Nakwon Choi

List of Publications by Year
in descending order

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98 papers	5,394 citations	125106 35 h-index	100535 70 g-index
102 all docs	102 docs citations	102 times ranked	7995 citing authors

#	Article	IF	Citations
1	Interference-free, lightweight wireless neural probe system for investigating brain activity during natural competition. Biosensors and Bioelectronics, 2022, 195, 113665.	5.3	13
2	Clinical application of serological Alzheimer's disease diagnosis using a highly sensitive biosensor with hydrogel-enhanced dielectrophoretic force. Biosensors and Bioelectronics, 2022, 195, 113668.	5.3	6
3	Triculture Model of In Vitro BBB and its Application to Study BBBâ€Associated Chemosensitivity and Drug Delivery in Glioblastoma. Advanced Functional Materials, 2022, 32, 2106860.	7.8	27
4	A Multimodal Multiâ€Shank Fluorescence Neural Probe for Cellâ€Typeâ€Specific Electrophysiology in Multiple Regions across a Neural Circuit. Advanced Science, 2022, 9, e2103564.	5.6	10
5	Brain physiome: A concept bridging in vitro 3D brain models and in silico models for predicting drug toxicity in the brain. Bioactive Materials, 2022, 13, 135-148.	8.6	10
6	Three-Dimensional Axotomy and Regeneration on Open-Access Microfluidic Platform. IEEE Transactions on Nanobioscience, 2022, 21, 395-404.	2.2	4
7	A Hybrid Zeolite Membrane-Based Breakthrough for Simultaneous CO₂ Capture and CH₄ Upgrading from Biogas. ACS Applied Materials & Interfaces, 2022, 14, 2893-2907.	4.0	11
8	Vascularized Lung Cancer Model for Evaluating the Promoted Transport of Anticancer Drugs and Immune Cells in an Engineered Tumor Microenvironment. Advanced Healthcare Materials, 2022, 11, e2102581.	3.9	23
9	Triculture Model of In Vitro BBB and its Application to Study BBBâ€Associated Chemosensitivity and Drug Delivery in Glioblastoma (Adv. Funct. Mater. 10/2022). Advanced Functional Materials, 2022, 32, .	7.8	0
10	Tunable and scalable fabrication of block copolymer-based 3D polymorphic artificial cell membrane array. Nature Communications, 2022, 13, 1261.	5.8	6
11	Visualization of differential GPCR crosstalk in DRD1-DRD2 heterodimer upon different dopamine levels. Progress in Neurobiology, 2022, 213, 102266.	2.8	8
12	Multiplex SNP Genotyping Using SWITCH: Sequenceâ€Specific Nanoparticle with Interpretative Toeholdâ€Mediated Sequence Decoding in Hydrogel. Small, 2022, 18, e2105538.	5.2	7
13	An Extrinsicâ€Poreâ€Containing Molecular Sieve Film: A Robust, Highâ€Throughput Membrane Filter. Angewandte Chemie - International Edition, 2021, 60, 1323-1331.	7.2	11
14	An Extrinsicâ€Poreâ€Containing Molecular Sieve Film: A Robust, Highâ€Throughput Membrane Filter. Angewandte Chemie, 2021, 133, 1343-1351.	1.6	4
15	Unavoidable but minimizable microdefects in a polycrystalline zeolite membrane: its remarkable performance for wet CO₂/CH₄separation. Journal of Materials Chemistry A, 2021, 9, 12593-12605.	5.2	17
16	Reconstruction of Muscle Fascicleâ€Like Tissues by Anisotropic 3D Patterning. Advanced Functional Materials, 2021, 31, 2006227.	7.8	21
17	Emerging Brainâ€Pathophysiologyâ€Mimetic Platforms for Studying Neurodegenerative Diseases: Brain Organoids and Brainsâ€onâ€aâ€Chip. Advanced Healthcare Materials, 2021, 10, e2002119.	3.9	27
18	An engineered neurovascular unit for modeling neuroinflammation. Biofabrication, 2021, 13, 035039.	3.7	18

