

Robert E Guldberg

List of Publications by Citations

Source: <https://exaly.com/author-pdf/2539691/robert-e-guldberg-publications-by-citations.pdf>

Version: 2024-04-24

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

110
papers

7,580
citations

38
h-index

86
g-index

115
ext. papers

8,863
ext. citations

6.2
avg, IF

6.04
L-index

#	Paper	IF	Citations
110	Guidelines for assessment of bone microstructure in rodents using micro-computed tomography. <i>Journal of Bone and Mineral Research</i> , 2010 , 25, 1468-86	6.3	2608
109	An alginate-based hybrid system for growth factor delivery in the functional repair of large bone defects. <i>Biomaterials</i> , 2011 , 32, 65-74	15.6	397
108	Microarchitectural and mechanical characterization of oriented porous polymer scaffolds. <i>Biomaterials</i> , 2003 , 24, 481-9	15.6	326
107	Effects of protein dose and delivery system on BMP-mediated bone regeneration. <i>Biomaterials</i> , 2011 , 32, 5241-51	15.6	243
106	Analysis of cartilage matrix fixed charge density and three-dimensional morphology via contrast-enhanced microcomputed tomography. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006 , 103, 19255-60	11.5	229
105	Quantitative assessment of scaffold and growth factor-mediated repair of critically sized bone defects. <i>Journal of Orthopaedic Research</i> , 2007 , 25, 941-50	3.8	199
104	Quantitative microcomputed tomography analysis of collateral vessel development after ischemic injury. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2004 , 287, H302-10	5.2	192
103	Mechanical regulation of vascular growth and tissue regeneration in vivo. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, E674-80	11.5	160
102	The accuracy of digital image-based finite element models. <i>Journal of Biomechanical Engineering</i> , 1998 , 120, 289-95	2.1	136
101	Bone regeneration using an alpha 2 beta 1 integrin-specific hydrogel as a BMP-2 delivery vehicle. <i>Biomaterials</i> , 2014 , 35, 5453-61	15.6	135
100	Spatiotemporal delivery of bone morphogenetic protein enhances functional repair of segmental bone defects. <i>Bone</i> , 2011 , 49, 485-92	4.7	116
99	Gender-specific differential expression of exosomal miRNA in synovial fluid of patients with osteoarthritis. <i>Scientific Reports</i> , 2017 , 7, 2029	4.9	114
98	High-strength, surface-porous polyether-ether-ketone for load-bearing orthopedic implants. <i>Acta Biomaterialia</i> , 2015 , 13, 159-67	10.8	107
97	Porous PEEK improves the bone-implant interface compared to plasma-sprayed titanium coating on PEEK. <i>Biomaterials</i> , 2018 , 185, 106-116	15.6	94
96	Hydrogel delivery of lysostaphin eliminates orthopedic implant infection by and supports fracture healing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, E4960-E4969	11.5	92
95	Materials Science and Design Principles of Growth Factor Delivery Systems in Tissue Engineering and Regenerative Medicine. <i>Advanced Healthcare Materials</i> , 2019 , 8, e1801000	10.1	91
94	Quantitative microcomputed tomography analysis of mineralization within three-dimensional scaffolds in vitro. <i>Journal of Biomedical Materials Research Part B</i> , 2004 , 69, 97-104		86

