Detection and Absolute Quantification. Biosensors, 2022, 12, 237.	2.3	3
3	The MRD disk: automated minimal residual disease monitoring by highly sensitive centrifugal microfluidic multiplex qPCR. Lab on A Chip, 2021, 21, 558-570.	3.1	1
4	A microfluidic cartridge for fast and accurate diagnosis of <i>Mycobacterium tuberculosis</i> infections on standard laboratory equipment. Lab on A Chip, 2021, 21, 1540-1548.	3.1	20
5	Characterization of CRISPR/Cas9 RANKL knockout mesenchymal stem cell clones based on single-cell printing technology and Emulsion Coupling assay as a low-cellularity workflow for single-cell cloning. PLoS ONE, 2021, 16, e0238330.	1.1	5
6	Scalable fabrication of renal spheroids and nephron-like tubules by bioprinting and controlled self-assembly of epithelial cells. Biofabrication, 2021, 13, 035019.	3.7	22
7	One-step, wash-free, bead-based immunoassay employing bound-free phase detection. Analytica Chimica Acta, 2021, 1153, 338280.	2.6	14
8	Blocking Protein Adsorption in Microfluidic Chips by a Hydrophobin Coating. ACS Applied Polymer Materials, 2021, 3, 3278-3286.	2.0	2
9	Miniaturization, Parallelization, and Automation of Endotoxin Detection by Centrifugal Microfluidics. Analytical Chemistry, 2021, 93, 8508-8516.	3.2	6
10	Real-Time Detection of Tumor Cells during Capture on a Filter Element Significantly Enhancing Detection Rate. Biosensors, 2021, 11, 312.	2.3	2
11	Eliminating viscosity bias in lateral flow tests. Microsystems and Nanoengineering, 2021, 7, 72.	3.4	7
12	Automated library preparation for whole genome sequencing by centrifugal microfluidics. Analytica Chimica Acta, 2021, 1182, 338954.	2.6	6
13	High Dynamic Range Digital Assay Enabled by Dual-Volume Centrifugal Step Emulsification. Analytical Chemistry, 2021, 93, 2854-2860.	3.2	10
14	Fully automated point-of-care differential diagnosis of acute febrile illness. PLoS Neglected Tropical Diseases, 2021, 15, e0009177.	1.3	16
15	Advanced minimal residual disease monitoring for acute lymphoblastic leukemia with multiplex mediator probe PCR. Journal of Molecular Diagnostics, 2021, , .	1.2	3
16	Gravity-driven microfluidic assay for digital enumeration of bacteria and for antibiotic susceptibility testing. Lab on A Chip, 2020, 20, 54-63.	3.1	35
17	Loop-mediated isothermal amplification (LAMP) â€" review and classification of methods for sequence-specific detection. Analytical Methods, 2020, 12, 717-746.	1.3	237
18	Fusing MEMS technology with lab-on-chip: nanoliter-scale silicon microcavity arrays for digital DNA quantification and multiplex testing. Microsystems and Nanoengineering, 2020, 6, 82.	3.4	14

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19	In vivo evaluation of bioprinted prevascularized bone tissue. Biotechnology and Bioengineering, 2020, 117, 3902-3911.	1.7	26
20	Automation of Amplicon-Based Library Preparation for Next-Generation Sequencing by Centrifugal Microfluidics. Analytical Chemistry, 2020, 92, 12833-12841.	3.2	15
21	Point-of-care testing system for digital single cell detection of MRSA directly from nasal swabs. Lab on A Chip, 2020, 20, 2549-2561.	3.1	44
22	An analytical model for void-free priming of microcavities. Microfluidics and Nanofluidics, 2020, 24, 1.	1.0	2
23	Single-cell dispensing and â€real-time' cell classification using convolutional neural networks for higher efficiency in single-cell cloning. Scientific Reports, 2020, 10, 1193.	1.6	17
24	From CAD to microfluidic chip within one day: rapid prototyping of lab-on-chip cartridges using generic polymer parts. Journal of Micromechanics and Microengineering, 2020, 30, 115012.	1.5	10
