Dietmar Werner Hutmacher

List of Publications by Year
in descending order

501 papers	52,220 citations	1294 109 h-index	1705 213 g-index
536 all docs	536 docs citations	536 times ranked	39543 citing authors

#	Article	IF	Citations
1	Scaffolds in tissue engineering bone and cartilage. Biomaterials, 2000, 21, 2529-2543.	5.7	4,353
2	The return of a forgotten polymerâ€"Polycaprolactone in the 21st century. Progress in Polymer Science, 2010, 35, 1217-1256.	11.8	3,051
3	Fused deposition modeling of novel scaffold architectures for tissue engineering applications. Biomaterials, 2002, 23, 1169-1185.	5.7	1,597
4	25th Anniversary Article: Engineering Hydrogels for Biofabrication. Advanced Materials, 2013, 25, 5011-5028.	11.1	1,522
5	Mechanical properties and cell cultural response of polycaprolactone scaffolds designed and fabricated via fused deposition modeling. Journal of Biomedical Materials Research Part B, 2001, 55, 203-216.	3.0	1,220
6	Scaffold design and fabrication technologies for engineering tissues â€" state of the art and future perspectives. Journal of Biomaterials Science, Polymer Edition, 2001, 12, 107-124.	1.9	1,213
7	Additive manufacturing of tissues and organs. Progress in Polymer Science, 2012, 37, 1079-1104.	11.8	997
8	Scaffold-based tissue engineering: rationale for computer-aided design and solid free-form fabrication systems. Trends in Biotechnology, 2004, 22, 354-362.	4.9	995
9	State of the art and future directions of scaffold-based bone engineering from a biomaterials perspective. Journal of Tissue Engineering and Regenerative Medicine, 2007, 1, 245-260.	1.3	835
10	Gelatinâ€Methacrylamide Hydrogels as Potential Biomaterials for Fabrication of Tissueâ€Engineered Cartilage Constructs. Macromolecular Bioscience, 2013, 13, 551-561.	2.1	646
11	Bone Regeneration Based on Tissue Engineering Conceptions â€" A 21st Century Perspective. Bone Research, 2013, 1, 216-248.	5.4	625
12	Direct Writing By Way of Melt Electrospinning. Advanced Materials, 2011, 23, 5651-5657.	11.1	622
13	Functionalization, preparation and use of cell-laden gelatin methacryloylâ€"based hydrogels as modular tissue culture platforms. Nature Protocols, 2016, 11, 727-746.	5.5	581
14	Reinforcement of hydrogels using three-dimensionally printed microfibres. Nature Communications, 2015, 6, 6933.	5.8	567
15	Electro-spinning of pure collagen nano-fibres â€" Just an expensive way to make gelatin?. Biomaterials, 2008, 29, 2293-2305.	5.7	538
16	Bioengineered 3D platform to explore cellâ€"ECM interactions and drug resistance of epithelial ovarian cancer cells. Biomaterials, 2010, 31, 8494-8506.	5.7	533
17	Scaffold development using 3D printing with a starch-based polymer. Materials Science and Engineering C, 2002, 20, 49-56.	3.8	524
18	Design, fabrication and characterization of PCL electrospun scaffoldsâ€"a review. Journal of Materials Chemistry, 2011, 21, 9419.	6.7	499

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19	Evaluation of polycaprolactone scaffold degradation for 6 months <i>in vitro</i> and <i>in vivo</i>. Journal of Biomedical Materials Research - Part A, 2009, 90A, 906-919.	2.1	455
20	An alginate-based hybrid system for growth factor delivery in the functional repair of large bone defects. Biomaterials, 2011, 32, 65-74.	5.7	454
21	A comparison of micro CT with other techniques used in the characterization of scaffolds. Biomaterials, 2006, 27, 1362-1376.	5.7	435
22	How smart do biomaterials need to be? A translational science and clinical point of view. Advanced Drug Delivery Reviews, 2013, 65, 581-603.	6.6	429