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19	Fungal brain infection modelled in a human-neurovascular-unit-on-a-chip with a functional bloodâ€“brain barrier. Nature Biomedical Engineering, 2021, 5, 830-846.	11.6	83
20	Microfluidic device with brain extracellular matrix promotes structural and functional maturation of human brain organoids. Nature Communications, 2021, 12, 4730.	5.8	164
21	Engineered neural circuits for modeling brain physiology and neuropathology. Acta Biomaterialia, 2021, 132, 379-400.	4.1	25
22	Hydrogel-based hybridization chain reaction (HCR) for detection of urinary exosomal miRNAs as a diagnostic tool of prostate cancer. Biosensors and Bioelectronics, 2021, 192, 113504.	5.3	50
23	Bimodal neural probe for highly co-localized chemical and electrical monitoring of neural activities in vivo. Biosensors and Bioelectronics, 2021, 191, 113473.	5.3	14
24	3D high-density microelectrode array with optical stimulation and drug delivery for investigating neural circuit dynamics. Nature Communications, 2021, 12, 492.	5.8	101
25	Inhibition of tumor progression and M2 microglial polarization by extracellular vesicle-mediated microRNA-124 in a 3D microfluidic glioblastoma microenvironment. Theranostics, 2021, 11, 9687-9704.	4.6	38
26	Highly sensitive three-dimensional interdigitated microelectrode biosensors embedded with porosity tunable hydrogel for detecting proteins. Sensors and Actuators B: Chemical, 2020, 302, 127190.	4.0	13
27	Microphysiological systems for recapitulating physiology and function of blood-brain barrier. Biomaterials, 2020, 232, 119732.	5.7	34
28	Development of an Anisotropically Organized Brain dECM Hydrogel-Based 3D Neuronal Culture Platform for Recapitulating the Brain Microenvironment in Vivo. ACS Biomaterials Science and Engineering, 2020, 6, 610-620.	2.6	27
29	Three-tissue microphysiological system for studying inflammatory responses in gut-liver Axis. Biomedical Microdevices, 2020, 22, 65.	1.4	15
30	Cancer-Associated Fibroblasts Differentiated by Exosomes Isolated from Cancer Cells Promote Cancer Cell Invasion. International Journal of Molecular Sciences, 2020, 21, 8153.	1.8	13
31	Highly-efficient microfluidic ultrasonic transducers assisted gDNA extraction system in whole blood for POCT applications. Sensors and Actuators B: Chemical, 2020, 319, 128317.	4.0	13
32	Artifactâ€Free 2D Mapping of Neural Activity In Vivo through Transparent Gold Nanonetwork Array. Advanced Functional Materials, 2020, 30, 2000896.	7.8	54
33	An unprecedented c-oriented DDR@MWW zeolite hybrid membrane: new insights into H2-permselectivities via six membered-ring pores. Journal of Materials Chemistry A, 2020, 8, 14071-14081.	5.2	10
34	Fabrication of Highly Dense Silk Fibroin Biomemristor Array and Its Resistive Switching Characteristics. Advanced Materials Technologies, 2020, 5, 1900991.	3.0	27
35	On the effects of water exposure of as-synthesized LTA membranes on their structural properties and dehydration performances. Separation and Purification Technology, 2020, 238, 116493.	3.9	3
36	Microstructural control of a SSZ-13 zeolite film via rapid thermal processing. Journal of Membrane Science, 2019, 591, 117342.	4.1	24

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37	Construction of pancreasâ€“muscleâ€“liver microphysiological system (MPS) for reproducing glucose metabolism. Biotechnology and Bioengineering, 2019, 116, 3433-3445.	1.7	22
38	A MEMS ultrasound stimulation system for modulation of neural circuits with high spatial resolution in vitro. Microsystems and Nanoengineering, 2019, 5, 28.	3.4	24
39	Brain-on-a-chip: A history of development and future perspective. Biomicrofluidics, 2019, 13, 051301.	1.2	78
40	An Heteroâ€Epitaxially Grown Zeolite Membrane. Angewandte Chemie, 2019, 131, 18827-18835.	1.6	10
41	An Heteroâ€Epitaxially Grown Zeolite Membrane. Angewandte Chemie - International Edition, 2019, 58, 18654-18662.	7.2	38
42	Multifunctional multi-shank neural probe for investigating and modulating long-range neural circuits in vivo. Nature Communications, 2019, 10, 3777.	5.8	101
43	Consideration of the Mechanical Properties of Hydrogels for Brain Tissue Engineering and Brain-on-a-chip. Biochip Journal, 2019, 13, 8-19.	2.5	49
44	Microphysiological Systems as Enabling Tools for Modeling Complexity in the Tumor Microenvironment and Accelerating Cancer Drug Development. Advanced Functional Materials, 2019, 29, 1807553.	7.8	32
45	Pharmacokinetic and pharmacodynamic insights from microfluidic intestine-on-a-chip models. Expert Opinion on Drug Metabolism and Toxicology, 2019, 15, 1005-1019.	1.5	35
46	Chabazite-Type Zeolite Membranes for Effective CO₂ Separation: The Role of Hydrophobicity and Defect Structure. ACS Applied Materials & Interfaces, 2019, 11, 3946-3960.	4.0	53
47	A microfluidic chip with gravityâ€induced unidirectional flow for perfusion cell culture. Biotechnology Progress, 2019, 35, e2701.	1.3	35
48	Wafer-Scale Multilayer Fabrication for Silk Fibroin-Based Microelectronics. ACS Applied Materials & Interfaces, 2019, 11, 115-124.	4.0	22
49	Quantitative elucidation of the elusive role of defects in polycrystalline MFI zeolite membranes on xylene separation performance. Journal of Membrane Science, 2019, 569, 91-103.	4.1	24
50	Probing characteristics of cancer cells cultured on engineered platforms simulating different microenvironments. Artificial Cells, Nanomedicine and Biotechnology, 2018, 46, 1170-1179.	1.9	6
51	Wafer-scale fabrication of biodegradable silk-fibroin-based memristors. , 2018, , .		1
52	Hydrogel micropost-based qPCR for multiplex detection of miRNAs associated with Alzheimer's disease. Biosensors and Bioelectronics, 2018, 101, 235-244.	5.3	28
53	Organic template-free synthesis of high-quality CHA type zeolite membranes for carbon dioxide separation. Journal of Membrane Science, 2018, 549, 46-59.	4.1	47
54	MEMS devices for drug delivery. Advanced Drug Delivery Reviews, 2018, 128, 132-147.	6.6	61

