Andreas Hierlemann

List of Publications by Year
in descending order

353 papers	12,609 citations	25014 57 h-index	37183 96 g-index
380 all docs	380 docs citations	380 times ranked	11565 citing authors

#	Article	IF	Citations
1	Smart single-chip gas sensor microsystem. Nature, 2001, 414, 293-296.	13.7	582
2	Impedance Characterization and Modeling of Electrodes for Biomedical Applications. IEEE Transactions on Biomedical Engineering, 2005, 52, 1295-1302.	2.5	541
3	Higher-Order Chemical Sensing. Chemical Reviews, 2008, 108, 563-613.	23.0	378
4	Cell Types of the Human Retina and Its Organoids at Single-Cell Resolution. Cell, 2020, 182, 1623-1640.e34.	13.5	359
5	Reconfigurable microfluidic hanging drop network for multi-tissue interaction and analysis. Nature Communications, 2014, 5, 4250.	5.8	319
6	Complementary Metal Oxide Semiconductor Cantilever Arrays on a Single Chip:Â Mass-Sensitive Detection of Volatile Organic Compounds. Analytical Chemistry, 2002, 74, 3084-3095.	3.2	272
7	High-resolution CMOS MEA platform to study neurons at subcellular, cellular, and network levels. Lab on A Chip, 2015, 15, 2767-2780.	3.1	253
8	Switch-Matrix-Based High-Density Microelectrode Array in CMOS Technology. IEEE Journal of Solid-State Circuits, 2010, 45, 467-482.	3.5	228
9	Tracking axonal action potential propagation on a high-density microelectrode array across hundreds of sites. Nature Communications, 2013, 4, 2181.	5.8	207
10	Structural Distortion of Dendrimers on Gold Surfaces:Â A Tapping-Mode AFM Investigation. Journal of the American Chemical Society, 1998, 120, 5323-5324.	6.6	205
11	Microelectronic system for high-resolution mapping of extracellular electric fields applied to brain slices. Biosensors and Bioelectronics, 2009, 24, 2191-2198.	5.3	196
12	A 1024-Channel CMOS Microelectrode Array With 26,400 Electrodes for Recording and Stimulation of Electrogenic Cells In Vitro. IEEE Journal of Solid-State Circuits, 2014, 49, 2705-2719.	3.5	196
13	Microfabrication techniques for chemical/biosensors. Proceedings of the IEEE, 2003, 91, 839-863.	16.4	174
14	CMOS microelectrode array for the monitoring of electrogenic cells. Biosensors and Bioelectronics, 2004, 20, 358-366.	5.3	152
15	<italic>In Vitro</italic> Multi-Functional Microelectrode Array Featuring 59 760 Electrodes, 2048 Electrophysiology Channels, Stimulation, Impedance Measurement, and Neurotransmitter Detection Channels. IEEE Journal of Solid-State Circuits, 2017, 52, 1576-1590.	3.5	152
16	Chiral discrimination using piezoelectric and optical gas sensors. Nature, 1997, 387, 577-580.	13.7	137
17	Micropatterning Layers by Flame Aerosol Depositionâ€Annealing. Advanced Materials, 2008, 20, 3005-3010.	11.1	130
18	CMOS single-chip gas detection system comprising capacitive, calorimetric and mass-sensitive microsensors. IEEE Journal of Solid-State Circuits, 2002, 37, 1867-1878.	3.5	128

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19	Growing Cells Atop Microelectronic Chips: Interfacing Electrogenic Cells In Vitro With CMOS-Based Microelectrode Arrays. Proceedings of the IEEE, 2011, 99, 252-284.	16.4	126
20	Multi-analyte biosensor interface for real-time monitoring of 3D microtissue spheroids in hanging-drop networks. Microsystems and Nanoengineering, 2016, 2, 16022.	3.4	124
21	3D spherical microtissues and microfluidic technology for multi-tissue experiments and analysis. Journal of Biotechnology, 2015, 205, 24-35.	1.9	121
22	CMOS-based chemical microsensors. Analyst, The, 2003, 128, 15-28.	1.7	118
