Nathaniel Huebsch

List of Publications by Year
in descending order

49 papers	9,740 citations	159585 30 h-index	214800 47 g-index
53 all docs	53 docs citations	53 times ranked	13569 citing authors

#	Article	IF	Citations
1	Metabolically driven maturation of human-induced-pluripotent-stem-cell-derived cardiac microtissues on microfluidic chips. Nature Biomedical Engineering, 2022, 6, 372-388.	22.5	42
2	iPSC-Derived Micro-Heart Muscle for Medium-Throughput Pharmacology and Pharmacogenomic Studies. Methods in Molecular Biology, 2022, , 111-131.	0.9	1
3	Robust, Automated Analysis of Electrophysiology in Induced Pluripotent Stem Cell-Derived Micro-Heart Muscle for Drug Toxicity. Tissue Engineering - Part C: Methods, 2022, 28, 457-468.	2.1	6
4	Elastomer-Grafted iPSC-Derived Micro Heart Muscles to Investigate Effects of Mechanical Loading on Physiology. ACS Biomaterials Science and Engineering, 2021, 7, 2973-2989.	5.2	21
5	Copper-Free Azideâ€“Alkyne Cycloaddition for Peptide Modification of Alginate Hydrogels. ACS Applied Bio Materials, 2021, 4, 1229-1237.	4.6	14
6	Integrated Isogenic Human Induced Pluripotent Stem Cellâ€“Based Liver and Heart Microphysiological Systems Predict Unsafe Drugâ€“Drug Interaction. Frontiers in Pharmacology, 2021, 12, 667010.	3.5	29
7	Interplay of Genotype and Substrate Stiffness in Driving the Hypertrophic Cardiomyopathy Phenotype in iPSC-Micro-Heart Muscle Arrays. Cellular and Molecular Bioengineering, 2021, 14, 409-425.	2.1	6
8	Biocompatible and Enzymatically Degradable Gels for 3D Cellular Encapsulation under Extreme Compressive Strain. Gels, 2021, 7, 101.	4.5	6
9	Integrin and syndecan binding peptide-conjugated alginate hydrogel for modulation of nucleus pulposus cell phenotype. Biomaterials, 2021, 277, 121113.	11.4	22
10	Modeling the Response of Heart Muscle to Mechanical Stimulation In Vitro. Current Tissue Microenvironment Reports, 2020, 1, 61-72.	3.2	7
11	Translational mechanobiology: Designing synthetic hydrogel matrices for improved in vitro models and cell-based therapies. Acta Biomaterialia, 2019, 94, 97-111.	8.3	38
12	Engineering Tissues from Induced Pluripotent Stem Cells. Tissue Engineering - Part A, 2019, 25, 707-710.	3.1	11
13	New Molecular Scaffolds for Fluorescent Voltage Indicators. ACS Chemical Biology, 2019, 14, 390-396.	3.4	23
14	In Vitro Studies of the Synergy Between Mechanical Loading and Genetics Within Human Induced Pluripotent Stem Cell Derived Micro-Scale Engineered Heart Tissues. MCB Molecular and Cellular Biomechanics, 2019, 16, 107-108.	0.7	0
15	Quantitatively characterizing drugâ€induced arrhythmic contractile motions of human stem cellâ€derived cardiomyocytes. Biotechnology and Bioengineering, 2018, 115, 1958-1970.	3.3	5
16	Inversion and computational maturation of drug response using human stem cell derived cardiomyocytes in microphysiological systems. Scientific Reports, 2018, 8, 17626.	3.3	41
17	Contractile deficits in engineered cardiac microtissues as a result of MYBPC3 deficiency and mechanical overload. Nature Biomedical Engineering, 2018, 2, 955-967.	22.5	82
18	In-situ tissue regeneration through SDF-1Î± driven cell recruitment and stiffness-mediated bone regeneration in a critical-sized segmental femoral defect. Acta Biomaterialia, 2017, 60, 50-63.	8.3	62