23	Biodegradable polymers applied in tissue engineering research: a review. Polymer International, 2007, 56, 145-157.	1.6	397
24	A novel 3D mammalian cell perfusion-culture system in microfluidic channels. Lab on A Chip, 2007, 7, 302.	3.1	392
25	Melt electrospinning today: An opportune time for an emerging polymer process. Progress in Polymer Science, 2016, 56, 116-166.	11.8	381
26	Identification of Common Pathways Mediating Differentiation of Bone Marrow- and Adipose Tissue-Derived Human Mesenchymal Stem Cells into Three Mesenchymal Lineages. Stem Cells, 2007, 25, 750-760.	1.4	377
27	Assessment of bone ingrowth into porous biomaterials using MICRO-CT. Biomaterials, 2007, 28, 2491-2504.	5.7	370
28	Degradation mechanisms of polycaprolactone in the context of chemistry, geometry and environment. Progress in Polymer Science, 2019, 96, 1-20.	11.8	366
29	Dynamics of<i>in vitro</i>polymer degradation of polycaprolactone-based scaffolds: accelerated versus simulated physiological conditions. Biomedical Materials (Bristol), 2008, 3, 034108.	1.7	365
30	The challenge of establishing preclinical models for segmental bone defect research. Biomaterials, 2009, 30, 2149-2163.	5.7	351
31	A Tissue Engineering Solution for Segmental Defect Regeneration in Load-Bearing Long Bones. Science Translational Medicine, 2012, 4, 141ra93.	5.8	301
32	The correlation of pore morphology, interconnectivity and physical properties of 3D ceramic scaffolds with bone ingrowth. Biomaterials, 2009, 30, 1440-1451.	5.7	297
33	A biomimetic extracellular matrix for cartilage tissue engineering centered on photocurable gelatin, hyaluronic acid and chondroitin sulfate. Acta Biomaterialia, 2014, 10, 214-223.	4.1	291
34	Biomaterials offer cancer research the third dimension. Nature Materials, 2010, 9, 90-93.	13.3	278
35	Tissue Engineering of Articular Cartilage with Biomimetic Zones. Tissue Engineering - Part B: Reviews, 2009, 15, 143-157.	2.5	273
36	Electrospraying, a Reproducible Method for Production of Polymeric Microspheres for Biomedical Applications. Polymers, 2011, 3, 131-149.	2.0	262

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37	Melt Electrospinning. Chemistry - an Asian Journal, 2011, 6, 44-56.	1.7	260
38	Fabrication of 3D chitosanâ€“hydroxyapatite scaffolds using a robotic dispensing system. Materials Science and Engineering C, 2002, 20, 35-42.	3.8	245
39	Combining Electrospun Scaffolds with Electrosprayed Hydrogels Leads to Three-Dimensional Cellularization of Hybrid Constructs. Biomacromolecules, 2008, 9, 2097-2103.	2.6	234
40	Concepts of scaffoldâ€based tissue engineeringâ€"the rationale to use solid freeâ€form fabrication techniques. Journal of Cellular and Molecular Medicine, 2007, 11, 654-669.	1.6	229
41	Coating of biomaterial scaffolds with the collagen-mimetic peptide GFOGER for bone defect repair. Biomaterials, 2010, 31, 2574-2582.	5.7	222
42	Can tissue engineering concepts advance tumor biology research?. Trends in Biotechnology, 2010, 28, 125-133.	4.9	208
43	Electrospinning and additive manufacturing: converging technologies. Biomaterials Science, 2013, 1, 171-185.	2.6	207
44	A biphasic scaffold design combined with cell sheet technology for simultaneous regeneration of alveolar bone/periodontal ligament complex. Biomaterials, 2012, 33, 5560-5573.	5.7	199
45	Hydrogels as Drug Delivery Systems: A Review of Current Characterization and Evaluation Techniques. Pharmaceutics, 2020, 12, 1188.	2.0	196
46	Combined marrow stromal cell-sheet techniques and high-strength biodegradable composite scaffolds for engineered functional bone grafts. Biomaterials, 2007, 28, 814-824.	5.7	193