23	Congenital Nystagmus Gene FRMD7 Is Necessary for Establishing a Neuronal Circuit Asymmetry for Direction Selectivity. Neuron, 2016, 89, 177-193.	3.8	117
24	Polymer-based sensor arrays and multicomponent analysis for the detection of hazardous oragnic vapours in the environment. Sensors and Actuators B: Chemical, 1995, 26, 126-134.	4.0	116
25	Massively parallel microwire arrays integrated with CMOS chips for neural recording. Science Advances, 2020, 6, eaay2789.	4.7	115
26	Application-specific sensor systems based on CMOS chemical microsensors. Sensors and Actuators B: Chemical, 2000, 70, 2-11.	4.0	113
27	CMOS Microelectrode Array for Bidirectional Interaction With Neuronal Networks. IEEE Journal of Solid-State Circuits, 2006, 41, 1620-1629.	3.5	113
28	Structures of Neural Correlation and How They Favor Coding. Neuron, 2016, 89, 409-422.	3.8	110
29	Performances of Mass-Sensitive Devices for Gas Sensing:Â Thickness Shear Mode and Surface Acoustic Wave Transducers. Analytical Chemistry, 1996, 68, 2210-2218.	3.2	103
30	Causal evidence for retina-dependent and -independent visual motion computations in mouse cortex. Nature Neuroscience, 2017, 20, 960-968.	7.1	101
31	The potential of microelectrode arrays and microelectronics for biomedical research and diagnostics. Analytical and Bioanalytical Chemistry, 2011, 399, 2313-2329.	1.9	98
32	Characterization of subcellular morphology of single yeast cells using high frequency microfluidic impedance cytometer. Lab on A Chip, 2014, 14, 369-377.	3.1	97
33	A Synthetic Multifunctional Mammalian pH Sensor and CO2 Transgene-Control Device. Molecular Cell, 2014, 55, 397-408.	4.5	96
34	Use of Linear Solvation Energy Relationships for Modeling Responses from Polymer-Coated Acoustic-Wave Vapor Sensors. Analytical Chemistry, 2001, 73, 3458-3466.	3.2	93
35	Integrated array sensor for detecting organic solvents. Sensors and Actuators B: Chemical, 1995, 26, 135-139.	4.0	89
36	High-density microelectrode array recordings and real-time spike sorting for closed-loop experiments: an emerging technology to study neural plasticity. Frontiers in Neural Circuits, 2012, 6, 105.	1.4	89

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37	Tuning Sensitivity and Selectivity of Complementary Metal Oxide Semiconductor-Based Capacitive Chemical Microsensors. Analytical Chemistry, 2004, 76, 2470-2477.	3.2	86
38	Microfabricated gas sensor systems with sensitive nanocrystalline metal-oxide films. Journal of Nanoparticle Research, 2006, 8, 823-839.	0.8	86
39	Optimal Electrode Size for Multi-Scale Extracellular-Potential Recording From Neuronal Assemblies. Frontiers in Neuroscience, 2019, 13, 385.	1.4	85
40	Analysis of resonating microcantilevers operating in a viscous liquid environment. Sensors and Actuators A: Physical, 2008, 141, 43-51.	2.0	84
41	Bayes optimal template matching for spike sorting â€" combining fisher discriminant analysis with optimal filtering. Journal of Computational Neuroscience, 2015, 38, 439-459.	0.6	84
42	Mitotic cells contract actomyosin cortex and generate pressure to round against or escape epithelial confinement. Nature Communications, 2015, 6, 8872.	5.8	79
43	Conferring Selectivity to Chemical Sensors via Polymer Side-Chain Selection:Â Thermodynamics of Vapor Sorption by a Set of Polysiloxanes on Thickness-Shear Mode Resonators. Analytical Chemistry, 2000, 72, 3696-3708.	3.2	78
44	Single-chip microelectronic system to interface with living cells. Biosensors and Bioelectronics, 2007, 22, 2546-2553.	5.3	78
