Shyni Varghese

List of Publications by Year
in descending order

101 papers	8,187 citations	47006 47 h-index	48315 88 g-index
103 all docs	103 docs citations	103 times ranked	11354 citing authors

#	Article	IF	Citations
1	Molecularly Tailored Interface for Longâ€Term Xenogeneic Cell Transplantation. Advanced Functional Materials, 2022, 32, 2108221.	14.9	1
2	An In Vitro Microfluidic Alveolus Model to Study Lung Biomechanics. Frontiers in Bioengineering and Biotechnology, 2022, 10, 848699.	4.1	11
3	Meniscus cell regional phenotypes: Dedifferentiation and reversal by biomaterial embedding. Journal of Orthopaedic Research, 2021, 39, 2177-2186.	2.3	8
4	Temporal mechanisms of myogenic specification in human induced pluripotent stem cells. Science Advances, 2021, 7, .	10.3	3
5	Microengineered Materials with Selfâ€Healing Features for Soft Robotics. Advanced Intelligent Systems, 2021, 3, 2100005.	6.1	14
6	Cellular Respiratory Toxicity of Novel Flavor-Solvent Adducts in Electronic Cigarettes. , 2021, , .		0
7	Bone targeting nanocarrier-assisted delivery of adenosine to combat osteoporotic bone loss. Biomaterials, 2021, 273, 120819.	11.4	27
8	Resolution of inflammation in bone regeneration: From understandings to therapeutic applications. Biomaterials, 2021, 277, 121114.	11.4	95
9	Selfâ€Healing of Hyaluronic Acid to Improve In Vivo Retention and Function. Advanced Healthcare Materials, 2021, 10, e2100777.	7.6	11
10	An Engineered Tumor-on-a-Chip Device with Breast Cancerâ€"Immune Cell Interactions for Assessing T-cell Recruitment. Cancer Research, 2020, 80, 263-275.	0.9	89
11	In Vivo Sequestration of Innate Small Molecules to Promote Bone Healing. Advanced Materials, 2020, 32, e1906022.	21.0	20
12	Bone Healing: In Vivo Sequestration of Innate Small Molecules to Promote Bone Healing (Adv. Mater.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	21.0	0
13	Ex Vivo Tumorâ€onâ€aâ€Chip Platforms to Study Intercellular Interactions within the Tumor Microenvironment. Advanced Healthcare Materials, 2019, 8, e1801198.	7.6	49
14	Tissue engineered bone mimetics to study bone disorders exÂvivo: Role of bioinspired materials. Biomaterials, 2019, 198, 107-121.	11.4	44
15	Dysregulation of ectonucleotidase-mediated extracellular adenosine during postmenopausal bone loss. Science Advances, 2019, 5, eaax1387.	10.3	48
16	Biomaterial-assisted local and systemic delivery of bioactive agents for bone repair. Acta Biomaterialia, 2019, 93, 152-168.	8.3	68
17	Three-Dimensional Monolayer Stress Microscopy. Biophysical Journal, 2019, 117, 111-128.	0.5	30
18	In vivo RNA editing of point mutations via RNA-guided adenosine deaminases. Nature Methods, 2019, 16, 239-242.	19.0	144