47	Evaluation of a hybrid scaffold/cell construct in repair of high-load-bearing osteochondral defects in rabbits. Biomaterials, 2006, 27, 1071-1080.	5.7	192
48	Melt Electrospinning Writing of Highly Ordered Large Volume Scaffold Architectures. Advanced Materials, 2018, 30, e1706570.	11.1	191
49	Repair and regeneration of osteochondral defects in the articular joints. New Biotechnology, 2007, 24, 489-495.	2.7	190
50	The stimulation of healing within a rat calvarial defect by mPCLâ€“TCP/collagen scaffolds loaded with rhBMP-2. Biomaterials, 2009, 30, 2479-2488.	5.7	190
51	Periosteal Cells in Bone Tissue Engineering. Tissue Engineering, 2003, 9, 45-64.	4.9	188
52	Animal models for bone tissue engineering and modelling disease. DMM Disease Models and Mechanisms, 2018, 11, .	1.2	188
53	The three-dimensional vascularization of growth factor-releasing hybrid scaffold of poly (Îµ-caprolactone)/collagen fibers and hyaluronic acid hydrogel. Biomaterials, 2011, 32, 8108-8117.	5.7	186
54	Development and characterisation of a new bioink for additive tissue manufacturing. Journal of Materials Chemistry B, 2014, 2, 2282.	2.9	182

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55	Repair of Calvarial Defects with Customised Tissue-Engineered Bone Grafts II. Evaluation of Cellular Efficiency and Efficacyin Vivo. Tissue Engineering, 2003, 9, 127-139.	4.9	181
56	Repair of Large Articular Osteochondral Defects Using Hybrid Scaffolds and Bone Marrow-Derived Mesenchymal Stem Cells in a Rabbit Model. Tissue Engineering, 2006, 12, 1539-1551.	4.9	181
57	Melt Electrospinning and Its Technologization in Tissue Engineering. Tissue Engineering - Part B: Reviews, 2015, 21, 187-202.	2.5	180
58	Three-Dimensional Bioprinting for Regenerative Dentistry and Craniofacial Tissue Engineering. Journal of Dental Research, 2015, 94, 143S-152S.	2.5	180
59	Computational fluid dynamics for improved bioreactor design and 3D culture. Trends in Biotechnology, 2008, 26, 166-172.	4.9	179
60	Advanced tissue engineering scaffold design for regeneration of the complex hierarchical periodontal structure. Journal of Clinical Periodontology, 2014, 41, 283-294.	2.3	179
61	Multiphasic Scaffolds for Periodontal Tissue Engineering. Journal of Dental Research, 2014, 93, 1212-1221.	2.5	179
62	Novel PCL-based honeycomb scaffolds as drug delivery systems for rhBMP-2. Biomaterials, 2005, 26, 3739-3748.	5.7	178
63	Design and Fabrication of Tubular Scaffolds via Direct Writing in a Melt Electrospinning Mode. Biointerphases, 2012, 7, 13.	0.6	176
64	Gelatine methacrylamide-based hydrogels: An alternative three-dimensional cancer cell culture system. Acta Biomaterialia, 2014, 10, 2551-2562.	4.1	174
65	Multi-parametric hydrogels support 3D inÂvitro bioengineered microenvironment models of tumour angiogenesis. Biomaterials, 2015, 53, 609-620.	5.7	173
66	The Next Frontier in Melt Electrospinning: Taming the Jet. Advanced Functional Materials, 2019, 29, 1904664.	7.8	173
67	Evaluation of Ultra-Thin Poly(Îµ-Caprolactone) Films for Tissue-Engineered Skin. Tissue Engineering, 2001, 7, 441-455.	4.9	172
68	Comparison of the degradation of polycaprolactone and polycaprolactoneâ€"(Î²-tricalcium phosphate) scaffolds in alkaline medium. Polymer International, 2007, 56, 718-728.	1.6	172
69	Dermal fibroblast infiltration of poly(Îµ-caprolactone) scaffolds fabricated by melt electrospinning in a direct writing mode. Biofabrication, 2013, 5, 025001.	3.7	172
70	Current strategies for cell delivery in cartilage and bone regeneration. Current Opinion in Biotechnology, 2004, 15, 411-418.	3.3	169