45	Parameters for burst detection. Frontiers in Computational Neuroscience, 2013, 7, 193.	1.2	77
46	CMOS Monolithic Metalâ€"Oxide Sensor System Comprising a Microhotplate and Associated Circuitry. IEEE Sensors Journal, 2004, 4, 9-16.	2.4	76
47	Recording Large Extracellular Spikes in Microchannels along Many Axonal Sites from Individual Neurons. PLoS ONE, 2015, 10, e0118514.	1.1	76
48	A network comprising short and long noncoding RNAs and RNA helicase controls mouse retina architecture. Nature Communications, 2015, 6, 7305.	5.8	76
49	Metal Oxide-Based Monolithic Complementary Metal Oxide Semiconductor Gas Sensor Microsystem. Analytical Chemistry, 2004, 76, 4437-4445.	3.2	75
50	Resonance-enhanced microfluidic impedance cytometer for detection of single bacteria. Lab on A Chip, 2014, 14, 3313.	3.1	72
51	Chiral Discrimination of Inhalation Anesthetics and Methyl Propionates by Thickness Shear Mode Resonators:Â New Insights into the Mechanisms of Enantioselectivity by Cyclodextrins. Analytical Chemistry, 1997, 69, 4017-4031.	3.2	70
52	Monolithic Resonant-Cantilever-Based CMOS Microsystem for Biochemical Sensing. IEEE Transactions on Circuits and Systems I: Regular Papers, 2008, 55, 2551-2560.	3.5	70
53	Liquid-Phase Chemical and Biochemical Detection Using Fully Integrated Magnetically Actuated Complementary Metal Oxide Semiconductor Resonant Cantilever Sensor Systems. Analytical Chemistry, 2007, 79, 1646-1654.	3.2	68
54	Microfluidic single-cell cultivation chip with controllable immobilization and selective release of yeast cells. Lab on A Chip, 2012, 12, 906-915.	3.1	68

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55	On-chip electroporation and impedance spectroscopy of single-cells. Sensors and Actuators B: Chemical, 2015, 210, 82-90.	4.0	68
56	96-Well Format-Based Microfluidic Platform for Parallel Interconnection of Multiple Multicellular Spheroids. Journal of the Association for Laboratory Automation, 2015, 20, 274-282.	2.8	68
57	Fully Integrated CMOS Microsystem for Electrochemical Measurements on 32 Ã— 32 Working Electrodes at 90 Frames Per Second. Analytical Chemistry, 2014, 86, 6425-6432.	3.2	64
58	Effective Use of Molecular Recognition in Gas Sensing:Â Results from Acoustic Wave and in Situ FT-IR Measurements. Analytical Chemistry, 1999, 71, 3022-3035.	3.2	63
59	A CMOS-based microelectrode array for interaction with neuronal cultures. Journal of Neuroscience Methods, 2007, 164, 93-106.	1.3	63
60	Tissue-Transplant Fusion and Vascularization of Myocardial Microtissues and Macrotissues Implanted into Chicken Embryos and Rats. Tissue Engineering, 2006, 12, 2541-2553.	4.9	58
61	Neurons differentiate magnitude and location of mechanical stimuli. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 848-856.	3.3	58
62	Hotplate-based monolithic CMOS microsystems for gas detection and material characterization for operating temperatures up to 500/spl deg/C. IEEE Journal of Solid-State Circuits, 2004, 39, 1202-1207.	3.5	57
63	Applicability of independent component analysis on high-density microelectrode array recordings. Journal of Neurophysiology, 2012, 108, 334-348.	0.9	57
64	Versatile live-cell activity analysis platform for characterization of neuronal dynamics at single-cell and network level. Nature Communications, 2020, 11, 4854.	5.8	56
65	Evaluation of Multitransducer Arrays for the Determination of Organic Vapor Mixtures. Analytical Chemistry, 2008, 80, 227-236.	3.2	55