93	"Do-it-yourself in vitro vasculature that recapitulates in vivo geometries for investigating endothelial-blood cell interactions". <i>Scientific Reports</i> , 2015 , 5, 12401	4.9	84
92	Mechanical stimulation of tissue repair in the hydraulic bone chamber. <i>Journal of Bone and Mineral Research</i> , 1997 , 12, 1295-302	6.3	83
91	Effects of in vivo mechanical loading on large bone defect regeneration. <i>Journal of Orthopaedic Research</i> , 2012 , 30, 1067-75	3.8	82
90	Heparin microparticle effects on presentation and bioactivity of bone morphogenetic protein-2. <i>Biomaterials</i> , 2014 , 35, 7228-38	15.6	76
89	Simple coating with fibronectin fragment enhances stainless steel screw osseointegration in healthy and osteoporotic rats. <i>Biomaterials</i> , 2015 , 63, 137-45	15.6	74
88	Delivery vehicle effects on bone regeneration and heterotopic ossification induced by high dose BMP-2. <i>Acta Biomaterialia</i> , 2017 , 49, 101-112	10.8	73
87	3D imaging of tissue integration with porous biomaterials. <i>Biomaterials</i> , 2008 , 29, 3757-61	15.6	69
86	Design and Structure-Function Characterization of 3D Printed Synthetic Porous Biomaterials for Tissue Engineering. <i>Advanced Healthcare Materials</i> , 2018 , 7, e1701095	10.1	68
85	Analyzing bone, blood vessels, and biomaterials with microcomputed tomography. <i>IEEE Engineering in Medicine and Biology Magazine</i> , 2003 , 22, 77-83		68
84	Oxidized alginate hydrogels for bone morphogenetic protein-2 delivery in long bone defects. <i>Acta Biomaterialia</i> , 2014 , 10, 4390-9	10.8	62
83	Microcomputed tomography imaging of skeletal development and growth. <i>Birth Defects Research Part C: Embryo Today Reviews</i> , 2004 , 72, 250-9		62
82	Convergence in a mechanically complex phenotype: detecting structural adaptations for crushing in cichlid fish. <i>Evolution; International Journal of Organic Evolution</i> , 2008 , 62, 1587-99	3.8	59
81	Attenuated human bone morphogenetic protein-2-mediated bone regeneration in a rat model of composite bone and muscle injury. <i>Tissue Engineering - Part C: Methods</i> , 2013 , 19, 316-25	2.9	56
80	Functional analysis of limb recovery following autograft treatment of volumetric muscle loss in the quadriceps femoris. <i>Journal of Biomechanics</i> , 2014 , 47, 2013-21	2.9	52
79	Effect of porous orthopaedic implant material and structure on load sharing with simulated bone ingrowth: A finite element analysis comparing titanium and PEEK. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2018 , 80, 68-76	4.1	50
78	Getting PEEK to Stick to Bone: The Development of Porous PEEK for Interbody Fusion Devices. <i>Techniques in Orthopaedics</i> , 2017 , 32, 158-166	0.4	49
77	Nanoengineered particles for enhanced intra-articular retention and delivery of proteins. <i>Advanced Healthcare Materials</i> , 2014 , 3, 1562-7, 1525	10.1	42
76	Spatiotemporal delivery strategies for promoting musculoskeletal tissue regeneration. <i>Journal of Bone and Mineral Research</i> , 2009 , 24, 1507-11	6.3	42