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55	Tightly Sealed 3D Lipid Structure Monolithically Generated on Transparent SU-8 Microwell Arrays for Biosensor Applications. ACS Applied Materials & Interfaces, 2018, 10, 40401-40410.	4.0	9
56	Chemoresistance of Cancer Cells: Requirements of Tumor Microenvironment-mimicking In Vitro Models in Anti-Cancer Drug Development. Theranostics, 2018, 8, 5259-5275.	4.6	138
57	Fabrication of Multi-layered Macroscopic Hydrogel Scaffold Composed of Multiple Components by Precise Control of UV Energy. Biochip Journal, 2018, 12, 280-286.	2.5	8
58	A high-resolution lensless fluorescence imaging system using membrane deflection for reducing gap between samples and image sensor. , 2018, , .		0
59	Cancer-derived exosomes trigger endothelial to mesenchymal transition followed by the induction of cancer-associated fibroblasts. Acta Biomaterialia, 2018, 76, 146-153.	4.1	116
60	Healing of Microdefects in SSZ-13 Membranes via Filling with Dye Molecules and Its Effect on Dry and Wet CO₂ Separations. Chemistry of Materials, 2018, 30, 3346-3358.	3.2	48
61	Label-free detection of prostate specific antigen (PSA) using a bridge-shaped PZT resonator. Microsystem Technologies, 2017, 23, 1207-1214.	1.2	10
62	Anisotropically organized three-dimensional culture platform for reconstruction of a hippocampal neural network. Nature Communications, 2017, 8, 14346.	5.8	90
63	Microfluidic Gut-liver chip for reproducing the first pass metabolism. Biomedical Microdevices, 2017, 19, 4.	1.4	140
64	Fabrication of micrometer-scale porous gelatin scaffolds for 3D cell culture. Journal of Industrial and Engineering Chemistry, 2017, 50, 183-189.	2.9	15
65	An oriented, siliceous deca-dodecasil 3R (DDR) zeolite film for effective carbon capture: insight into its hydrophobic effect. Journal of Materials Chemistry A, 2017, 5, 11246-11254.	5.2	52
66	Flow lithography in ultraviolet-curable polydimethylsiloxane microfluidic chips. Biomicrofluidics, 2017, 11, 024120.	1.2	9
67	Quantitative analysis of hydrogen peroxide using ratiometric fluorescent probe-doped silica nanoparticles. Toxicology and Environmental Health Sciences, 2017, 9, 108-115.	1.1	8
68	Functional Characterization of Resting and Adenovirus-Induced Reactive Astrocytes in Three-Dimensional Culture. Experimental Neurobiology, 2017, 26, 158-167.	0.7	15
69	Microtechnologyâ€based organ systems and wholeâ€body models for drug screening. Biotechnology Journal, 2016, 11, 746-756.	1.8	22
70	Extensible Multiplex Real-time PCR of MicroRNA Using Microparticles. Scientific Reports, 2016, 6, 22975.	1.6	19
71	Fabrication of degradable carboxymethyl cellulose (CMC) microneedle with laser writing and replica molding process for enhancement of transdermal drug delivery. Biotechnology and Bioprocess Engineering, 2016, 21, 110-118.	1.4	55
72	3D multi-functional neural probe array for mapping functional connectivities in a 3D neuron chip. , 2016, , .		2