66	Tracking individual action potentials throughout mammalian axonal arbors. ELife, 2017, 6, .	2.8	55
67	Smart Cell Culture Systems: Integration of Sensors and Actuators into Microphysiological Systems. ACS Chemical Biology, 2018, 13, 1767-1784.	1.6	55
68	Single-Cell Electrical Stimulation Using CMOS-Based High-Density Microelectrode Arrays. Frontiers in Neuroscience, 2019, 13, 208.	1.4	53
69	CMOS Monolithic Metalâ€"Oxide Gas Sensor Microsystems. IEEE Sensors Journal, 2006, 6, 276-286.	2.4	52
70	Electrical Impedance Spectroscopy for Microtissue Spheroid Analysis in Hanging-Drop Networks. ACS Sensors, 2016, 1, 1028-1035.	4.0	52
71	Combination of High-density Microelectrode Array and Patch Clamp Recordings to Enable Studies of Multisynaptic Integration. Scientific Reports, 2017, 7, 978.	1.6	52
72	Recording from defined populations of retinal ganglion cells using a high-density CMOS-integrated microelectrode array with real-time switchable electrode selection. Journal of Neuroscience Methods, 2012, 211, 103-113.	1.3	51

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73	Sub-millisecond closed-loop feedback stimulation between arbitrary sets of individual neurons. Frontiers in Neural Circuits, 2012, 6, 121.	1.4	51
74	Adding the â€˜heartâ€™ to hanging drop networks for microphysiological multi-tissue experiments. Lab on A Chip, 2015, 15, 4138-4147.	3.1	51
75	Electrical Identification and Selective Microstimulation of Neuronal Compartments Based on Features of Extracellular Action Potentials. Scientific Reports, 2016, 6, 31332.	1.6	51
76	How Diverse Retinal Functions Arise from Feedback at the First Visual Synapse. Neuron, 2018, 99, 117-134.e11.	3.8	51
77	Autonomous microfluidic multi-channel chip for real-time PCR with integrated liquid handling. Biomedical Microdevices, 2007, 9, 711-718.	1.4	50
78	In Vitro Platform for Studying Human Insulin Release Dynamics of Single Pancreatic Islet Microtissues at High Resolution. Advanced Biology, 2020, 4, e1900291.	3.0	50
79	Capacitive sensors in CMOS technology with polymer coating. Sensors and Actuators B: Chemical, 1995, 25, 357-361.	4.0	49
80	A synthetic mammalian electro-genetic transcription circuit. Nucleic Acids Research, 2008, 37, e33-e33.	6.5	49
81	Molecular design and characterization of the neuronâ€"microelectrode array interface. Biomaterials, 2007, 28, 5246-5258.	5.7	48
82	Characterization of Single Yeast Cell Phenotypes Using Microfluidic Impedance Cytometry and Optical Imaging. ACS Sensors, 2016, 1, 1020-1027.	4.0	48
83	The Axon Initial Segment is the Dominant Contributor to the Neuron's Extracellular Electrical Potential Landscape. Advanced Biology, 2019, 3, e1800308.	3.0	48
84	Magnetically Actuated Complementary Metal Oxide Semiconductor Resonant Cantilever Gas Sensor Systems. Analytical Chemistry, 2005, 77, 2690-2699.	3.2	46
85	Impedance Spectroscopy and Electrophysiological Imaging of Cells With a High-Density CMOS Microelectrode Array System. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 1356-1368.	2.7	46
86	CMOS microhotplate sensor system for operating temperatures up to 500Â°C. Sensors and Actuators B: Chemical, 2006, 117, 346-352.	4.0	43
87	Wafer-level flame-spray-pyrolysis deposition of gas-sensitive layers on microsensors. Journal of Micromechanics and Microengineering, 2008, 18, 035040.	1.5	41
88	CMOS MEMS - present and future. , 0, , .		40
89	Time-lapse electrical impedance spectroscopy for monitoring the cell cycle of single immobilized S. pombe cells. Scientific Reports, 2015, 5, 17180.	1.6	40