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19	A BAG3 chaperone complex maintains cardiomyocyte function during proteotoxic stress. JCI Insight, 2017, 2, .	5.0	81
20	Miniaturized iPS-Cell-Derived Cardiac Muscles for Physiologically Relevant Drug Response Analyses. Scientific Reports, 2016, 6, 24726.	3.3	191
21	CRISPR Interference Efficiently Induces Specific and Reversible Gene Silencing in Human iPSCs. Cell Stem Cell, 2016, 18, 541-553.	11.1	418
22	Hydrogels with tunable stress relaxation regulate stem cell fate and activity. Nature Materials, 2016, 15, 326-334.	27.5	1,650
23	Human iPSC-based Cardiac Microphysiological System For Drug Screening Applications. Scientific Reports, 2015, 5, 8883.	3.3	411
24	Substrate stress relaxation regulates cell spreading. Nature Communications, 2015, 6, 6364.	12.8	637
25	Self-organizing human cardiac microchambers mediated by geometric confinement. Nature Communications, 2015, 6, 7413.	12.8	167
26	Matrix elasticity of void-forming hydrogels controls transplanted-stem-cell-mediated boneÂformation. Nature Materials, 2015, 14, 1269-1277.	27.5	390
27	Automated Video-Based Analysis of Contractility and Calcium Flux in Human-Induced Pluripotent Stem Cell-Derived Cardiomyocytes Cultured over Different Spatial Scales. Tissue Engineering - Part C: Methods, 2015, 21, 467-479.	2.1	232
28	Characterization of a composite injury model of severe lower limb bone and nerve trauma. Journal of Tissue Engineering and Regenerative Medicine, 2014, 8, 432-441.	2.7	10
29	Ultrasound-triggered disruption and self-healing of reversibly cross-linked hydrogels for drug delivery and enhanced chemotherapy. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 9762-9767.	7.1	372
30	Three-dimensional filamentous human diseased cardiac tissue model. Biomaterials, 2014, 35, 1367-1377.	11.4	102
31	Recovery from hind limb ischemia enhances rhBMP-2-mediated segmental bone defect repair in a rat composite injury model. Bone, 2013, 55, 410-417.	2.9	19
32	Attenuated Human Bone Morphogenetic Protein-2â€"Mediated Bone Regeneration in a Rat Model of Composite Bone and Muscle Injury. Tissue Engineering - Part C: Methods, 2013, 19, 316-325.	2.1	71
33	Adipose Tissue Engineering Using Injectable, Oxidized Alginate Hydrogels. Tissue Engineering - Part A, 2012, 18, 737-743.	3.1	63
34	Spatiotemporal delivery of bone morphogenetic protein enhances functional repair of segmental bone defects. Bone, 2011, 49, 485-492.	2.9	135
35	An alginate-based hybrid system for growth factor delivery in the functional repair of large bone defects. Biomaterials, 2011, 32, 65-74.	11.4	454
36	Active scaffolds for on-demand drug and cell delivery. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 67-72.	7.1	630

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37	Mechanical regulation of vascular growth and tissue regeneration in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, E674-80.	7.1	193
38	A Role for Integrin-ECM Bonds as Mechanotransducers that Modulate Adult Stem Cell Fate. , 2011, , 23-46.		1
39	Patterning alginate hydrogels using light-directed release of caged calcium in a microfluidic device. Biomedical Microdevices, 2010, 12, 145-151.	2.8	72
40	Harnessing traction-mediated manipulation of the cell/matrix interface to control stem-cell fate. Nature Materials, 2010, 9, 518-526.	27.5	1,319
41	Stress-relaxation behavior in gels with ionic and covalent crosslinks. Journal of Applied Physics, 2010, 107, 63509.	2.5	287
42	Inspiration and application in the evolution of biomaterials. Nature, 2009, 462, 426-432.	27.8	717
43	Infection-mimicking materials to program dendritic cells in situ. Nature Materials, 2009, 8, 151-158.	27.5	386
44	Cyclic Arginine-Glycine-Aspartate Peptides Enhance Three-Dimensional Stem Cell Osteogenic Differentiation. Tissue Engineering - Part A, 2009, 15, 263-272.	3.1	83
45	Integrin-Adhesion Ligand Bond Formation of Preosteoblasts and Stem Cells in Three-Dimensional RGD Presenting Matrices. Biomacromolecules, 2008, 9, 1843-1851.	5.4	61
46	Noninvasive Probing of the Spatial Organization of Polymer Chains in Hydrogels Using Fluorescence Resonance Energy Transfer (FRET). Journal of the American Chemical Society, 2007, 129, 4518-4519.	13.7	31
47	Fluorescent resonance energy transfer: A tool for probing molecular cellâ€“biomaterial interactions in three dimensions. Biomaterials, 2007, 28, 2424-2437.	11.4	79
48	Analysis of sterilization protocols for peptide-modified hydrogels. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2005, 74B, 440-447.	3.4	49
49	Quantitatively Characterizing Drug-Induced Arrhythmic Contractile Motions of Human Stem Cell-Derived Cardiomyocytes. Biotechnology and Bioengineering, 0, , .	3.3	0