71	Osteogenic Induction of Human Bone Marrow-Derived Mesenchymal Progenitor Cells in Novel Synthetic Polymerâ€"Hydrogel Matrices. Tissue Engineering, 2003, 9, 689-702.	4.9	165
72	Analysis of 3D bone ingrowth into polymer scaffolds via micro-computed tomography imaging. Biomaterials, 2004, 25, 4947-4954.	5.7	162

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73	In vitro characterization of natural and synthetic dermal matrices cultured with human dermal fibroblasts. Biomaterials, 2004, 25, 2807-2818.	5.7	162
74	Discrepancies between metabolic activity and DNA content as tool to assess cell proliferation in cancer research. Journal of Cellular and Molecular Medicine, 2010, 14, 1003-1013.	1.6	162
75	The Challenge to Measure Cell Proliferation in Two and Three Dimensions. Tissue Engineering, 2005, 11, 182-191.	4.9	152
76	Biologically Inspired Scaffolds for Heart Valve Tissue Engineering via Melt Electrowriting. Small, 2019, 15, e1900873.	5.2	150
77	Examination of the foreign body response to biomaterials by nonlinear intravital microscopy. Nature Biomedical Engineering, 2017, 1, .	11.6	147
78	The Potential Role of Lycopene for the Prevention and Therapy of Prostate Cancer: From Molecular Mechanisms to Clinical Evidence. International Journal of Molecular Sciences, 2013, 14, 14620-14646.	1.8	146
79	In vivo efficacy of bone-marrow-coated polycaprolactone scaffolds for the reconstruction of orbital defects in the pig. Journal of Biomedical Materials Research Part B, 2003, 66B, 574-580.	3.0	144
80	Bone tissue engineering: from bench to bedside. Materials Today, 2012, 15, 430-435.	8.3	144
81	Structural analysis of photocrosslinkable methacryloyl-modified protein derivatives. Biomaterials, 2017, 139, 163-171.	5.7	140
82	Engineering Anisotropic Muscle Tissue using Acoustic Cell Patterning. Advanced Materials, 2018, 30, e1802649.	11.1	140
83	Melt electrospinning of poly(Îµ-caprolactone) scaffolds: Phenomenological observations associated with collection and direct writing. Materials Science and Engineering C, 2014, 45, 698-708.	3.8	139
84	Effect of culture conditions and calcium phosphate coating on ectopic bone formation. Biomaterials, 2013, 34, 5538-5551.	5.7	138
85	In vitro and in vivo bone formation potential of surface calcium phosphate-coated polycaprolactone and polycaprolactone/bioactive glass composite scaffolds. Acta Biomaterialia, 2016, 30, 319-333.	4.1	137
86	Human corneal epithelial equivalents constructed on Bombyx mori silk fibroin membranes. Biomaterials, 2011, 32, 5086-5091.	5.7	136
87	Spatiotemporal delivery of bone morphogenetic protein enhances functional repair of segmental bone defects. Bone, 2011, 49, 485-492.	1.4	135
88	Biofabricated soft network composites for cartilage tissue engineering. Biofabrication, 2017, 9, 025014.	3.7	135
89	Differences between in vitro viability and differentiation and in vivo bone-forming efficacy of human mesenchymal stem cells cultured on PCLâ€“TCP scaffolds. Biomaterials, 2010, 31, 7960-7970.	5.7	133
90	Autocrine Fibroblast Growth Factor 2 Increases the Multipotentiality of Human Adipose-Derived Mesenchymal Stem Cells. Stem Cells, 2008, 26, 1598-1608.	1.4	131

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91	Neurological heterotopic ossification following spinal cord injury is triggered by macrophageâ€mediated inflammation in muscle. Journal of Pathology, 2015, 236, 229-240.	2.1	131
92	Strategies for Zonal Cartilage Repair using Hydrogels. Macromolecular Bioscience, 2009, 9, 1049-1058.	2.1	130