90	22.8 Multi-functional microelectrode array system featuring 59,760 electrodes, 2048 electrophysiology channels, impedance and neurotransmitter measurement units. , 2016, 2016, 394-396.		40

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91	Automated, Multiplexed Electrical Impedance Spectroscopy Platform for Continuous Monitoring of Microtissue Spheroids. Analytical Chemistry, 2016, 88, 10876-10883.	3.2	40
92	CMOS Electro-Chemical DNA-Detection Array with On-Chip ADC. , 2008, , .		39
93	Application of neural-network systems to the dynamic response of polymer-based sensor arrays. Sensors and Actuators B: Chemical, 1995, 27, 232-236.	4.0	38
94	Single-chip mechatronic microsystem for surface imaging and force response studies. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 17011-17015.	3.3	38
95	Technologies to Study Action Potential Propagation With a Focus on HD-MEAs. Frontiers in Cellular Neuroscience, 2019, 13, 159.	1.8	38
96	Chiral Discrimination in the Gas Phase Using Different Transducers:Â Thickness Shear Mode Resonators and Reflectometric Interference Spectroscopy. Analytical Chemistry, 1997, 69, 3058-3068.	3.2	35
97	3D nonlinear modeling of microhotplates in CMOS technology for use as metal-oxide-based gas sensors. Journal of Micromechanics and Microengineering, 2005, 15, 190-200.	1.5	35
98	A Digital CMOS Architecture for a Micro-Hotplate Array. IEEE Journal of Solid-State Circuits, 2007, 42, 441-450.	3.5	35
99	Automatic spike sorting for high-density microelectrode arrays. Journal of Neurophysiology, 2018, 120, 3155-3171.	0.9	35
100	Microfluidic Multitissue Platform for Advanced Embryotoxicity Testing In Vitro. Advanced Science, 2019, 6, 1900294.	5.6	35
101	A Smart Single-Chip Micro-Hotplate-Based Gas Sensor System in CMOS-Technology. Analog Integrated Circuits and Signal Processing, 2004, 39, 275-287.	0.9	34
102	Patterned cell adhesion by self-assembled structures for use with a CMOS cell-based biosensor. Biosensors and Bioelectronics, 2007, 22, 1426-1433.	5.3	34
103	Monolithic Integration of a Silicon Nanowire Field-Effect Transistors Array on a Complementary Metal-Oxide Semiconductor Chip for Biochemical Sensor Applications. Analytical Chemistry, 2015, 87, 9982-9990.	3.2	34
104	CMOS Single Chip Gas Detection Systems â€" Part I. Sensors Update, 2002, 11, 101-155.	0.5	33
105	Characterization of magnetically actuated resonant cantilevers in viscous fluids. Applied Physics Letters, 2005, 87, 162510.	1.5	32
106	Detection and Discrimination Capabilities of a Multitransducer Single-Chip Gas Sensor System. Analytical Chemistry, 2006, 78, 6910-6920.	3.2	32
107	Adaptive Microsensor Systems. Annual Review of Analytical Chemistry, 2010, 3, 255-276.	2.8	32
108	Real-time monitoring of immobilized single yeast cells through multifrequency electrical impedance spectroscopy. Analytical and Bioanalytical Chemistry, 2014, 406, 7015-7025.	1.9	32

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109	Visual coding with a population of direction-selective neurons. Journal of Neurophysiology, 2015, 114, 2485-2499.	0.9	32
110	Scalable Microfluidic Platform for Flexible Configuration of and Experiments with Microtissue Multiorgan Models. SLAS Technology, 2019, 24, 79-95.	1.0	32
111	Transient Signal Analysis Using Complementary Metal Oxide Semiconductor Capacitive Chemical Microsensors. Analytical Chemistry, 2006, 78, 279-290.	3.2	31