25	Bioprinting of high cellâ€density constructs leads to controlled lumen formation with selfâ€assembly of endothelial cells. Journal of Tissue Engineering and Regenerative Medicine, 2019, 13, 1883-1895.	1.3	14
26	Flow control for lateral flow strips with centrifugal microfluidics. Lab on A Chip, 2019, 19, 2718-2727.	3.1	15
27	Examination of Hydrogels and Mesenchymal Stem Cell Sources for Bioprinting of Artificial Osteogenic Tissues. Cellular and Molecular Bioengineering, 2019, 12, 583-597.	1.0	14
28	Simplified Real-Time Multiplex Detection of Loop-Mediated Isothermal Amplification Using Novel Mediator Displacement Probes with Universal Reporters. Analytical Chemistry, 2018, 90, 4741-4748.	3.2	43
29	Simultaneous use of a crossflow filtration membrane as microbial fuel cell anode – Permeate flow leads to 4-fold increased current densities. Bioresource Technology, 2018, 257, 274-280.	4.8	8
30	Tailoring the Membraneâ€Electrode Interface in PEM Fuel Cells: A Review and Perspective on Novel Engineering Approaches. Advanced Energy Materials, 2018, 8, 1701257.	10.2	105
31	Assessment of hydrogels for bioprinting of endothelial cells. Journal of Biomedical Materials Research - Part A, 2018, 106, 935-947.	2.1	63
32	Diagnostic tools for tackling febrile illness and enhancing patient management. Microelectronic Engineering, 2018, 201, 26-59.	1.1	18
33	An air-breathing enzymatic cathode with extended lifetime by continuous laccase supply. Bioresource Technology, 2018, 264, 306-310.	4.8	10
34	Fluorescence signal-to-noise optimisation for real-time PCR using universal reporter oligonucleotides. Analytical Methods, 2018, 10, 3444-3454.	1.3	12
35	Converging Human and Malaria Vector Diagnostics with Data Management towards an Integrated Holistic One Health Approach. International Journal of Environmental Research and Public Health, 2018, 15, 259.	1.2	14
36	Digital hydraulic drive for microfluidics and miniaturized cell culture devices based on shape memory alloy actuators. Journal of Micromechanics and Microengineering, 2018, 28, 084001.	1.5	7

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37	G-index: A new metric to describe dynamic refractive index effects in HPLC absorbance detection. Talanta, 2018, 187, 200-206.	2.9	1
38	Open microfluidic gel electrophoresis: Rapid and low cost separation and analysis of DNA at the nanoliter scale. Electrophoresis, 2017, 38, 1764-1770.	1.3	23
39	Cerium Oxide Decorated Polymer Nanofibers as Effective Membrane Reinforcement for Durable, Highâ€Performance Fuel Cells. Advanced Energy Materials, 2017, 7, 1602100.	10.2	56
40	A Smartphone-Based Colorimetric Reader for Human C-Reactive Protein Immunoassay. Methods in Molecular Biology, 2017, 1571, 343-356.	0.4	8
41	Fuel Cells: Cerium Oxide Decorated Polymer Nanofibers as Effective Membrane Reinforcement for Durable, Highâ€Performance Fuel Cells (Adv. Energy Mater. 6/2017). Advanced Energy Materials, 2017, 7, .	10.2	0
42	Atmospheric Photopolymerization of Acrylamide Enabled by Aqueous Glycerol Mixtures: Characterization and Application for Surfaceâ€Based Microfluidics. Macromolecular Materials and Engineering, 2017, 302, 1600518.	1.7	2
43	Digital Hydraulic Drive for microfluid large-scale integration system based on shape memory alloy actuators., 2017,,.		0
44	Cytocompatibility testing of hydrogels toward bioprinting of mesenchymal stem cells. Journal of Biomedical Materials Research - Part A, 2017, 105, 3231-3241.	2.1	33
45	Simplified development of multiplex real-time PCR through master mix augmented by universal fluorogenic reporters. BioTechniques, 2016, 61, 123-128.	0.8	8
46	Molecular Genetic Characterization of Individual Cancer Cells Isolated via Single-Cell Printing. PLoS ONE, 2016, 11, e0163455.	1.1	18