75	In vivo model for evaluating the effects of mechanical stimulation on tissue-engineered bone repair. <i>Journal of Biomechanical Engineering</i> , 2009 , 131, 084502	2.1	40
74	Heparin-mediated delivery of bone morphogenetic protein-2 improves spatial localization of bone regeneration. <i>Science Advances</i> , 2020 , 6, eaay1240	14.3	40
73	One year of abaloparatide, a selective peptide activator of the PTH1 receptor, increased bone mass and strength in ovariectomized rats. <i>Bone</i> , 2017 , 95, 143-150	4.7	39
72	Rapidly polymerizing injectable click hydrogel therapy to delay bone growth in a murine re-synostosis model. <i>Biomaterials</i> , 2014 , 35, 9698-708	15.6	37
71	Hydrogel-based Delivery of rhBMP-2 Improves Healing of Large Bone Defects Compared With Autograft. <i>Clinical Orthopaedics and Related Research</i> , 2015 , 473, 2885-97	2.2	35
70	The effect of conditional inactivation of beta 1 integrins using twist 2 Cre, Osterix Cre and osteocalcin Cre lines on skeletal phenotype. <i>Bone</i> , 2014 , 68, 131-41	4.7	35
69	Porous methacrylate tissue engineering scaffolds: using carbon dioxide to control porosity and interconnectivity. <i>Journal of Materials Science</i> , 2006 , 41, 4197	4.3	35
68	A rapid method for determining protein diffusion through hydrogels for regenerative medicine applications. <i>APL Bioengineering</i> , 2018 , 2, 026110	6.6	29
67	Implantable Sensors for Regenerative Medicine. <i>Journal of Biomechanical Engineering</i> , 2017 , 139,	2.1	28
66	Effects of in vitro endochondral priming and pre-vascularisation of human MSC cellular aggregates in vivo. <i>Stem Cell Research and Therapy</i> , 2015 , 6, 218	8.3	27
65	Competitive Protein Binding Influences Heparin-Based Modulation of Spatial Growth Factor Delivery for Bone Regeneration. <i>Tissue Engineering - Part A</i> , 2017 , 23, 683-695	3.9	26
64	Enhanced in vivo retention of low dose BMP-2 via heparin microparticle delivery does not accelerate bone healing in a critically sized femoral defect. <i>Acta Biomaterialia</i> , 2017 , 59, 21-32	10.8	26
63	Skeletal Myoblast-Seeded Vascularized Tissue Scaffolds in the Treatment of a Large Volumetric Muscle Defect in the Rat Biceps Femoris Muscle. <i>Tissue Engineering - Part A</i> , 2017 , 23, 989-1000	3.9	26
62	Wireless Implantable Sensor for Noninvasive, Longitudinal Quantification of Axial Strain Across Rodent Long Bone Defects. <i>Journal of Biomechanical Engineering</i> , 2017 , 139,	2.1	25
61	Chondroitin Sulfate Glycosaminoglycan Scaffolds for Cell and Recombinant Protein-Based Bone Regeneration. <i>Stem Cells Translational Medicine</i> , 2019 , 8, 575-585	6.9	24
60	Intra-articular TSG-6 delivery from heparin-based microparticles reduces cartilage damage in a rat model of osteoarthritis. <i>Biomaterials Science</i> , 2018 , 6, 1159-1167	7.4	24
59	Osteogenic Differentiation of Mesenchymal Stem Cells by Mimicking the Cellular Niche of the Endochondral Template. <i>Tissue Engineering - Part A</i> , 2016 , 22, 1176-1190	3.9	24
58	Deformation and fatigue of tough 3D printed elastomer scaffolds processed by fused deposition modeling and continuous liquid interface production. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2017 , 75, 1-13	4.1	23

57	Extracellular matrix compression temporally regulates microvascular angiogenesis. <i>Science Advances</i> , 2020 , 6,	14.3	23
56	Effects of Local Antibiotic Delivery from Porous Space Maintainers on Infection Clearance and Induction of an Osteogenic Membrane in an Infected Bone Defect. <i>Tissue Engineering - Part A</i> , 2017 , 23, 91-100	3.9	22
55	Decorin-supplemented collagen hydrogels for the co-delivery of bone morphogenetic protein-2 and microvascular fragments to a composite bone-muscle injury model with impaired vascularization. <i>Acta Biomaterialia</i> , 2019 , 93, 210-221	10.8	22
54	Particulated Juvenile Articular Cartilage Implantation in the Knee: A 3-Year EPIC-µCT and Histological Examination. <i>Cartilage</i> , 2014 , 5, 74-7	3	22
53	3D Printing of Microgel-Loaded Modular Microcages as Instructive Scaffolds for Tissue Engineering. <i>Advanced Materials</i> , 2020 , 32, e2001736	24	22
52	Functional restoration of critically sized segmental defects with bone morphogenetic protein-2 and heparin treatment. <i>Clinical Orthopaedics and Related Research</i> , 2011 , 469, 3111-7	2.2	21
51	Effects of controlled dual growth factor delivery on bone regeneration following composite bone-muscle injury. <i>Acta Biomaterialia</i> , 2020 , 114, 63-75	10.8	20
50	Local deformation behavior of surface porous polyether-ether-ketone. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2017 , 65, 522-532	4.1	19
49	Influence of scaffold properties on the inter-relationship between human bone marrow derived stromal cells and endothelial cells in pro-osteogenic conditions. <i>Acta Biomaterialia</i> , 2015 , 25, 16-23	10.8	18
48	Mineralization of three-dimensional osteoblast cultures is enhanced by the interaction of 1[25-dihydroxyvitamin D3 and BMP2 via two specific vitamin D receptors. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2016 , 10, 40-51	4.4	18
47	Clinical potential of implantable wireless sensors for orthopedic treatments. <i>Expert Review of Medical Devices</i> , 2018 , 15, 255-264	3.5	18
46	Influence of structural load-bearing scaffolds on mechanical load- and BMP-2-mediated bone regeneration. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016 , 62, 169-181	4.1	18
45	Thermo-mechanical behavior and structure of melt blown shape-memory polyurethane nonwovens. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016 , 62, 545-555	4.1	17
44	Stem cell-synthesized extracellular matrix for bone repair. <i>Journal of Materials Chemistry</i> , 2010 , 20, 8942		17
43	Contrast enhanced µCT imaging of early articular changes in a pre-clinical model of osteoarthritis. <i>Osteoarthritis and Cartilage</i> , 2018 , 26, 118-127	6.2	17
42	Compressive cyclic ratcheting and fatigue of synthetic, soft biomedical polymers in solution. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016 , 54, 268-82	4.1	13
41	Wireless sensor enables longitudinal monitoring of regenerative niche mechanics during rehabilitation that enhance bone repair. <i>Bone</i> , 2020 , 135, 115311	4.7	13
40	Characterization of a small animal growth plate injury model using microcomputed tomography. <i>Bone</i> , 2010 , 46, 1555-63	4.7	13