112	Integrating impedance-based growth-rate monitoring into a microfluidic cell culture platform for live-cell microscopy. Microsystems and Nanoengineering, 2018, 4, 8.	3.4	31
113	CMOS Single-chip Gas Detection Systems: Part II. Sensors Update, 2003, 12, 51-120.	0.5	30
114	Micro Hot Plate-Based Sensor Array System for the Detection of Environmentally Relevant Gases. Analytical Chemistry, 2006, 78, 6801-6808.	3.2	30
115	Monolithic CMOS multi-transducer gas sensor microsystem for organic and inorganic analytes. Sensors and Actuators B: Chemical, 2007, 126, 431-440.	4.0	30
116	Development of neural population activity toward self-organized criticality. Neuroscience, 2017, 343, 55-65.	1.1	30
117	Electrophysiological Phenotype Characterization of Human iPSCâ€Derived Neuronal Cell Lines by Means of Highâ€Density Microelectrode Arrays. Advanced Biology, 2021, 5, e2000223.	1.4	30
118	Cell-based CMOS sensor and actuator arrays. IEEE Journal of Solid-State Circuits, 2004, 39, 2431-2437.	3.5	29
119	Modified polymers for reliable detection of organic solvents: Thermodynamically controlled selectivities and sensitivities. Sensors and Actuators B: Chemical, 1994, 19, 448-452.	4.0	28
120	Dynamic calibration of QMB polymer-coated sensors by Wiener kernel estimation. Sensors and Actuators B: Chemical, 1995, 27, 275-285.	4.0	28
121	Different strategies for the identification of gas sensing systems. Sensors and Actuators B: Chemical, 1996, 34, 213-223.	4.0	28
122	Single-cell lysis for visual analysis by electron microscopy. Journal of Structural Biology, 2013, 183, 467-473.	1.3	28
123	Microfluidics-based single-step preparation of injection-ready polymeric nanosystems for medical imaging and drug delivery. Nanoscale, 2015, 7, 16983-16993.	2.8	27
124	A smart single-chip micro-hotplate-based chemical sensor system in CMOS-technology. , 0, , .		26
125	Configurable electrodes for capacitive-type sensors and chemical sensors. IEEE Sensors Journal, 2006, 6, 3-10.	2.4	26
126	Versatile, Simple-to-Use Microfluidic Cell-Culturing Chip for Long-Term, High-Resolution, Time-Lapse Imaging. Analytical Chemistry, 2015, 87, 4144-4151.	3.2	26

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127	A single-chip CMOS micro-hotplate array for hazardous-gas detection and material characterization. , 0, , .		25
128	Connecting Î¼-fluidics to electron microscopy. Journal of Structural Biology, 2012, 177, 128-134.	1.3	25
129	Microarray-based MALDI-TOF mass spectrometry enables monitoring of monoclonal antibody production in batch and perfusion cell cultures. Methods, 2016, 104, 33-40.	1.9	25
130	An 11k-Electrode 126-Channel High-Density Microelectrode Array to Interact with Electrogenic Cells. Digest of Technical Papers - IEEE International Solid-State Circuits Conference, 2007, , .	0.0	24
131	Mass-Sensitive Detection of Gas-Phase Volatile Organics Using Disk Microresonators. Analytical Chemistry, 2011, 83, 3305-3311.	3.2	24
132	Gravimetric, dielectric and calorimetric methods for the detection of organic solvent vapours using poly(ether urethane) coatings. Sensors and Actuators B: Chemical, 1996, 34, 356-360.	4.0	23
133	Compact Voltage and Current Stimulation Buffer for High-Density Microelectrode Arrays. IEEE Transactions on Biomedical Circuits and Systems, 2010, 4, 372-378.	2.7	23
134	Seamless Combination of Fluorescence-Activated Cell Sorting and Hanging-Drop Networks for Individual Handling and Culturing of Stem Cells and Microtissue Spheroids. Analytical Chemistry, 2016, 88, 1222-1229.	3.2	23
