Babak Ziaie

List of Publications by Year
in descending order

101 papers	3,912 citations	159585 30 h-index	123424 61 g-index
101 all docs	101 docs citations	101 times ranked	5272 citing authors

#	Article	IF	Citations
1	Hard and soft micromachining for BioMEMS: review of techniques and examples of applications in microfluidics and drug delivery. Advanced Drug Delivery Reviews, 2004, 56, 145-172.	13.7	394
2	Highly Stretchable and Sensitive Unidirectional Strain Sensor via Laser Carbonization. ACS Applied Materials & Interfaces, 2015, 7, 4463-4470.	8.0	332
3	Laser-treated hydrophobic paper: an inexpensive microfluidic platform. Lab on A Chip, 2011, 11, 1161.	6.0	274
4	Smart Bandage for Monitoring and Treatment of Chronic Wounds. Small, 2018, 14, e1703509.	10.0	257
5	A magnetically driven PDMS micropump with ball check-valves. Journal of Micromechanics and Microengineering, 2005, 15, 1021-1026.	2.6	158
6	Highly Stretchable Potentiometric pH Sensor Fabricated via Laser Carbonization and Machining of Carbonâ^Polyaniline Composite. ACS Applied Materials & Interfaces, 2017, 9, 9015-9023.	8.0	146
7	A low-cost flexible pH sensor array for wound assessment. Sensors and Actuators B: Chemical, 2016, 229, 609-617.	7.8	138
8	An Ultrasonically Powered Implantable Micro-Oxygen Generator (IMOG). IEEE Transactions on Biomedical Engineering, 2011, 58, 3104-3111.	4.2	128
9	Biodegradable Nanofibrous Polymeric Substrates for Generating Elastic and Flexible Electronics. Advanced Materials, 2014, 26, 5823-5830.	21.0	117
10	A Minimally Invasive Implantable Wireless Pressure Sensor for Continuous IOP Monitoring. IEEE Transactions on Biomedical Engineering, 2013, 60, 250-256.	4.2	113
11	Integrated sensing and delivery of oxygen for next-generation smart wound dressings. Microsystems and Nanoengineering, 2020, 6, 46.	7.0	96
12	Direct Laser Writing of Porous-Carbon/Silver Nanocomposite for Flexible Electronics. ACS Applied Materials & Interfaces, 2016, 8, 16907-16913.	8.0	87
13	Hard and soft micro- and nanofabrication: An integrated approach to hydrogel-based biosensing and drug delivery. Journal of Controlled Release, 2010, 141, 303-313.	9.9	84
14	Wireless Flexible Smart Bandage for Continuous Monitoring of Wound Oxygenation. IEEE Transactions on Biomedical Circuits and Systems, 2015, 9, 670-677.	4.0	83
15	Hydrogel-based microsensors for wireless chemical monitoring. Biomedical Microdevices, 2009, 11, 529-538.	2.8	81
16	A Hydrogel-Based Implantable Micromachined Transponder for Wireless Glucose Measurement. Diabetes Technology and Therapeutics, 2006, 8, 112-122.	4.4	77
17	Flexible Sensors for Chronic Wound Management. IEEE Reviews in Biomedical Engineering, 2014, 7, 73-86.	18.0	76
18	New and Emerging Energy Sources for Implantable Wireless Microdevices. IEEE Access, 2015, 3, 89-98.	4.2	64

