Shaochen Chen

List of Publications by Citations

108 papers	8,398 citations	47 h-index	91 g-index
115 ext. papers	10,074 ext. citations	11.6 avg, IF	6.14 L-index

#	Paper	IF	Citations
108	Interplay of matrix stiffness and protein tethering in stem cell differentiation. *Nature Materials*, **2014**, 13, 979-87	27	653
107	Deterministically patterned biomimetic human iPSC-derived hepatic model via rapid 3D bioprinting. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 2206-11	11.5	516
106	Microfabrication of complex porous tissue engineering scaffolds using 3D projection stereolithography. *Biomaterials*, **2012**, 33, 3824-34	15.6	474
105	3D printing of functional biomaterials for tissue engineering. *Current Opinion in Biotechnology*, **2016**, 40, 103-112	11.4	382
104	Direct 3D bioprinting of prevascularized tissue constructs with complex microarchitecture. *Biomaterials*, **2017**, 124, 106-115	15.6	313
103	Microfabricated biomaterials for engineering 3D tissues. *Advanced Materials*, **2012**, 24, 1782-804	24	310
102	Biomimetic 3D-printed scaffolds for spinal cord injury repair. *Nature Medicine*, **2019**, 25, 263-269	50.5	263
101	Rapid fabrication of complex 3D extracellular microenvironments by dynamic optical projection stereolithography. *Advanced Materials*, **2012**, 24, 4266-70	24	251
100	A digital micro-mirror device-based system for the microfabrication of complex, spatially patterned tissue engineering scaffolds. *Journal of Biomedical Materials Research - Part A*, **2006**, 77, 396-405	5.4	246
99	3D optical printing of piezoelectric nanoparticle-polymer composite materials. *ACS Nano*, **2014**, 8, 9799-806	13.7	224
98	Bio-inspired detoxification using 3D-printed hydrogel nanocomposites. *Nature Communications*, **2014**, 5, 3774	17.4	219
97	3D bioprinting of functional tissue models for personalized drug screening and in vitro disease modeling. *Advanced Drug Delivery Reviews*, **2018**, 132, 235-251	18.5	201
96	3D-Printed Artificial Microfish. *Advanced Materials*, **2015**, 27, 4411-4417	24	198
95	Microfluidics-Enabled Multimaterial Maskless Stereolithographic Bioprinting. *Advanced Materials*, **2018**, 30, e1800242	24	190
94	3D printing of biomimetic microstructures for cancer cell migration. *Biomedical Microdevices*, **2014**, 16, 127-32	3.7	178
93	Light-assisted direct-write of 3D functional biomaterials. *Lab on A Chip*, **2014**, 14, 268-75	7.2	172
92	Laser-layered microfabrication of spatially patterned functionalized tissue-engineering scaffolds. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2005**, 75, 414-24	3.5	164

91	WNT7A and PAX6 define corneal epithelium homeostasis and pathogenesis. *Nature*, **2014**, 511, 358-61	50.4	148
90	Digital microfabrication of user-defined 3D microstructures in cell-laden hydrogels. *Biotechnology and Bioengineering*, **2013**, 110, 3038-47	4.9	144
89	Lens regeneration using endogenous stem cells with gain of visual function. *Nature*, **2016**, 531, 323-8	50.4	125
88	Scanningless and continuous 3D bioprinting of human tissues with decellularized extracellular matrix. *Biomaterials*, **2019**, 194, 1-13	15.6	121
87	Rapid 3D bioprinting of decellularized extracellular matrix with regionally varied mechanical properties and biomimetic microarchitecture. *Biomaterials*, **2018**, 185, 310-321	15.6	118
86	Digital micromirror device projection printing system for meniscus tissue engineering. *Acta Biomaterialia*, **2013**, 9, 7218-26	10.8	117
85	Photopolymerizable Biomaterials and Light-Based 3D Printing Strategies for Biomedical Applications. *Chemical Reviews*, **2020**, 120, 10695-10743	68.1	112
84	Three-Dimensional Polymer Constructs Exhibiting a Tunable Negative Poisson\'s Ratio. *Advanced Functional Materials*, **2011**, 21, 2712-2720	15.6	111
83	Rapid continuous 3D printing of customizable peripheral nerve guidance conduits. *Materials Today*, **2018**, 21, 951-959	21.8	110
82	Solid freeform fabrication of designer scaffolds of hyaluronic acid for nerve tissue engineering. *Biomedical Microdevices*, **2011**, 13, 983-93	3.7	100
81	Cancer cell migration within 3D layer-by-layer microfabricated photocrosslinked PEG scaffolds with tunable stiffness. *Biomaterials*, **2012**, 33, 7064-70	15.6	94
80	3D-engineering of Cellularized Conduits for Peripheral Nerve Regeneration. *Scientific Reports*, **2016** , 6, 32184	4.9	91
79	Inaugural Charles River World Congress on Animal Models in Drug Discovery and Development. *Journal of Translational Medicine*, **2017**, 15,	8.5	78
78	Projection Microfabrication of Three-Dimensional Scaffolds for Tissue Engineering. *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, **2008**, 130,	3.3	78
77	Tuning the Poisson\'s Ratio of Biomaterials for Investigating Cellular Response. *Advanced Functional Materials*, **2013**, 23, 3226	15.6	74
76	Noninvasive in vivo 3D bioprinting. *Science Advances*, **2020**, 6, eaba7406	14.3	72
75	Structural Reinforcement of Cell-Laden Hydrogels with Microfabricated Three Dimensional Scaffolds. *Biomaterials Science*, **2014**, 2, 703-709	7.4	71
74	Rapid 3D printing of functional nanoparticle-enhanced conduits for effective nerve repair. *Acta Biomaterialia*, **2019**, 90, 49-59	10.8	70