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19	Stimuliâ€Responsive Supramolecular Hydrogels and Their Applications in Regenerative Medicine. Macromolecular Bioscience, 2019, 19, e1800259.	4.1	133
20	Phenylboronic Acid-polymers for Biomedical Applications. Current Medicinal Chemistry, 2019, 26, 6797-6816.	2.4	29
21	Direct Conversion of Human Pluripotent Stem Cells to Osteoblasts With a Small Molecule. Current Protocols in Stem Cell Biology, 2018, 44, 1F.21.1-1F.21.6.	3.0	9
22	Mineralized Biomaterials Mediated Repair of Bone Defects Through Endogenous Cells. Tissue Engineering - Part A, 2018, 24, 1148-1156.	3.1	30
23	Macroporous Dual-compartment Hydrogels for Minimally Invasive Transplantation of Primary Human Hepatocytes. Transplantation, 2018, 102, e373-e381.	1.0	6
24	In Situ Gene Therapy via AAV-CRISPR-Cas9-Mediated Targeted Gene Regulation. Molecular Therapy, 2018, 26, 1818-1827.	8.2	111
25	Effect of age on biomaterial-mediated in situ bone tissue regeneration. Acta Biomaterialia, 2018, 78, 329-340.	8.3	30
26	Functionally graded multilayer scaffolds for in vivo osteochondral tissue engineering. Acta Biomaterialia, 2018, 78, 365-377.	8.3	70
27	In vivo engineering of bone tissues with hematopoietic functions and mixed chimerism. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 5419-5424.	7.1	36
28	Skeletal muscle-on-a-chip: an in vitro model to evaluate tissue formation and injury. Lab on A Chip, 2017, 17, 3447-3461.	6.0	121
29	Matrix Topographical Cue-Mediated Myogenic Differentiation of Human Embryonic Stem Cell Derivatives. Polymers, 2017, 9, 580.	4.5	18
30	Hydrogels as Extracellular Matrix Analogs. Gels, 2016, 2, 20.	4.5	64
31	Progress in orthopedic biomaterials and drug delivery. Drug Delivery and Translational Research, 2016, 6, 75-76.	5.8	14
32	Chemotaxis-driven assembly of endothelial barrier in a tumor-on-a-chip platform. Lab on A Chip, 2016, 16, 1886-1898.	6.0	39
33	Small moleculeâ€"driven direct conversion of human pluripotent stem cells into functional osteoblasts. Science Advances, 2016, 2, e1600691.	10.3	72
34	Magnetically-responsive silicaâ€"gold nanobowls for targeted delivery and SERS-based sensing. Nanoscale, 2016, 8, 11840-11850.	5.6	27
35	Poly(ethylene glycol) hydrogels with cell cleavable groups for autonomous cell delivery. Biomaterials, 2016, 77, 186-197.	11.4	57
36	Biomaterials for pluripotent stem cell engineering: from fate determination to vascularization. Journal of Materials Chemistry B, 2016, 4, 3454-3463.	5.8	18

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37	3D cardiac Î¼tissues within a microfluidic device with real-time contractile stress readout. Lab on A Chip, 2016, 16, 153-162.	6.0	55
38	In vivo comparison of biomineralized scaffold-directed osteogenic differentiation of human embryonic and mesenchymal stem cells. Drug Delivery and Translational Research, 2016, 6, 121-131.	5.8	18
39	Adenosine Signaling Mediates Osteogenic Differentiation of Human Embryonic Stem Cells on Mineralized Matrices. Frontiers in Bioengineering and Biotechnology, 2015, 3, 185.	4.1	20
40	Biomineralized Matrices Dominate Soluble Cues To Direct Osteogenic Differentiation of Human Mesenchymal Stem Cells through Adenosine Signaling. Biomacromolecules, 2015, 16, 1050-1061.	5.4	45
41	Embedded 3D Photopatterning of Hydrogels with Diverse and Complex Architectures for Tissue Engineering and Disease Models. Tissue Engineering - Part C: Methods, 2015, 21, 1188-1196.	2.1	28
42	Synthetic bone mimetic matrix-mediated in situ bone tissue formation through host cell recruitment. Acta Biomaterialia, 2015, 19, 1-9.	8.3	21
43	The matrix protein Fibulin-5 is at the interface of tissue stiffness and inflammation in fibrosis. Nature Communications, 2015, 6, 8574.	12.8	64
44	Biomimetic Material-Assisted Delivery of Human Embryonic Stem Cell Derivatives for Enhanced In Vivo Survival and Engraftment. ACS Biomaterials Science and Engineering, 2015, 1, 7-12.	5.2	16
45	Extracellular-Matrix-Based and Arg-Gly-Aspâ€"Modified Photopolymerizing Hydrogels for Cartilage Tissue Engineering. Tissue Engineering - Part A, 2015, 21, 757-766.	3.1	46
46	3D Traction Stresses Activate Protease-Dependent Invasion of Cancer Cells. Biophysical Journal, 2014, 107, 2528-2537.	0.5	77
47	Calcium phosphate-bearing matrices induce osteogenic differentiation of stem cells through adenosine signaling. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 990-995.	7.1	302
48	Fusarisetins: structureâ€"function studies on a novel class of cell migration inhibitors. Organic Chemistry Frontiers, 2014, 1, 135.	4.5	14
49	Mineralized gelatin methacrylate-based matrices induce osteogenic differentiation of human induced pluripotent stem cells. Acta Biomaterialia, 2014, 10, 4961-4970.	8.3	89
50	Biomineralized matrix-assisted osteogenic differentiation of human embryonic stem cells. Journal of Materials Chemistry B, 2014, 2, 5676.	5.8	28
51	Smart hydrogels as functional biomimetic systems. Biomaterials Science, 2014, 2, 603-618.	5.4	193
52	WNT3A promotes myogenesis of human embryonic stem cells and enhances in vivo engraftment. Scientific Reports, 2014, 4, 5916.	3.3	34
53	Engineering cellâ€"material interfaces for long-term expansion of human pluripotent stem cells. Biomaterials, 2013, 34, 912-921.	11.4	47
54	Biomaterials Directed <i>In Vivo</i> Osteogenic Differentiation of Mesenchymal Cells Derived from Human Embryonic Stem Cells. Tissue Engineering - Part A, 2013, 19, 1723-1732.	3.1	48