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19	Laser-enabled fabrication of flexible and transparent pH sensor with near-field communication for in-situ monitoring of wound infection. Sensors and Actuators B: Chemical, 2018, 267, 198-207.	7.8	60
20	An Implantable Ultrasonically-Powered Micro-Light-Source (ÂµLight) for Photodynamic Therapy. Scientific Reports, 2019, 9, 1395.	3.3	59
21	Polymeric microdevices for transdermal and subcutaneous drug delivery. Advanced Drug Delivery Reviews, 2012, 64, 1603-1616.	13.7	55
22	A pH-regulated drug delivery dermal patch for targeting infected regions in chronic wounds. Lab on A Chip, 2019, 19, 2265-2274.	6.0	47
23	An Implantable Microsystem for Tonometric Blood Pressure Measurement. Biomedical Microdevices, 2001, 3, 285-292.	2.8	45
24	High-Resolution Technique for Fabricating Environmentally Sensitive Hydrogel Microstructures. Langmuir, 2004, 20, 8947-8951.	3.5	43
25	Novel swelling/shrinking behaviors of glucose-binding hydrogels and their potential use in a microfluidic insulin delivery system. Macromolecular Symposia, 2004, 207, 249-256.	0.7	38
26	An Implantable Pressure Sensing System With Electromechanical Interrogation Scheme. IEEE Transactions on Biomedical Engineering, 2014, 61, 2209-2217.	4.2	37
27	A microstructured silicon membrane with entrapped hydrogels for environmentally sensitive fluid gating. Sensors and Actuators B: Chemical, 2006, 114, 9-18.	7.8	35
28	A wearable smartphone-enabled camera-based system for gait assessment. Gait and Posture, 2015, 42, 138-144.	1.4	35
29	Ferrofluid-Impregnated Paper Actuators. Journal of Microelectromechanical Systems, 2011, 20, 59-64.	2.5	32
30	A Skin-Contact-Actuated Micropump for Transdermal Drug Delivery. IEEE Transactions on Biomedical Engineering, 2011, 58, 1492-1498.	4.2	30
31	Rapid prototyping of a novel and flexible paper based oxygen sensing patchviaadditive inkjet printing process. RSC Advances, 2019, 9, 22695-22704.	3.6	30
32	A mass-customizable dermal patch with discrete colorimetric indicators for personalized sweat rate quantification. Microsystems and Nanoengineering, 2019, 5, 29.	7.0	30
33	A Smart Capsule With GI-Tract-Location-Specific Payload Release. IEEE Transactions on Biomedical Engineering, 2015, 62, 2289-2295.	4.2	29
34	An Artificial Nano-Drainage Implant (ANDI) for Glaucoma Treatment. , 2006, 2006, 3174-7.		27
35	Modeling and Characterization of a Valved Glaucoma Drainage Device With Implications for Enhanced Therapeutic Efficacy. IEEE Transactions on Biomedical Engineering, 2005, 52, 948-951.	4.2	26
36	Integration of Hydrogels with Hard and Soft Microstructures. Journal of Nanoscience and Nanotechnology, 2007, 7, 780-789.	0.9	26

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37	Magnetic Tracking System for Radiation Therapy. IEEE Transactions on Biomedical Circuits and Systems, 2010, 4, 223-231.	4.0	26
38	Laserâ€Enabled Processing of Stretchable Electronics on a Hydrolytically Degradable Hydrogel. Advanced Healthcare Materials, 2018, 7, e1800231.	7.6	26
39	A Smart Capsule With a Hydrogel-Based pH-Triggered Release Switch for GI-Tract Site-Specific Drug Delivery. IEEE Transactions on Biomedical Engineering, 2018, 65, 2808-2813.	4.2	25
40	A paper-based oxygen generating platform with spatially defined catalytic regions. Sensors and Actuators B: Chemical, 2014, 198, 472-478.	7.8	24
41	A paper-based in vitro model for on-chip investigation of the human respiratory system. Lab on A Chip, 2016, 16, 4319-4325.	6.0	24
42	Comparison of Direct and Indirect Laser Ablation of Metallized Paper for Inexpensive Paper-Based Sensors. ACS Applied Materials & Interfaces, 2018, 10, 36332-36341.	8.0	23
43	Thin-Film Coupled Fluid-Solid Analysis of Flow Through the Ahmedâ„¢ Glaucoma Drainage Device. Journal of Biomechanical Engineering, 2005, 127, 776-781.	1.3	20
44	Fabrication and modeling of silicon-embedded high-Qinductors. Journal of Micromechanics and Microengineering, 2005, 15, 849-854.	2.6	18
45	Aqueous microdrop manipulation and mixing using ferrofluid dynamics. Applied Physics Letters, 2007, 90, 092501.	3.3	18
46	Flexible and transparent pH monitoring system with NFC communication for wound monitoring applications. , 2017, , .		17
47	Gradient-on-a-Chip with Reactive Oxygen Species Reveals Thresholds in the Nucleus Response of Cancer Cells Depending on the Matrix Environment. ACS Biomaterials Science and Engineering, 2018, 4, 432-445.	5.2	17
48	A pH-tunable hydrogel microlens array with temperature-actuated light-switching capability. Applied Physics Letters, 2009, 94, .	3.3	16
49	Reflective Diffraction Gratings From Hydrogels as Biochemical Sensors. IEEE Sensors Journal, 2012, 12, 2374-2379.	4.7	16
50	A Janus-paper PDMS platform for airâ€“liquid interface cell culture applications. Journal of Micromechanics and Microengineering, 2015, 25, 055015.	2.6	16
51	Squeeze-Film Hydrogel Deposition and Dry Micropatterning. Analytical Chemistry, 2010, 82, 3377-3382.	6.5	15
52	A ferrofluid-based wireless pressure sensor. Journal of Micromechanics and Microengineering, 2013, 23, 125031.	2.6	14
53	Enhanced 3-D Folding of Silicon Microstructures via Thermal Shrinkage of a Composite Organic/Inorganic Bilayer. Journal of Microelectromechanical Systems, 2008, 17, 882-889.	2.5	13
54	An Universal packaging technique for low-drift implantable pressure sensors. Biomedical Microdevices, 2016, 18, 32.	2.8	13