73	Three-dimensional direct cell patterning in collagen hydrogels with near-infrared femtosecond laser. *Scientific Reports*, **2015**, 5, 17203	4.9	67
72	Three-dimensional bioprinted glioblastoma microenvironments model cellular dependencies and immune interactions. *Cell Research*, **2020**, 30, 833-853	24.7	63
71	Fabrication of three-dimensional scaffolds for heterogeneous tissue engineering. *Biomedical Microdevices*, **2010**, 12, 721-5	3.7	63
70	Design and 3D Printing of Hydrogel Scaffolds with Fractal Geometries. *ACS Biomaterials Science and Engineering*, **2016**, 2, 1763-1770	5.5	61
69	Three-dimensional scaffolding to investigate neuronal derivatives of human embryonic stem cells. *Biomedical Microdevices*, **2012**, 14, 829-838	3.7	56
68	3D-Printing of Functional Biomedical Microdevices via Light- and Extrusion-Based Approaches. *Small Methods*, **2018**, 2, 1700277	12.8	54
67	Nanoscale 3D printing of hydrogels for cellular tissue engineering. *Journal of Materials Chemistry B*, **2018**, 6, 2187-2197	7.3	54
66	Hippocampal neurons respond uniquely to topographies of various sizes and shapes. *Biofabrication*, **2010**, 2, 035005	10.5	53
65	A Three-dimensional Polymer Scaffolding Material Exhibiting a Zero Poisson\'s Ratio. *Soft Matter*, **2012**, 8, 4946-4951	3.6	52
64	Spatial tuning of negative and positive Poisson\'s ratio in a multi-layer scaffold. *Acta Biomaterialia*, **2012**, 8, 2587-94	10.8	52
63	Projection-Based 3D Printing of Cell Patterning Scaffolds with Multiscale Channels. *ACS Applied Materials & Interfaces*, **2018**, 10, 19428-19435	9.5	50
62	Fabrication of Biodegradable Polymeric Micro-Devices Using Laser Micromachining. *Biomedical Microdevices*, **2002**, 4, 105-109	3.7	48
61	Continuous Optical 3D Printing of Green Aliphatic Polyurethanes. *ACS Applied Materials & Interfaces*, **2017**, 9, 836-844	9.5	40
60	Direct 3D-printing of cell-laden constructs in microfluidic architectures. *Lab on A Chip*, **2016**, 16, 1430-8	7.2	40
59	Direct write of microlens array using digital projection photopolymerization. *Applied Physics Letters*, **2008**, 92, 041109	3.4	38
58	Digital Plasmonic Patterning for Localized Tuning of Hydrogel Stiffness. *Advanced Functional Materials*, **2014**, 24, 4922-4926	15.6	35
57	Femtosecond laser nanofabrication of hydrogel biomaterial. *MRS Bulletin*, **2011**, 36, 1028-1033	3.2	34
56	Selective axonal growth of embryonic hippocampal neurons according to topographic features of various sizes and shapes. *International Journal of Nanomedicine*, **2010**, 6, 45-57	7.3	33