39	Quantitative pre-clinical screening of therapeutics for joint diseases using contrast enhanced micro-computed tomography. <i>Osteoarthritis and Cartilage</i> , 2016 , 24, 1604-12	6.2	13
38	An Embedded Wireless Temperature Sensor for Orthopedic Implants. <i>IEEE Sensors Journal</i> , 2017 , 1-1	4	12
37	Articular Cartilage- and Synoviocyte-Binding Poly(ethylene glycol) Nanocomposite Microgels as Intra-Articular Drug Delivery Vehicles for the Treatment of Osteoarthritis. <i>ACS Biomaterials Science and Engineering</i> , 2020 , 6, 5084-5095	5.5	12
36	Multiomics characterization of mesenchymal stromal cells cultured in monolayer and as aggregates. <i>Biotechnology and Bioengineering</i> , 2020 , 117, 1761-1778	4.9	11
35	Biological evaluation and finite-element modeling of porous poly(para-phenylene) for orthopaedic implants. <i>Acta Biomaterialia</i> , 2018 , 72, 352-361	10.8	11
34	Low intensity, high frequency vibration training to improve musculoskeletal function in a mouse model of Duchenne muscular dystrophy. <i>PLoS ONE</i> , 2014 , 9, e104339	3.7	11
33	Functional integration of tissue-engineered bone constructs. <i>Journal of Musculoskeletal Neuronal Interactions</i> , 2004 , 4, 399-400	1.3	11
32	Supraspinatus tendon overuse results in degenerative changes to tendon insertion region and adjacent humeral cartilage in a rat model. <i>Journal of Orthopaedic Research</i> , 2017 , 35, 1910-1918	3.8	10
31	Decorin-containing collagen hydrogels as dimensionally stable scaffolds to study the effects of compressive mechanical loading on angiogenesis. <i>MRS Communications</i> , 2017 , 7, 466-471	2.7	10
30	The effect of contouring on fatigue resistance of three types of fracture fixation plates. <i>Journal of Orthopaedic Surgery and Research</i> , 2016 , 11, 107	2.8	10
29	Effects of BMP-2 dose and delivery of microvascular fragments on healing of bone defects with concomitant volumetric muscle loss. <i>Journal of Orthopaedic Research</i> , 2019 , 37, 553-561	3.8	10
28	Impaired bone healing following treatment of established nonunion correlates with serum cytokine expression. <i>Journal of Orthopaedic Research</i> , 2019 , 37, 299-307	3.8	10
27	Development of systemic immune dysregulation in a rat trauma model of biomaterial-associated infection. <i>Biomaterials</i> , 2021 , 264, 120405	15.6	9
26	Aggregate mesenchymal stem cell delivery ameliorates the regenerative niche for muscle repair. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2018 , 12, 1867-1876	4.4	9
25	Microarchitectural and mechanical characterization of the sickle bone. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2015 , 48, 220-228	4.1	8
24	Biomaterial strategies for improved intra-articular drug delivery. <i>Journal of Biomedical Materials Research - Part A</i> , 2021 , 109, 426-436	5.4	8
23	Early systemic immune biomarkers predict bone regeneration after trauma. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118,	11.5	7
22	Human platelet lysate supplementation of mesenchymal stromal cell delivery: issues of xenogenicity and species variability. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2017 , 11, 2876-2884	4.4	6