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55	Directed In Vitro Myogenesis of Human Embryonic Stem Cells and Their In Vivo Engraftment. PLoS ONE, 2013, 8, e72023.	2.5	37
56	Effect of scaffold microarchitecture on osteogenic differentiation of human mesenchymal stem cells. , 2013, 25, 114-129.		76
57	Hydrogels: a versatile tool with a myriad of biomedical and research applications for the skin. Expert Review of Dermatology, 2012, 7, 315-317.	0.3	4
58	A three-dimensional polymer scaffolding material exhibiting a zero Poisson's ratio. Soft Matter, 2012, 8, 4946.	2.7	77
59	Spatial tuning of negative and positive Poissonâ€™s ratio in a multi-layer scaffold. Acta Biomaterialia, 2012, 8, 2587-2594.	8.3	70
60	Mineralized Synthetic Matrices as an Instructive Microenvironment for Osteogenic Differentiation of Human Mesenchymal Stem Cells. Macromolecular Bioscience, 2012, 12, 1022-1032.	4.1	44
61	Rapid self-healing hydrogels. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 4383-4388.	7.1	633
62	Cartilage-like mechanical properties of poly (ethylene glycol)-diacrylate hydrogels. Biomaterials, 2012, 33, 6682-6690.	11.4	181
63	Biomineralized matrices promote osteogenic differentiation of human mesenchymal stem cells: A mechanistic study. FASEB Journal, 2012, 26, lb65.	0.5	0
64	Engineered microenvironments for self-renewal and musculoskeletal differentiation of stem cells. Regenerative Medicine, 2011, 6, 505-524.	1.7	31
65	Influence of Physical Properties of Biomaterials on Cellular Behavior. Pharmaceutical Research, 2011, 28, 1422-1430.	3.5	145
66	Regulation of osteogenic and chondrogenic differentiation of mesenchymal stem cells in PEG-ECM hydrogels. Cell and Tissue Research, 2011, 344, 499-509.	2.9	107
67	Engineering the cellâ€“material interface for controlling stem cell adhesion, migration, and differentiation. Biomaterials, 2011, 32, 3700-3711.	11.4	288
68	Dynamic Electromechanical Hydrogel Matrices for Stem Cell Culture. Advanced Functional Materials, 2011, 21, 55-63.	14.9	84
69	Osteoarthritic chondrocyteâ€“secreted morphogens induce chondrogenic differentiation of human mesenchymal stem cells. Arthritis and Rheumatism, 2011, 63, 148-158.	6.7	99
70	Oligo(trimethylene carbonate)â€“poly(ethylene glycol)â€“oligo(trimethylene carbonate) triblock-based hydrogels for cartilage tissue engineering. Acta Biomaterialia, 2011, 7, 3362-3369.	8.3	42
71	Nanotube surface triggers increased chondrocyte extracellular matrix production. Materials Science and Engineering C, 2010, 30, 518-525.	7.3	38
72	Long-term human pluripotent stem cell self-renewal on synthetic polymer surfaces. Biomaterials, 2010, 31, 9135-9144.	11.4	163