47	Synchrotron Xâ€ray Tomographic Study of a Silicon Electrode Before and After Discharge and the Effect of Cavities on Particle Fracturing. ChemElectroChem, 2016, 3, 1170-1177.	1.7	20
48	In situ characterization of the mTORC1 during adipogenesis of human adult stem cells on chip. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E4143-50.	3.3	25
49	Microfluidic solutions enabling continuous processing and monitoring of biological samples: A review. Analytica Chimica Acta, 2016, 929, 1-22.	2.6	61
50	Morphological Evolution of Electrochemically Plated/Stripped Lithium Microstructures Investigated by Synchrotron X-ray Phase Contrast Tomography. ACS Nano, 2016, 10, 7990-7997.	7.3	108
51	Multi-Scale Correlative Tomography of a Li-Ion Battery Composite Cathode. Scientific Reports, 2016, 6, 30109.	1.6	47
52	Digital droplet PCR on disk. Lab on A Chip, 2016, 16, 208-216.	3.1	114
53	LabDisk for SAXS: a centrifugal microfluidic sample preparation platform for small-angle X-ray scattering. Lab on A Chip, 2016, 16, 1161-1170.	3.1	44
54	Directly deposited Nafion/TiO ₂ composite membranes for high power medium temperature fuel cells. RSC Advances, 2016, 6, 24261-24266.	1.7	39

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55	Poisoning of Highly Porous Platinum Electrodes by Amino Acids and Tissue Fluid Constituents. ChemElectroChem, 2015, 2, 1785-1793.	1.7	14
56	Technologies for Single-Cell Isolation. International Journal of Molecular Sciences, 2015, 16, 16897-16919.	1.8	339
57	A Disposable Dispensing Valve for Non-Contact Microliter Applications in a 96-Well Plate Format. Micromachines, 2015, 6, 423-436.	1.4	7
58	Automated Forensic Animal Family Identification by Nested PCR and Melt Curve Analysis on an Off-the-Shelf Thermocycler Augmented with a Centrifugal Microfluidic Disk Segment. PLoS ONE, 2015, 10, e0131845.	1.1	17
59	Liquids on-chip: direct storage and release employing micro-perforated vapor barrier films. Lab on A Chip, 2015, 15, 2887-2895.	3.1	12
60	Versatile sample environments and automation for biological solution X-ray scattering experiments at the P12 beamline (PETRA III, DESY). Journal of Applied Crystallography, 2015, 48, 431-443.	1.9	508
61	Direct deposition of proton exchange membranes enabling high performance hydrogen fuel cells. Journal of Materials Chemistry A, 2015, 3, 11239-11245.	5.2	128
62	Graphene-based rapid and highly-sensitive immunoassay for C-reactive protein using a smartphone-based colorimetric reader. Biosensors and Bioelectronics, 2015, 66, 169-176.	5.3	75
63	Threeâ€Phase Multiscale Modeling of a LiCoO ₂ Cathode: Combining the Advantages of FIB–SEM Imaging and Xâ€Ray Tomography. Advanced Energy Materials, 2015, 5, 1401612.	10.2	127
64	Electrochemical pesticide detection with AutoDip \hat{a} \in a portable platform for automation of crude sample analyses. Lab on A Chip, 2015, 15, 704-710.	3.1	26
65	A smartphone-based colorimetric reader for bioanalytical applications using the screen-based bottom illumination provided by gadgets. Biosensors and Bioelectronics, 2015, 67, 248-255.	5.3	201
66	Real–time stability testing of air–dried primers and fluorogenic hydrolysis probes stabilized by trehalose and xanthan. BioTechniques, 2014, 57, 151-155.	0.8	17
67	Electrodes: A Combination of X-Ray Tomography and Carbon Binder Modeling: Reconstructing the Three Phases of LiCoO2 Li-lon Battery Cathodes (Adv. Energy Mater. 8/2014). Advanced Energy Materials, 2014, 4, .	10.2	2
68	A Calibration-Free, Noncontact, Disposable Liquid Dispensing Cartridge Featuring an Online Process Control. Journal of the Association for Laboratory Automation, 2014, 19, 394-402.	2.8	6