135	Complexity Optimization and High-Throughput Low-Latency Hardware Implementation of a Multi-Electrode Spike-Sorting Algorithm. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2015, 23, 149-158.	2.7	22
136	Impedance-Based Microfluidic Assay for Automated Antischistosomal Drug Screening. ACS Sensors, 2018, 3, 2613-2620.	4.0	22
137	Extracellular Recording of Entire Neural Networks Using a Dual-Mode Microelectrode Array With 19 584 Electrodes and High SNR. IEEE Journal of Solid-State Circuits, 2021, 56, 2466-2475.	3.5	22
138	A composed neural network for the recognition of gas mixtures. Sensors and Actuators B: Chemical, 1995, 25, 808-812.	4.0	21
139	Selective detection of nitrogen and oxygen containing volatile organic compounds: use of metal-modified polysiloxanes as sensor coatings. Analytica Chimica Acta, 1997, 346, 327-339.	2.6	21
140	Characterization of a microfluidic dispensing system for localised stimulation of cellular networks. Lab on A Chip, 2006, 6, 218.	3.1	21
141	Multi-target electrochemical biosensing enabled by integrated CMOS electronics. Journal of Micromechanics and Microengineering, 2011, 21, 054010.	1.5	21
142	The fibrotic response of primary liver spheroids recapitulates in vivo hepatic stellate cell activation. Biomaterials, 2020, 261, 120335.	5.7	21
143	New method of vaporising volatile organics for gas tests. Sensors and Actuators B: Chemical, 1997, 45, 259-264.	4.0	20
144	Modulation of Cardiomyocyte Electrical Properties Using Regulated Bone Morphogenetic Protein-2 Expression. Tissue Engineering - Part A, 2008, 14, 1969-1988.	1.6	20

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145	Multiple Single-Unit Long-Term Tracking on Organotypic Hippocampal Slices Using High-Density Microelectrode Arrays. Frontiers in Neuroscience, 2016, 10, 537.	1.4	20
146	Dielectrophoresisâ€Assisted Integration of 1024 Carbon Nanotube Sensors into a CMOS Microsystem. Advanced Materials, 2017, 29, 1606852.	11.1	20
147	A CMOS-based integrated-system architecture for a static cantilever array. Sensors and Actuators B: Chemical, 2008, 131, 254-264.	4.0	19
148	Microfluidic Coâ€Culture Platform to Recapitulate the Maternalâ€“Placentalâ€“Embryonic Axis. Advanced Biology, 2021, 5, e2100609.	1.4	19
149	CMOS monolithic microelectrode array for stimulation and recording of natural neural networks. , 0, , .		18
150	Large-Scale Mapping of Axonal Arbors Using High-Density Microelectrode Arrays. Frontiers in Cellular Neuroscience, 2019, 13, 404.	1.8	18
151	Nanochemical surface analyzer in CMOS technology. Ultramicroscopy, 2002, 91, 21-27.	0.8	17
152	Integrated chemical microsensor systems in CMOS-technology. , 0, , .		17
153	Carbon-Nanotube-Based Monolithic CMOS Platform for Electrochemical Detection of Neurotransmitter Glutamate. Sensors, 2019, 19, 3080.	2.1	17
154	Accurate signal-source localization in brain slices by means of high-density microelectrode arrays. Scientific Reports, 2019, 9, 788.	1.6	17
155	Detection of organic solvents with reliable chemical sensors based on cellulose derivatives. Sensors and Actuators B: Chemical, 1995, 25, 443-447.	4.0	16
156	Polymer Coated Capacitive Microintegrated Gas Sensor. , 0, , .		16
157	Cortical Axons, Isolated in Channels, Display Activity-Dependent Signal Modulation as a Result of Targeted Stimulation. Frontiers in Neuroscience, 2016, 10, 83.	1.4	16
158	Predicting Metabolismâ€Related Drugâ€“Drug Interactions Using a Microphysiological Multitissue System. Advanced Biology, 2020, 4, e2000079.	3.0	16