55	Direct 3D bioprinting of cardiac micro-tissues mimicking native myocardium. *Biomaterials*, **2020**, 256, 120204	15.6	32
54	Bionic 3D printed corals. *Nature Communications*, **2020**, 11, 1748	17.4	32
53	3D printed micro-scale force gauge arrays to improve human cardiac tissue maturation and enable high throughput drug testing. *Acta Biomaterialia*, **2019**, 95, 319-327	10.8	29
52	Rapid 3D bioprinting of cardiac tissue models using human embryonic stem cell-derived cardiomyocytes. *Bioprinting*, **2019**, 13,	7	29
51	Relative impact of uniaxial alignment vs. form-induced stress on differentiation of human adipose derived stem cells. *Biomaterials*, **2013**, 34, 9812-8	15.6	28
50	Canonical Wnt5b Signaling Directs Outlying Nkx2.5+ Mesoderm into Pacemaker Cardiomyocytes. *Developmental Cell*, **2019**, 50, 729-743.e5	10.2	27
49	A 3D Tissue-Printing Approach for Validation of Diffusion Tensor Imaging in Skeletal Muscle. *Tissue Engineering - Part A*, **2017**, 23, 980-988	3.9	26
48	A 3D-Engineered Conformal Implant Releases DNA Nanocomplexs for Eradicating the Postsurgery Residual Glioblastoma. *Advanced Science*, **2017**, 4, 1600491	13.6	25
47	Oncogenic human herpesvirus hijacks proline metabolism for tumorigenesis. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 8083-8093	11.5	25
46	Induction of retinal progenitors and neurons from mammalian M□ller glia under defined conditions. *Journal of Biological Chemistry*, **2014**, 289, 11945-11951	5.4	25
45	A Tubular Biomaterial Construct Exhibiting a Negative Poisson¥s Ratio. *PLoS ONE*, **2016**, 11, e0155681	3.7	25
44	3D-printed biomaterials with regional auxetic properties. *Journal of the Mechanical Behavior of Biomedical Materials*, **2017**, 76, 145-152	4.1	24
43	3D bioprinting of hydrogels for retina cell culturing. *Bioprinting*, **2018**, 11, e00029-e00029	7	22
42	Controlled Growth Factor Release in 3D-Printed Hydrogels. *Advanced Healthcare Materials*, **2020**, 9, e1900977	10.1	20
41	Two-dimensional optical spatial differentiation and high-contrast imaging. *National Science Review*, **2021**, 8, nwaa176	10.8	20
40	High-fidelity 3D Printing using Flashing Photopolymerization. *Additive Manufacturing*, **2019**, 30, 100834-100834	6.1	19
39	High throughput direct 3D bioprinting in multiwell plates. *Biofabrication*, **2020**,	10.5	19
38	3D printing of a biocompatible double network elastomer with digital control of mechanical properties. *Advanced Functional Materials*, **2020**, 30, 1910391	15.6	17

37	Modulating physical, chemical, and biological properties in 3D printing for tissue engineering applications. *Applied Physics Reviews*, **2018**, 5,	17.3	17
36	A Programmable DNA Double-Write Material: Synergy of Photolithography and Self-Assembly Nanofabrication. *ACS Applied Materials & Interfaces*, **2017**, 9, 22-28	9.5	16
35	Nanostructuring Borosilicate Glass With Near-Field Enhanced Energy Using a Femtosecond Laser Pulse. *Journal of Heat Transfer*, **2007**, 129, 53-59	1.8	16
34	Submicron ripple formation on glass surface upon laser-nanosphere interaction. *Journal of Applied Physics*, **2004**, 95, 5049-5052	2.5	16
33	Rapid 3D Bioprinting of Glioblastoma Model Mimicking Native Biophysical Heterogeneity. *Small*, **2021**, 17, e2006050	11	16
32	Development of a bone reconstruction technique using a solid free-form fabrication (SFF)-based drug releasing scaffold and adipose-derived stem cells. *Journal of Biomedical Materials Research - Part A*, **2013**, 101, 1865-75	5.4	14
31	Biomaterials and 3D Bioprinting Strategies to Model Glioblastoma and the Blood-Brain Barrier. *Advanced Materials*, **2021**, 33, e2004776	24	14
30	Three-Dimensional Printing of Bisphenol A-Free Polycarbonates. *ACS Applied Materials & Interfaces*, **2018**, 10, 5331-5339	9.5	13
29	Tunable Surface and Matrix Chemistries in Optically Printed (0-3) Piezoelectric Nanocomposites. *ACS Applied Materials & Interfaces*, **2016**, 8, 33394-33398	9.5	13
28	3D Printable Non-Isocyanate Polyurethanes with Tunable Material Properties. *Polymer Chemistry*, **2019**, 10, 4665-4674	4.9	12
27	Integrated Two-Photon Polymerization With Nanoimprinting for Direct Digital Nanomanufacturing. *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, **2010**, 132,	3.3	12
26	Light-powered micromotor driven by geometry-assisted, asymmetric photon-heating and subsequent gas convection. *Applied Physics Letters*, **2010**, 96, 213509	3.4	12
25	A sequential 3D bioprinting and orthogonal bioconjugation approach for precision tissue engineering. *Biomaterials*, **2020**, 258, 120294	15.6	11
24	Undulate microarray fabrication on polymer film using standing surface acoustic waves and ultraviolet polymerization. *Applied Physics Letters*, **2016**, 108, 241911	3.4	10
23	Micro-well texture printed into PEG hydrogels using the FILM nanomanufacturing process affects the behavior of preadipocytes. *Biomedical Microdevices*, **2008**, 10, 839-849	3.7	9
22	Mitigating Scattering Effects in Light-Based Three-Dimensional Printing Using Machine Learning. *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, **2020**, 142,	3.3	8
21	Rapid bioprinting of conjunctival stem cell micro-constructs for subconjunctival ocular injection. *Biomaterials*, **2021**, 267, 120462	15.6	8
20	Analytical and Experimental Investigation of Laser-Microsphere Interaction for Nanoscale Surface Modification. *Journal of Heat Transfer*, **2005**, 127, 1231-1235	1.8	6