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55	Directly embroidered microtubes for fluid transport in wearable applications. Lab on A Chip, 2017, 17, 1585-1593.	6.0	13
56	Wearable and Flexible Ozone Generating System for Treatment of Infected Dermal Wounds. Frontiers in Bioengineering and Biotechnology, 2020, 8, 458.	4.1	12
57	Inkjet-printed Solid-state Potentiometric Nitrate Ion Selective Electrodes for Agricultural Application. , 2019, , .		11
58	Vibration-Induced Frequency-Controllable Bidirectional Locomotion for Assembly and Microrobotic Applications. IEEE Transactions on Robotics, 2009, 25, 1192-1196.	10.3	9
59	Laserâ€micromachined cellulose acetate adhesive tape as a lowâ€cost smart material. Journal of Polymer Science, Part B: Polymer Physics, 2013, 51, 1263-1267.	2.1	9
60	Wireless flexible smart bandage for continuous monitoring of wound oxygenation. , 2014, , .		9
61	Remotely adjustable check-valves with an electrochemical release mechanism for implantable biomedical microsystems. Biomedical Microdevices, 2007, 9, 385-394.	2.8	8
62	A fermentation-powered thermopneumatic pump for biomedical applications. Lab on A Chip, 2012, 12, 4044.	6.0	8
63	A Corona-Charged Self-Biased Radiation Dosimeter. IEEE Electron Device Letters, 2010, 31, 767-769.	3.9	7
64	Atomic force microscopy-coupled microcoils for cellular-scale nuclear magnetic resonance spectroscopy. Applied Physics Letters, 2013, 102, 143702.	3.3	7
65	Fabrication and characterization of implantable flushable electrodes for electric fieldâ€mediated drug delivery in a brain tissueâ€mimic agarose gel. Electrophoresis, 2018, 39, 2262-2269.	2.4	7
66	An interpenetrating glass-thermosensitive hydrogel construct. Sensors and Actuators B: Chemical, 2009, 138, 631-636.	7.8	6
67	Self-Folding Smart 3D Microstructures Using a Hydrogel-Parylene Bilayer. , 2010, , .		6
68	Sequential droplet manipulation via vibrating ratcheted microchannels. Sensors and Actuators B: Chemical, 2009, 142, 362-368.	7.8	5
69	Diffractometric biochemical sensing with smart hydrogels. , 2010, , .		5
70	An ultrasonically controlled power management system for implantable biomedical devices. , 2015, , .		5
71	Skin Regeneration Using Dermal Substrates that Contain Autologous Cells and Silver Nanoparticles to Promote Antibacterial Activity: In Vitro Studies. Military Medicine, 2017, 182, 376-382.	0.8	5
72	Laser-treated glass platform for rapid wicking-driven transport and particle separation in bio microfluidics. RSC Advances, 2019, 9, 19531-19538.	3.6	5