69	Centrifugal LabTube platform for fully automated DNA purification and LAMP amplification based on an integrated, low-cost heating system. Biomedical Microdevices, 2014, 16, 375-85.	1.4	13
70	Multiplex genotyping of KRAS point mutations in tumor cell DNA by allele-specific real-time PCR on a centrifugal microfluidic disk segment. Mikrochimica Acta, 2014, 181, 1681-1688.	2.5	19
71	Lamination of polyethylene composite films by ultrasonic welding: Investigation of peel behavior and identification of optimum welding parameters. Journal of Applied Polymer Science, 2014, 131, .	1.3	5
72	A Combination of Xâ€Ray Tomography and Carbon Binder Modeling: Reconstructing the Three Phases of LiCoO ₂ Liâ€Ion Battery Cathodes. Advanced Energy Materials, 2014, 4, 1301617.	10.2	95

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73	Cellphone-based devices for bioanalytical sciences. Analytical and Bioanalytical Chemistry, 2014, 406, 3263-3277.	1.9	268
74	Real-time PCR based detection of a panel of food-borne pathogens on a centrifugal microfluidic "LabDisk―with on-disk quality controls and standards for quantification. Analytical Methods, 2014, 6, 2038.	1.3	42
75	Using planktonic microorganisms to supply the unpurified multi-copper oxidases laccase and copper efflux oxidases at a biofuel cell cathode. Bioresource Technology, 2014, 158, 231-238.	4.8	10
76	One-step kinetics-based immunoassay for the highly sensitive detection of C-reactive protein in less than 30min. Analytical Biochemistry, 2014, 456, 32-37.	1.1	62
77	A versatile-deployable bacterial detection system for food and environmental safety based on LabTube-automated DNA purification, LabReader-integrated amplification, readout and analysis. Analyst, The, 2014, 139, 2788-2798.	1.7	7
78	Miniature stick-packaging $\hat{a}\in$ an industrial technology for pre-storage and release of reagents in lab-on-a-chip systems. Lab on A Chip, 2013, 13, 2888.	3.1	83
79	Single-Cell Printer: Automated, On Demand, and Label Free. Journal of the Association for Laboratory Automation, 2013, 18, 504-518.	2.8	91
80	Systematic screening of carbon-based anode materials for microbial fuel cells with Shewanella oneidensis MR-1. Bioresource Technology, 2013, 146, 386-392.	4.8	63
81	Leukocyte enrichment based on a modified pinched flow fractionation approach. Microfluidics and Nanofluidics, 2013, 14, 551-563.	1.0	28
82	Centrifugal gas-phase transition magnetophoresis (GTM) $\hat{a}\in$ a generic method for automation of magnetic bead based assays on the centrifugal microfluidic platform and application to DNA purification. Lab on A Chip, 2013, 13, 146-155.	3.1	56
83	Fabrication of highly porous platinum electrodes for micro-scale applications byÂpulsed electrodeposition and dealloying. Journal of Power Sources, 2013, 242, 255-263.	4.0	23
84	Fabrication of Highly Porous Platinum by Cyclic Electrodeposition of PtCu Alloys: How do Process Parameters Affect Morphology?. Journal of the Electrochemical Society, 2013, 160, D111-D118.	1.3	8
85	Miniaturized FPGA-Based High-Resolution Time-Domain Reflectometer. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 2101-2113.	2.4	19
86	A Low-Cost, Normally Closed, Solenoid Valve for Non-Contact Dispensing in the Sub-ÂμL Range. Micromachines, 2013, 4, 9-21.	1.4	22
87	Enhanced Liquid Metal Micro Droplet Generation by Pneumatic Actuation Based on the StarJet Method. Micromachines, 2013, 4, 49-66.	1.4	31
88	Active Continuous-Flow Micromixer Using an External Braille Pin Actuator Array. Micromachines, 2013, 4, 80-89.	1.4	37
89	Droplet Dispensing. , 2013, , 1-14.		2
90	Microfluidic Apps for off-the-shelf instruments. Lab on A Chip, 2012, 12, 2464.	3.1	37