19	Shaping biodegradable polymers as nanostructures: Fabrication and applications. *Drug Discovery Today: Technologies*, **2005**, 2, 97-102	7.1	5
18	Projection Printing of Ultrathin Structures with Nanoscale Thickness Control. *ACS Applied Materials & Interfaces*, **2019**, 11, 16059-16064	9.5	4
17	Sustainable Synthesis and Characterization of Bisphenol A-Free Polycarbonate from Six-Membered Dicyclic Carbonate. *Polymer Chemistry*, **2018**, 9, 3798-3807	4.9	4
16	3D Printing and Nanomanufacturing **2015**, 25-55		4
15	Medical imaging of tissue engineering and regenerative medicine constructs. *Biomaterials Science*, **2021**, 9, 301-314	7.4	4
14	Bioprinting: Microfluidics-Enabled Multimaterial Maskless Stereolithographic Bioprinting (Adv. Mater. 27/2018). *Advanced Materials*, **2018**, 30, 1870201	24	4
13	Rapid 3D BioPrinting of a human iPSC-derived cardiac micro-tissue for high-throughput drug testing. *Organs-on-a-Chip*, **2021**, 3, 100007	9.8	4
12	3D bioprinting of complex tissues in vitro: state-of-the-art and future perspectives.. *Archives of Toxicology*, **2022**, 1	5.8	3
11	Analytical and Experimental Investigations of Electromagnetic Field Enhancement Among Nanospheres With Varying Spacing. *Journal of Heat Transfer*, **2009**, 131,	1.8	2
10	Rapid 3D bioprinting of a multicellular model recapitulating pterygium microenvironment.. *Biomaterials*, **2022**, 282, 121391	15.6	2
9	Compensating the cell-induced light scattering effect in light-based bioprinting using deep learning. *Biofabrication*, **2021**, 14,	10.5	2
8	Fluorinated colloidal emulsion of photochangeable rheological behavior as a sacrificial agent to fabricate organic, three-dimensional microstructures. *Langmuir*, **2010**, 26, 6108-10	4	1
7	Bioprinting of dual ECM scaffolds encapsulating limbal stem/progenitor cells in active and quiescent statuses. *Biofabrication*, **2021**, 13,	10.5	1
6	Bioprinting of Complex Vascularized Tissues. *Methods in Molecular Biology*, **2021**, 2147, 163-173	1.4	0
5	Bioprinting of Biomimetic Tissue Models for Disease Modeling and Drug Screening **2022**, 33-70		0
4	Biofabricated three-dimensional tissue models **2020**, 1417-1441		
3	Femtosecond Laser-Assisted Nanoscale 3D Printing of Hydrogels **2021**, 1739-1766		
2	Rapid Prototyping **2017**, 1342-1349		

1 Femtosecond Laser-Assisted Nanoscale 3D Printing of Hydrogels **2021**, 1-28