21	Triple growth factor delivery promotes functional bone regeneration following composite musculoskeletal trauma. <i>Acta Biomaterialia</i> , 2021 , 127, 180-192	10.8	6
20	BMP-2 delivery strategy modulates local bone regeneration and systemic immune responses to complex extremity trauma. <i>Biomaterials Science</i> , 2021 , 9, 1668-1682	7.4	6
19	Regional gene expression analysis of multiple tissues in an experimental animal model of post-traumatic osteoarthritis. <i>Osteoarthritis and Cartilage</i> , 2019 , 27, 294-303	6.2	5
18	Dynamic mass spectrometry probe for electro spray ionization mass spectrometry monitoring of bioreactors for therapeutic cell manufacturing. <i>Biotechnology and Bioengineering</i> , 2019 , 116, 121-131	4.9	5
17	Localized Osteoarthritis Disease-Modifying Changes due to Intra-articular Injection of Micronized Dehydrated Human Amnion/Chorion Membrane. <i>Regenerative Engineering and Translational Medicine</i> , 2019 , 5, 210-219	2.4	4
16	Immunomodulatory strategies for immune dysregulation following severe musculoskeletal trauma. <i>Journal of Immunology and Regenerative Medicine</i> , 2018 , 2, 21-35	2.8	4
15	Magnetoelastic sensors for real-time tracking of cell growth. <i>Biotechnology and Bioengineering</i> , 2021 , 118, 2380-2385	4.9	4
14	Effects of osteogenic ambulatory mechanical stimulation on early stages of BMP-2 mediated bone repair. <i>Connective Tissue Research</i> , 2021 , 1-12	3.3	3
13	Tissue Engineering for Pediatric Applications. <i>Tissue Engineering - Part A</i> , 2016 , 22, 195-6	3.9	2
12	Models of composite bone and soft-tissue limb trauma	534-554	2
11	Microcomputed Tomography. <i>Springer Handbooks</i> , 2019 , 1205-1236	1.3	2
10	A piezoelectric bone fixation plate for in vivo application and monitoring of mechanical loading during fracture healing. <i>Measurement Science and Technology</i> , 2020 , 31, 095703	2	1
9	Drug Delivery: Nanoengineered Particles for Enhanced Intra-Articular Retention and Delivery of Proteins (Adv. Healthcare Mater. 10/2014). <i>Advanced Healthcare Materials</i> , 2014 , 3, 1561-1561	10.1	1
8	Real-time monitoring of mechanical cues in the regenerative niche reveal dynamic strain magnitudes that enhance bone repair		1
7	Localized Sampling Enables Monitoring of Cell State via Inline Electro spray Ionization Mass Spectrometry. <i>Biotechnology Journal</i> , 2021 , 16, e2000277	5.6	1
6	Implantable biosensors for musculoskeletal health.. <i>Connective Tissue Research</i> , 2022 , 1-15	3.3	1
5	A magnetoelastic bone fixation device for controlled mechanical stimulation at femoral fractures in rodents. <i>Engineering Research Express</i> , 2021 , 3, 035028	0.9	0
4	Quantitative volumetric analysis of cardiac morphogenesis assessed through micro-computed tomography. <i>Developmental Dynamics</i> , 2007 , 236, spc1-spc1	2.9	

- 3 Elastic properties and microstructure of external cortical bone in the craniofacial skeleton of the baboon. *FASEB Journal*, **2009**, 23, 650.1 0.9
- 2 Chondrogenic Differentiation of Rat BMSCs in Hydrogel. *Manuals in Biomedical Research*, **2014**, 9-16
- 1 Regenerative Rehabilitation Strategies for Complex Bone Injuries. *Physiology in Health and Disease*, **2022**, 251-289 0.2