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91	Rapid microarray processing using a disposable hybridization chamber with an integrated micropump. Lab on A Chip, 2012, 12, 1384.	3.1	29
92	Completely Superhydrophobic PDMS Surfaces for Microfluidics. Langmuir, 2012, 28, 8292-8295.	1.6	135
93	Microfluidic Platforms for Lab-On-A-Chip Applications. , 2012, , 853-895.		17
94	Centrifugo-dynamic inward pumping of liquids on a centrifugal microfluidic platform. Lab on A Chip, 2012, 12, 5142.	3.1	64
95	Optical non-contact localization of liquid-gas interfaces on disk during rotation for measuring flow rates and viscosities. Lab on A Chip, 2012, 12, 5231.	3.1	6
96	Towards a "Sample-In, Answer-Out―Point-of-Care Platform for Nucleic Acid Extraction and Amplification: Using an HPV E6/E7 mRNA Model System. Journal of Oncology, 2012, 2012, 1-12.	0.6	24
97	Universal protocol for grafting PCR primers onto various lab-on-a-chip substrates for solid-phase PCR. RSC Advances, 2012, 2, 3885.	1.7	24
98	Construction of a Microstructured Collagen Membrane Mimicking the Papillary Dermis Architecture and Guiding Keratinocyte Morphology and Gene Expression. Macromolecular Bioscience, 2012, 12, 675-691.	2.1	25
99	Cyclic Electrodeposition of PtCu Alloy: Facile Fabrication of Highly Porous Platinum Electrodes. Advanced Materials, 2012, 24, 2916-2921.	11.1	63
100	Inkjet-like printing of single-cells. Lab on A Chip, 2011, 11, 2447.	3.1	126
101	Microfluidic cartridges for DNA purification and genotyping processed in standard laboratory instruments. Proceedings of SPIE, 2011, , .	0.8	3
102	Controlled counter-flow motion of magnetic bead chains rolling along microchannels. Microfluidics and Nanofluidics, 2011, 10, 935-939.	1.0	30
103	Aliquoting on the centrifugal microfluidic platform based on centrifugo-pneumatic valves. Microfluidics and Nanofluidics, 2011, 10, 1279-1288.	1.0	7 5
104	Nano-morphology of a polymer electrolyte fuel cell catalyst layerâ€"imaging, reconstruction and analysis. Nano Research, 2011, 4, 849-860.	5.8	90
105	Strategies for the Fabrication of Porous Platinum Electrodes. Advanced Materials, 2011, 23, 4976-5008.	11.1	171
106	Capillary driven movement of gas bubbles in tapered structures. Microfluidics and Nanofluidics, 2010, 9, 341-355.	1.0	24
107	Tailormade Microfluidic Devices Through Photochemical Surface Modification. Macromolecular Chemistry and Physics, 2010, 211, 195-203.	1.1	15
108	Adhesive bonding of microfluidic chips: influence of process parameters. Journal of Micromechanics and Microengineering, 2010, 20, 087003.	1.5	14

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109	Continuous microfluidic DNA extraction using phase-transfer magnetophoresis. Lab on A Chip, 2010, 10, 3284.	3.1	86
110	Microfluidic lab-on-a-foil for nucleic acid analysis based on isothermal recombinase polymerase amplification (RPA). Lab on A Chip, 2010, 10, 887.	3.1	308
111	Microfluidic lab-on-a-chip platforms: requirements, characteristics and applications. Chemical Society Reviews, 2010, 39, 1153.	18.7	1,366
112	Pre-storage of liquid reagents in glass ampoules for DNA extraction on a fully integrated lab-on-a-chip cartridge. Lab on A Chip, 2010, 10, 1480.	3.1	58
113	Lab-on-a-Foil: microfluidics on thin and flexible films. Lab on A Chip, 2010, 10, 1365.	3.1	228
114	Centrifugal microfluidic system for primary amplification and secondary real-time PCR. Lab on A Chip, 2010, 10, 3210.	3.1	78
115	Microstructuring of polymer films for sensitive genotyping by real-time PCR on a centrifugal microfluidic platform. Lab on A Chip, 2010, 10, 2519.	3.1	108