93	In Vivo Mesenchymal Cell Recruitment by a Scaffold Loaded with Transforming Growth Factor Î²1 and the Potential for in Situ Chondrogenesis. Tissue Engineering, 2002, 8, 469-482.	4.9	126
94	Engineered silk fibroin protein 3D matrices for in vitro tumor model. Biomaterials, 2011, 32, 2149-2159.	5.7	126
95	Evaluation of a new bioresorbable barrier to facilitate guided bone regeneration around exposed implant threads. International Journal of Oral and Maxillofacial Surgery, 1998, 27, 315-320.	0.7	125
96	A comparative analysis of scaffold material modifications for load-bearing applications in bone tissue engineering. International Journal of Oral and Maxillofacial Surgery, 2006, 35, 928-934.	0.7	124
97	Hyaluronic Acid Enhances the Mechanical Properties of Tissue-Engineered Cartilage Constructs. PLoS ONE, 2014, 9, e113216.	1.1	124
98	The influence of cellular source on periodontal regeneration using calcium phosphate coated polycaprolactone scaffold supported cell sheets. Biomaterials, 2014, 35, 113-122.	5.7	123
99	Translating tissue engineering technology platforms into cancer research. Journal of Cellular and Molecular Medicine, 2009, 13, 1417-1427.	1.6	122
100	Repair of Calvarial Defects with Customized Tissue-Engineered Bone Grafts I. Evaluation of Osteogenesis in a Three-Dimensional Culture System. Tissue Engineering, 2003, 9, 113-126.	4.9	121
101	Degradation and cell culture studies on block copolymers prepared by ring opening polymerization of ?-caprolactone in the presence of poly(ethylene glycol). Journal of Biomedical Materials Research Part B, 2004, 69A, 417-427.	3.0	121
102	Application of micro CT and computation modeling in bone tissue engineering. CAD Computer Aided Design, 2005, 37, 1151-1161.	1.4	121
103	The effect of unlocking RGD-motifs in collagen I on pre-osteoblast adhesion and differentiation. Biomaterials, 2010, 31, 2827-2835.	5.7	121
104	Co-culture of Bone Marrow Fibroblasts and Endothelial Cells on Modified Polycaprolactone Substrates for Enhanced Potentials in Bone Tissue Engineering. Tissue Engineering, 2006, 12, 2521-2531.	4.9	120
105	Polycaprolactone scaffold and reduced rhBMP-7 dose for the regeneration of critical-sized defects in sheep tibiae. Biomaterials, 2013, 34, 9960-9968.	5.7	120
106	Custom-made composite scaffolds for segmental defect repair in long bones. International Orthopaedics, 2011, 35, 1229-1236.	0.9	118
107	The effect of rhBMP-2 on canine osteoblasts seeded onto 3D bioactive polycaprolactone scaffolds. Biomaterials, 2004, 25, 5499-5506.	5.7	115
108	Osteogenic differentiation of mesenchymal progenitor cells in computer designed fibrin-polymer-ceramic scaffolds manufactured by fused deposition modeling. Journal of Materials Science: Materials in Medicine, 2005, 16, 807-819.	1.7	114

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109	Silk fibroin in ocular tissue reconstruction. Biomaterials, 2011, 32, 2445-2458.	5.7	114
110	A tissue-engineered humanized xenograft model of human breast cancer metastasis to bone. DMM Disease Models and Mechanisms, 2014, 7, 299-309.	1.2	114
111	Direct writing of chitosan scaffolds using a robotic system. Rapid Prototyping Journal, 2005, 11, 90-97.	1.6	110
112	Fabrication using a rapid prototyping system and in vitro characterization of PEG-PCL-PLA scaffolds for tissue engineering. Journal of Biomaterials Science, Polymer Edition, 2005, 16, 1595-1610.	1.9	108
113	Preliminary study on the adhesion and proliferation of human osteoblasts on starch-based scaffolds. Materials Science and Engineering C, 2002, 20, 27-33.	3.8	105
114	Enhancing structural integrity of hydrogels by using highly organised melt electrospun fibre constructs. European Polymer Journal, 2015, 72, 451-463.	2.6	105