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73	Engineering Musculoskeletal Tissues with Human Embryonic Germ Cell Derivatives. Stem Cells, 2010, 28, 765-774.	3.2	42
74	Interconnected Macroporous Poly(Ethylene Glycol) Cryogels as a Cell Scaffold for Cartilage Tissue Engineering. Tissue Engineering - Part A, 2010, 16, 3033-3041.	3.1	78
75	Templated Mineralization of Synthetic Hydrogels for Bone-Like Composite Materials: Role of Matrix Hydrophobicity. Biomacromolecules, 2010, 11, 2060-2068.	5.4	69
76	Heparin Mimicking Polymer Promotes Myogenic Differentiation of Muscle Progenitor Cells. Biomacromolecules, 2010, 11, 3294-3300.	5.4	53
77	PEG/clay nanocomposite hydrogel: a mechanically robust tissue engineering scaffold. Soft Matter, 2010, 6, 5157.	2.7	216
78	Poly(ethylene glycol) cryogels as potential cell scaffolds: effect of polymerization conditions on cryogel microstructure and properties. Journal of Materials Chemistry, 2010, 20, 345-351.	6.7	93
79	Embryonic Germ Cells Are Capable of Adipogenic Differentiation<i>In Vitro</i>and<i>In Vivo</i>. Tissue Engineering - Part A, 2009, 15, 479-486.	3.1	18
80	Mesenchymal stem cell differentiation and roles in regenerative medicine. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2009, 1, 97-106.	6.6	126
81	A novel single precursor-based biodegradable hydrogel with enhanced mechanical properties. Soft Matter, 2009, 5, 3831.	2.7	59
82	Controlled differentiation of stem cells. Advanced Drug Delivery Reviews, 2008, 60, 199-214.	13.7	296
83	Chondroitin sulfate based niches for chondrogenic differentiation of mesenchymal stem cells. Matrix Biology, 2008, 27, 12-21.	3.6	331
84	Enhanced Chondrogenesis of Mesenchymal Stem Cells in Collagen Mimetic Peptide-Mediated Microenvironment. Tissue Engineering - Part A, 2008, 14, 1843-1851.	3.1	99
85	In vivo commitment and functional tissue regeneration using human embryonic stem cell-derived mesenchymal cells. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 20641-20646.	7.1	261
86	Derivation of Chondrogenically-Committed Cells from Human Embryonic Cells for Cartilage Tissue Regeneration. PLoS ONE, 2008, 3, e2498.	2.5	115
87	Response of zonal chondrocytes to extracellular matrixâ€hydrogels. FEBS Letters, 2007, 581, 4172-4178.	2.8	82
88	Morphogenetic signals from chondrocytes promote chondrogenic and osteogenic differentiation of mesenchymal stem cells. Journal of Cellular Physiology, 2007, 212, 281-284.	4.1	115
89	Multifunctional chondroitin sulphate for cartilage tissueâ€“biomaterial integration. Nature Materials, 2007, 6, 385-392.	27.5	609
90	Glucosamine modulates chondrocyte proliferation, matrix synthesis, and gene expression. Osteoarthritis and Cartilage, 2007, 15, 59-68.	1.3	99

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91	Morphogenetic Signals from Chondrocytes Promote Osteochondrogenic Potential of Mesenchymal Stem Cells in vitro and in vivo. FASEB Journal, 2007, 21, A1233.	0.5	0
92	Biomaterialsâ€Directed In Vivo Commitment of Mesenchymal Cells Derived from Human Embryonic Stem Cells. FASEB Journal, 2007, 21, A145.	0.5	0
93	Chondrogenic Differentiation of Human Embryonic Stem Cellâ€"Derived Cells in Arginine-Glycine-Aspartateâ€"Modified Hydrogels. Tissue Engineering, 2006, 12, 2695-2706.	4.6	255
94	Metal-ion-mediated healing of gels. Journal of Polymer Science Part A, 2006, 44, 666-670.	2.3	53
95	Enhanced chondrogenic differentiation of murine embryonic stem cells in hydrogels with glucosamine. Biomaterials, 2006, 27, 6015-6023.	11.4	106
96	Role of Hydrophobicity on Structure of Polymerâˆ'Metal Complexes. Journal of Physical Chemistry B, 2001, 105, 5368-5373.	2.6	39
97	Novel Macroscopic Self-Organization in Polymer Gels. Advanced Materials, 2001, 13, 1544.	21.0	37
98	Designing new thermoreversible gels by molecular tailoring of hydrophilic-hydrophobic interactions. Journal of Chemical Physics, 2000, 112, 3063-3070.	3.0	38
99	Effect of Polymerâˆ'Metal Complexation on the Phase Transition of Thermoreversible Copolymer Gels. Journal of Physical Chemistry B, 1999, 103, 9530-9532.	2.6	7
100	Thermoreversible hydrogel based on radiation induced copolymerisation of poly(N-isopropyl) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 382 T	3.8	31
101	Molecular tailoring of thermoreversible copolymer gels: Some new mechanistic insights. Journal of Chemical Physics, 1998, 109, 1175-1184.	3.0	49