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73	Wireless magnetic tracking system for radiation therapy. , 2009, , .		4
74	A Batch-Fabricated Single-Layer Elastomeric Actuator With Corrugated Surface. Journal of Microelectromechanical Systems, 2012, 21, 859-866.	2.5	4
75	Laser-Enabled Fabrication Technologies for Low-Cost Flexible/Conformal Cutaneous Wound Interfaces. Microsystems and Nanosystems, 2016, , 207-226.	0.1	4
76	Laser-Fabricated, Self-Forming Swimmers With Catalytic Propulsion and Magnetic Navigation. Journal of Microelectromechanical Systems, 2017, 26, 802-808.	2.5	4
77	Smart Bandages: Smart Bandage for Monitoring and Treatment of Chronic Wounds (Small 33/2018). Small, 2018, 14, 1870150.	10.0	4
78	Yeast Metabolic Response as an Indicator of Radiation Damage in Biological Tissue. Advanced Biology, 2018, 2, 1800126.	3.0	4
79	Real-Time Tracking of a 3D-Printed Smart Capsule Using on-Board Near-Infrared Led Array. , 2019, , .		3
80	Early Experience With Nonporous Polyethylene Barrier Sheet in Orbital Fracture Repair. Ophthalmic Plastic and Reconstructive Surgery, 2019, 35, 67-70.	0.8	3
81	Homopolar Micromotor with Liquid Metal Rotor. , 2007, , .		2
82	A wireless pressure sensor based on surface trapped ferrofluid plug. , 2013, , .		2
83	UP-link: An ultra-low power implantable wireless system for long-term ambulatory urodynamics. , 2014, , .		2
84	A pH-sensitive hydrogel-based smart switch for GI-tract payload release. , 2017, , .		2
85	A manufacturable smart dressing with oxygen delivery and sensing capability for chronic wound management. , 2018, , .		2
86	Hydrogel-Based Integrated Antenna-pH Sensor. , 2007, , .		1
87	Time-multiplexed droplet manipulation via vibrating ratcheted micro-channels. , 2007, , .		1
88	Laser-treated Parchment Paper: An Inexpensive Microfluidic Platform. Materials Research Society Symposia Proceedings, 2011, 1346, 1.	0.1	1
89	An ultrasonically controlled switching system for power management in implantable devices. Biomedical Microdevices, 2018, 20, 42.	2.8	1
90	An Integrated CMOS Bio-potential Amplifier with a Feed-Forward DC Cancellation Topology. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	1

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91	A hydrogel stamper with expandable height and built-in reservoirs for patterning biomolecules on 3D topologies. , 2007, , .		0
92	Uniform Nanoliter-Sized Droplet Deposition using Fluid Motion in Ratcheted Micro-Channels. , 2007, , .		0
93	A dynamic ferrofluid platform for micromanipulation. , 2007, , .		0
94	A tunable hydrogel microlens array with light-switching capability. , 2009, , .		0
95	Single-Touch Catalytically-Activated Electrochemical Micropump. , 2010, , .		0
96	A Batch Fabricated Elastomeric Actuator with Large out of Plane Displacement. , 2010, , .		0
97	Laser treated glass platform with rapid wicking-driven transport and particle separation capabilities. , 2015, , .		0
98	Radiosensitizing Pancreatic Cancer Xenografts by an Implantable Micro-Oxygen Generator. Radiation Research, 2016, 185, 431.	1.5	0
99	Battery-operated High-bandwidth Multi-channel Wireless Neural Recording System using 802.11b. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
100	An Artificial Nano-Drainage Implant (ANDI) for Glaucoma Treatment. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0
101	Fabrication Techniques for Improving the Performance of PVDF-on-Silicon Ultrasonic Transducer Arrays. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2006, , .	0.5	0