115	Biological performance of a polycaprolactone-based scaffold used as fusion cage device in a large animal model of spinal reconstructive surgery. Biomaterials, 2009, 30, 5086-5093.	5.7	101
116	Mineralized human primary osteoblast matrices as a model system to analyse interactions of prostate cancer cells with the bone microenvironment. Biomaterials, 2010, 31, 7928-7936.	5.7	101
117	Processing of Polycaprolactone and Polycaprolactone-Based Copolymers into 3D Scaffolds, and Their Cellular Responses. Tissue Engineering - Part A, 2009, 15, 3013-3024.	1.6	100
118	Sustained regeneration of high-volume adipose tissue for breast reconstruction using computer aided design and biomanufacturing. Biomaterials, 2015, 52, 551-560.	5.7	98
119	An Integrated Design, Material, and Fabrication Platform for Engineering Biomechanically and Biologically Functional Soft Tissues. ACS Applied Materials & Interfaces, 2017, 9, 29430-29437.	4.0	98
120	Reduced contraction of skin equivalent engineered using cell sheets cultured in 3D matrices. Biomaterials, 2006, 27, 4591-4598.	5.7	97
121	Porous scaffold architecture guides tissue formation. Journal of Bone and Mineral Research, 2012, 27, 1275-1288.	3.1	97
122	Concise Review: Humanized Models of Tumor Immunology in the 21st Century: Convergence of Cancer Research and Tissue Engineering. Stem Cells, 2015, 33, 1696-1704.	1.4	96
123	Tissue Engineered Constructs for Periodontal Regeneration: Current Status and Future Perspectives. Advanced Healthcare Materials, 2018, 7, e1800457.	3.9	96
124	Species-specific homing mechanisms of human prostate cancer metastasis in tissue engineered bone. Biomaterials, 2014, 35, 4108-4115.	5.7	95
125	Flow modelling within a scaffold under the influence of uni-axial and bi-axial bioreactor rotation. Journal of Biotechnology, 2005, 119, 181-196.	1.9	94
126	Comparative study of depth-dependent characteristics of equine and human osteochondral tissue from the medial and lateral femoral condyles. Osteoarthritis and Cartilage, 2012, 20, 1147-1151.	0.6	94

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127	Tissue engineered periodontal products. Journal of Periodontal Research, 2016, 51, 1-15.	1.4	94
128	Noninvasive image analysis of 3D construct mineralization in a perfusion bioreactor. Biomaterials, 2007, 28, 2525-2533.	5.7	92
129	The influence of fibrin based hydrogels on the chondrogenic differentiation of human bone marrow stromal cells. Biomaterials, 2010, 31, 38-47.	5.7	92
130	Effect of gelatin source and photoinitiator type on chondrocyte redifferentiation in gelatin methacryloyl-based tissue-engineered cartilage constructs. Journal of Materials Chemistry B, 2019, 7, 1761-1772.	2.9	92
131	Engineering a humanized bone organ model in mice to study bone metastases. Nature Protocols, 2017, 12, 639-663.	5.5	91
132	Melt electrospinning of polycaprolactone and its blends with poly(ethylene glycol). Polymer International, 2010, 59, 1558-1562.	1.6	90
133	A dual-layer silk fibroin scaffold for reconstructing the human corneal limbus. Biomaterials, 2012, 33, 3529-3538.	5.7	90
134	Autologous vs. allogenic mesenchymal progenitor cells for the reconstruction of critical sized segmental tibial bone defects in aged sheep. Acta Biomaterialia, 2013, 9, 7874-7884.	4.1	90
135	Degradation characteristics of poly(Îµ-caprolactone)-based copolymers and blends. Journal of Applied Polymer Science, 2006, 102, 1681-1687.	1.3	87
136	A novel bioreactor system for biaxial mechanical loading enhances the properties of tissue-engineered human cartilage. Scientific Reports, 2017, 7, 16997.	1.6	87