116	Simulation of advanced microfluidic systems with dissipative particle dynamics. Microfluidics and Nanofluidics, 2009, 7, 307-323.	1.0	21
117	Capillary-driven pumping for passive degassing and fuel supply in direct methanol fuel cells. Microfluidics and Nanofluidics, 2009, 7, 531-543.	1.0	24
118	Centrifugo-pneumatic valve for metering of highly wetting liquids on centrifugal microfluidic platforms. Lab on A Chip, 2009, 9, 3599.	3.1	72
119	Computational fluid dynamics (CFD) software tools for microfluidic applications – A case study. Computers and Fluids, 2008, 37, 218-235.	1.3	124
120	Near-wall velocity of suspended particles in microchannel flow. Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 2008, , .	0.0	1
121	Fully passive degassing and fuel supply in direct methanol fuel cells. Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS), 2008, , .	0.0	5
122	Microfluidic for Lab-on-a-Chip. , 2008, , 463-516.		4
123	Microfluidic platforms for lab-on-a-chip applications. Lab on A Chip, 2007, 7, 1094.	3.1	925
124	The centrifugal microfluidic Bio-Disk platform. Journal of Micromechanics and Microengineering, 2007, 17, S103-S115.	1.5	521
125	Centrifugo-magnetic pump for gas-to-liquid sampling. Sensors and Actuators A: Physical, 2007, 135, 28-33.	2.0	40
126	Centrifugal extraction of plasma from whole blood on a rotating disk. Lab on A Chip, 2006, 6, 776-781.	3.1	224

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127	Patterning of flow and mixing in rotating radial microchannels. Microfluidics and Nanofluidics, 2006, 2, 97-105.	1.0	92
128	Multilamination of flows in planar networks of rotating microchannels. Microfluidics and Nanofluidics, 2006, 2, 78-84.	1.0	70
129	Centrifugal generation and manipulation of droplet emulsions. Microfluidics and Nanofluidics, 2006, 3, 65-75.	1.0	76
130	LAB-ON-CHIP-BASED CELL SEPARATION BY COMBINING DIELECTROPHORESIS AND CENTRIFUGATION. Biophysical Reviews and Letters, 2006, 01, 443-451.	0.9	16
131	Visualization of flow patterning in high-speed centrifugal microfluidics. Review of Scientific Instruments, 2005, 76, 025101.	0.6	89
132	Fast and reliable protein microarray production by a new drop-in-drop technique. Lab on A Chip, 2005, 5, 675.	3.1	52
133	Frequency-dependent transversal flow control in centrifugal microfluidics. Lab on A Chip, 2005, 5, 146-150.	3.1	119
134	Non-contact production of oligonucleotide microarrays using the highly integrated TopSpot nanoliter dispenser. Analyst, The, 2004, 129, 835.	1.7	30
135	A Highly Parallel Nanoliter Dispenser for Microarray Fabrication. Biomedical Microdevices, 2004, 6, 131-137.	1.4	35
136	Highly parallel dispensing of chemical and biological reagents. Analytical and Bioanalytical Chemistry, 2004, 378, 119-122.	1.9	47
137	A highly parallel picoliter dispenser with an integrated, novel capillary channel structure. Sensors and Actuators A: Physical, 2004, 116, 171-177.	2.0	38
138	Impact of medium properties on droplet release in a highly parallel nanoliter dispenser. Sensors and Actuators A: Physical, 2004, 116, 187-194.	2.0	22
139	The dispensing well plate: a novel nanodispenser for the multiparallel delivery of liquids (DWP Part I). Sensors and Actuators A: Physical, 2004, 116, 483-491.	2.0	33
140	Theoretical evaluation of the dispensing well plate method (DWP part II). Sensors and Actuators A: Physical, 2004, 116, 472-482.	2.0	15
141	Aggregation of bead-monolayers in flat microfluidic chambers – simulation by the model of porous media. Lab on A Chip, 2004, 4, 209-213.	3.1	13
142	A tuneable and highly-parallel picolitre-dispenser based on direct liquid displacement. Sensors and Actuators A: Physical, 2003, 103, 88-92.	2.0	44