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73	A new MEMS neural probe system integrated with push-pull microfluidic channels and biosensors for real-time monitoring of neurochemicals. , 2016, , .		1
74	Mono-dispersed DDR zeolite particles by seeded growth and their CO 2 , N 2 , and H 2 O adsorption properties. Chemical Engineering Journal, 2016, 306, 876-888.	6.6	18
75	Graphene-Iodine Nanocomposites: Highly Potent Bacterial Inhibitors that are Bio-compatible with Human Cells. Scientific Reports, 2016, 6, 20015.	1.6	38
76	Vertically encoded tetragonal hydrogel microparticles for multiplexed detection of miRNAs associated with Alzheimer's disease. Analyst, The, 2016, 141, 4578-4586.	1.7	28
77	Multiplexed Detection of Epigenetic Markers Using Quantum Dot (QD)-Encoded Hydrogel Microparticles. Analytical Chemistry, 2016, 88, 4259-4268.	3.2	20
78	In vivo optical modulation of neural signals using monolithically integrated two-dimensional neural probe arrays. Scientific Reports, 2015, 5, 15466.	1.6	82
79	Collagen-based brain microvasculature model in vitro using three-dimensional printed template. Biomicrofluidics, 2015, 9, 024115.	1.2	123
80	Neural probes with multi-drug delivery capability. Lab on A Chip, 2015, 15, 3730-3737.	3.1	56
81	Thermosensitive Structural Changes and Adsorption Properties of Zeolitic Imidazolate Framework-8 (ZIF-8). Journal of Physical Chemistry C, 2015, 119, 8226-8237.	1.5	16
82	A new thin silicon microneedle with an embedded microchannel for deep brain drug infusion. Sensors and Actuators B: Chemical, 2015, 209, 413-422.	4.0	33
83	Chemical Vapor Deposition on Chabazite (CHA) Zeolite Membranes for Effective Post-Combustion CO₂ Capture. Environmental Science & Technology, 2014, 48, 14828-14836.	4.6	36
84	MEMS neural probe array for multiple-site optical stimulation with low-loss optical waveguide by using thick glass cladding layer. , 2014, , .		6
85	A microfluidic device for evaluating the dynamics of the metabolism-dependent antioxidant activity of nutrients. Lab on A Chip, 2014, 14, 2948.	3.1	13
86	Thermal Structural Transitions and Carbon Dioxide Adsorption Properties of Zeolitic Imidazolate Framework-7 (ZIF-7). Journal of the American Chemical Society, 2014, 136, 7961-7971.	6.6	102
87	Formation of microvascular networks in vitro. Nature Protocols, 2013, 8, 1820-1836.	5.5	164
88	Multiplexed Detection of mRNA Using Porosity-Tuned Hydrogel Microparticles. Analytical Chemistry, 2012, 84, 9370-9378.	3.2	113
89	In vitro microvessels for the study of angiogenesis and thrombosis. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 9342-9347.	3.3	764
90	Phosphorescent nanoparticles for quantitative measurements of oxygen profiles inÂvitro and inÂvivo. Biomaterials, 2012, 33, 2710-2722.	5.7	54

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91	Microstructured templates for directed growth and vascularization of soft tissue inÂvivo. Biomaterials, 2011, 32, 5391-5401.	5.7	47
92	Dense type I collagen matrices that support cellular remodeling and microfabrication for studies of tumor angiogenesis and vasculogenesis in vitro. Biomaterials, 2010, 31, 8596-8607.	5.7	306
93	Oxygen-Controlled Three-Dimensional Cultures to Analyze Tumor Angiogenesis. Tissue Engineering - Part A, 2010, 16, 2133-2141.	1.6	89
94	Integration of layered chondrocyte-seeded alginate hydrogel scaffolds. Biomaterials, 2007, 28, 2987-2993.	5.7	91
95	Microfluidic scaffolds for tissue engineering. Nature Materials, 2007, 6, 908-915.	13.3	550
96	Fabrication and validation of a multi-channel type microfluidic chip for electrokinetic streaming potential devices. Lab on A Chip, 2006, 6, 302.	3.1	30
97	A Microfluidic Biomaterial. Journal of the American Chemical Society, 2005, 127, 13788-13789.	6.6	211
98	Microfluidic analysis of electrokinetic streaming potential induced by microflows of monovalent electrolyte solution. Journal of Micromechanics and Microengineering, 2005, 15, 710-719.	1.5	49