137	Additive Biomanufacturing: An Advanced Approach for Periodontal Tissue Regeneration. Annals of Biomedical Engineering, 2017, 45, 12-22.	1.3	87
138	3D printed Polycaprolactone scaffolds with dual macro-microporosity for applications in local delivery of antibiotics. Materials Science and Engineering C, 2018, 87, 78-89.	3.8	87
139	Response of Cells on Surface-Induced Nanopatterns:Â Fibroblasts and Mesenchymal Progenitor Cells. Biomacromolecules, 2007, 8, 1530-1540.	2.6	86
140	Cavinâ€1/PTRF alters prostate cancer cellâ€derived extracellular vesicle content and internalization to attenuate extracellular vesicleâ€mediated osteoclastogenesis and osteoblast proliferation. Journal of Extracellular Vesicles, 2014, 3, .	5.5	86
141	Melt electrospinning onto cylinders: effects of rotational velocity and collector diameter on morphology of tubular structures. Polymer International, 2015, 64, 1086-1095.	1.6	86
142	Vitrification as a prospect for cryopreservation of tissue-engineered constructs. Biomaterials, 2007, 28, 1585-1596.	5.7	85
143	Heparan Sulfate Mediates the Proliferation and Differentiation of Rat Mesenchymal Stem Cells. Stem Cells and Development, 2009, 18, 661-670.	1.1	84
144	Periodontal Tissue Engineering with a Multiphasic Construct and Cell Sheets. Journal of Dental Research, 2019, 98, 673-681.	2.5	84

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145	Using extracellular matrix for regenerative medicine in the spinal cord. Biomaterials, 2013, 34, 4945-4955.	5.7	83
146	Induction of Ectopic Bone Formation by Using Human Periosteal Cells in Combination with a Novel Scaffold Technology. Cell Transplantation, 2002, 11, 125-138.	1.2	82
147	Elastic cartilage engineering using novel scaffold architectures in combination with a biomimetic cell carrier. Biomaterials, 2003, 24, 4445-4458.	5.7	81
148	Dynamic compression improves biosynthesis of human zonal chondrocytes from osteoarthritis patients. Osteoarthritis and Cartilage, 2012, 20, 906-915.	0.6	81
149	Fabrication and <i>in vitro</i> characterization of bioactive glass composite scaffolds for bone regeneration. Biofabrication, 2013, 5, 045005.	3.7	81
150	Perspectives in Multiphasic Osteochondral Tissue Engineering. Anatomical Record, 2014, 297, 26-35.	0.8	81
151	Microrobotics and MEMS-Based Fabrication Techniques for Scaffold-Based Tissue Engineering. Macromolecular Bioscience, 2005, 5, 477-489.	2.1	80
152	Periosteum tissue engineering in an orthotopic inÂvivo platform. Biomaterials, 2017, 121, 193-204.	5.7	80
153	Scaffold-based bone engineering by using genetically modified cells. Gene, 2005, 347, 1-10.	1.0	79
154	In vitro pre-vascularisation of tissue-engineered constructs A co-culture perspective. Vascular Cell, 2014, 6, 13.	0.2	79
155	Composite Electrospun Scaffolds for Engineering Tubular Bone Grafts. Tissue Engineering - Part A, 2009, 15, 3779-3788.	1.6	78
156	Establishment of a Preclinical Ovine Model for Tibial Segmental Bone Defect Repair by Applying Bone Tissue Engineering Strategies. Tissue Engineering - Part B: Reviews, 2010, 16, 93-104.	2.5	76
157	Single-Cell Force Spectroscopy, an Emerging Tool to Quantify Cell Adhesion to Biomaterials. Tissue Engineering - Part B: Reviews, 2014, 20, 40-55.	2.5	76
158	Developing macroporous bicontinuous materials as scaffolds for tissue engineering. Biomaterials, 2005, 26, 5609-5616.	5.7	75
159	A preclinical large-animal model for the assessment of critical-size load-bearing bone defect reconstruction. Nature Protocols, 2020, 15, 877-924.	5.5	75