159	Impedance Imaging of Cells and Tissues: Design and Applications. BME Frontiers, 2022, 2022, .	2.2	16
160	Connecting heat transfer macromodels for array MEMS structures. Journal of Micromechanics and Microengineering, 2005, 15, 1205-1214.	1.5	15
161	CMOS microelectrode array for bidirectional interaction with neuronal networks. , 0, , .		15
162	Sensor system including silicon nanowire ion sensitive FET arrays and CMOS readout. Sensors and Actuators B: Chemical, 2014, 204, 568-577.	4.0	15

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163	A method for electrophysiological characterization of hamster retinal ganglion cells using a high-density CMOS microelectrode array. Frontiers in Neuroscience, 2015, 9, 360.	1.4	15
164	Tubing-Free Microfluidic Microtissue Culture System Featuring Gradual, in vivo-Like Substance Exposure Profiles. Frontiers in Bioengineering and Biotechnology, 2019, 7, 72.	2.0	15
165	Integrated Microphysiological Systems: Transferable Organ Models and Recirculating Flow. Advanced Biology, 2019, 3, 1900018.	3.0	15
166	CHIME: CMOS-Hosted in vivo Microelectrodes for Massively Scalable Neuronal Recordings. Frontiers in Neuroscience, 2020, 14, 834.	1.4	15
167	CMOS-Based Monolithic Controllers for Smart Sensors Comprising Micromembranes and Microcantilevers. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2007, 54, 141-152.	0.1	14
168	Dual-mode Microelectrode Array Featuring 20k Electrodes and High SNR for Extracellular Recording of Neural Networks. , 2018, 2018, .		14
169	A Microfluidic Hanging-Drop-Based Islet Perifusion System for Studying Glucose-Stimulated Insulin Secretion From Multiple Individual Pancreatic Islets. Frontiers in Bioengineering and Biotechnology, 2021, 9, 674431.	2.0	14
170	What is the future of electrical impedance spectroscopy in flow cytometry?. Biomicrofluidics, 2021, 15, 061302.	1.2	14
171	Cell Recordings with a CMOS High-density Microelectrode Array. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 167-70.	0.5	13
172	Microfluidic Hydrogel Hangingâ€Drop Network for Longâ€Term Culturing of 3D Microtissues and Simultaneous Highâ€Resolution Imaging. Advanced Biology, 2018, 2, 1800054.	3.0	13
173	Stimulation and Artifact-Suppression Techniques for <i>In Vitro</i> High-Density Microelectrode Array Systems. IEEE Transactions on Biomedical Engineering, 2019, 66, 2481-2490.	2.5	13
174	Characterization of a long-term mouse primary liver 3D tissue model recapitulating innate-immune responses and drug-induced liver toxicity. PLoS ONE, 2020, 15, e0235745.	1.1	13
175	Reflectance Infrared Spectroscopy on Operating Surface Acoustic Wave Chemical Sensors during Exposure to Gas-Phase Analytes. Analytical Chemistry, 1999, 71, 3615-3621.	3.2	12
176	A perforated CMOS microchip for immobilization and activity monitoring of electrogenic cells. Journal of Micromechanics and Microengineering, 2007, 17, 462-471.	1.5	12
177	Opposite Signs of Capacitive Microsensor Signals upon Exposure to the Enantiomers of Methyl Propionate Compounds. Angewandte Chemie - International Edition, 2008, 47, 913-916.	7.2	12
178	Chiral Sensing Using a Complementary Metalâˆ’Oxide Semiconductor-Integrated Three-Transducer Microsensor System. Analytical Chemistry, 2009, 81, 9353-9364.	3.2	12
179	On-chip lysis of mammalian cells through a handheld corona device. Lab on A Chip, 2015, 15, 2990-2997.	3.1	12
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