160	Phenotypic Characterization of Prostate Cancer LNCaP Cells Cultured within a Bioengineered Microenvironment. PLoS ONE, 2012, 7, e40217.	1.1	75
161	Absolute quantification of gene expression in biomaterials research using real-time PCR. Biomaterials, 2007, 28, 203-210.	5.7	74
162	Biomimetic tubular nanofiber mesh and platelet rich plasma-mediated delivery of BMP-7 for large bone defect regeneration. Cell and Tissue Research, 2012, 347, 603-612.	1.5	74

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163	Scaffolds in tissue engineering bone and cartilage. , 2000, , 175-189.		73
164	In vitro bone engineering based on polycaprolactone and polycaprolactoneâ€“tricalcium phosphate composites. Polymer International, 2007, 56, 333-342.	1.6	73
165	The Evaluation of a Biphasic Osteochondral Implant Coupled with an Electrospun Membrane in a Large Animal Model. Tissue Engineering - Part A, 2010, 16, 1123-1141.	1.6	73
166	Scaffolds for Growth Factor Delivery as Applied to Bone Tissue Engineering. International Journal of Polymer Science, 2012, 2012, 1-25.	1.2	73
167	Targeted camptothecin delivery via silicon nanoparticles reduces breast cancer metastasis. Biomaterials, 2020, 240, 119791.	5.7	73
168	Effects of scaffold architecture on cranial bone healing. International Journal of Oral and Maxillofacial Surgery, 2014, 43, 506-513.	0.7	72
169	Influences of age and mechanical stability on volume, microstructure, and mineralization of the fracture callus during bone healing: Is osteoclast activity the key to age-related impaired healing?. Bone, 2010, 47, 219-228.	1.4	71
170	Poly(Îµ-caprolactone) films as a potential substrate for tissue engineering an epidermal equivalent. Materials Science and Engineering C, 2002, 20, 71-75.	3.8	70
171	Viability and adipogenic potential of human adipose tissue processed cell population obtained from pump-assisted and syringe-assisted liposuction. Journal of Dermatological Science, 2005, 37, 169-176.	1.0	70
172	Current developments in multifunctional smart materials for 3D/4D bioprinting. Current Opinion in Biomedical Engineering, 2017, 2, 67-75.	1.8	70
173	Interactions between human osteoblasts and prostate cancer cells in a novel 3D in vitro model. Organogenesis, 2010, 6, 181-188.	0.4	69
174	Improved fabrication of melt electrospun tissue engineering scaffolds using direct writing and advanced electric field control. Biointerphases, 2015, 10, 011006.	0.6	67
175	Transformation of Breast Reconstruction via Additive Biomanufacturing. Scientific Reports, 2016, 6, 28030.	1.6	67
176	Selenium nanoparticles as anti-infective implant coatings for trauma orthopedics against methicillin-resistant Staphylococcus aureus and epidermidis: in vitro and in vivo assessment . International Journal of Nanomedicine, 2019, Volume 14, 4613-4624.	3.3	67
177	Substrate topography: A valuable in vitro tool, but a clinical red herring for in vivo tenogenesis. Acta Biomaterialia, 2015, 27, 3-12.	4.1	66
178	Antimicrobial and Immunomodulatory Surfaceâ€Functionalized Electrospun Membranes for Bone Regeneration. Advanced Healthcare Materials, 2017, 6, 1601345.	3.9	66
179	Polylactides in additive biomanufacturing. Advanced Drug Delivery Reviews, 2016, 107, 228-246.	6.6	63
180	An introduction to biodegradable materials for tissue engineering applications. Annals of the Academy of Medicine, Singapore, 2001, 30, 183-91.	0.2	63

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181	Amniotic Fluid Stem Cells Produce Robust Mineral Deposits on Biodegradable Scaffolds. Tissue Engineering - Part A, 2009, 15, 3129-3138.	1.6	62
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