Frank Witte

List of Publications by Year
in descending order

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86	16,009	126708	69108
papers	citations	33	77
		h-index	g-index

87	87	87	7806
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	In vivo corrosion of four magnesium alloys and the associated bone response. Biomaterials, 2005, 26, 3557-3563.	5.7	2,118
2	Biodegradable metals. Materials Science and Engineering Reports, 2014, 77, 1-34.	14.8	1,816
3	Degradable biomaterials based on magnesium corrosion. Current Opinion in Solid State and Materials Science, 2008, 12, 63-72.	5.6	1,537
4	The history of biodegradable magnesium implants: A reviewâ˜†. Acta Biomaterialia, 2010, 6, 1680-1692.	4.1	1,515
5	In vitro and in vivo corrosion measurements of magnesium alloys. Biomaterials, 2006, 27, 1013-1018.	5.7	1,234
6	Current status on clinical applications of magnesium-based orthopaedic implants: A review from clinical translational perspective. Biomaterials, 2017, 112, 287-302.	5.7	674
7	Implant-derived magnesium induces local neuronal production of CGRP to improve bone-fracture healing in rats. Nature Medicine, 2016, 22, 1160-1169.	15.2	666
8	Biodegradable magnesiumâ€“hydroxyapatite metal matrix composites. Biomaterials, 2007, 28, 2163-2174.	5.7	570
9	Progress and Challenge for Magnesium Alloys as Biomaterials. Advanced Engineering Materials, 2008, 10, B3.	1.6	564
10	Magnesium alloys as implant materials â€“ Principles of property design for Mgâ€“RE alloysâ˜†. Acta Biomaterialia, 2010, 6, 1714-1725.	4.1	503
11	Evaluation of short-term effects of rare earth and other elements used in magnesium alloys on primary cells and cell linesâ˜†. Acta Biomaterialia, 2010, 6, 1834-1842.	4.1	496
12	In vivo corrosion and corrosion protection of magnesium alloy LAE442â˜†. Acta Biomaterialia, 2010, 6, 1792-1799.	4.1	377
13	Biodegradable magnesium scaffolds: Part 1: Appropriate inflammatory response. Journal of Biomedical Materials Research - Part A, 2007, 81A, 748-756.	2.1	347
14	Recommendation for modifying current cytotoxicity testing standards for biodegradable magnesium-based materials. Acta Biomaterialia, 2015, 21, 237-249.	4.1	338
15	Magnesium hydroxide temporarily enhancing osteoblast activity and decreasing the osteoclast number in peri-implant bone remodellingâ˜†. Acta Biomaterialia, 2010, 6, 1861-1868.	4.1	282
16	Biodegradable magnesium scaffolds: Part II: Peri-implant bone remodeling. Journal of Biomedical Materials Research - Part A, 2007, 81A, 757-765.	2.1	281
17	Current status and outlook on the clinical translation of biodegradable metals. Materials Today, 2019, 23, 57-71.	8.3	271
18	Reprint of: The history of biodegradable magnesium implants: A review. Acta Biomaterialia, 2015, 23, S28-S40.	4.1	238

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19	Fast escape of hydrogen from gas cavities around corroding magnesium implants. Acta Biomaterialia, 2013, 9, 8714-8721.	4.1	237
20	Biodegradable Fe-based alloys for use in osteosynthesis: Outcome of an in vivo study after 52weeks. Acta Biomaterialia, 2014, 10, 3346-3353.	4.1	211
21	The morphology of anisotropic 3D-printed hydroxyapatite scaffolds. Biomaterials, 2008, 29, 3799-3806.	5.7	190
22	Effect of the addition of low rare earth elements (lanthanum, neodymium, cerium) on the biodegradation and biocompatibility of magnesium. Acta Biomaterialia, 2015, 11, 554-562.	4.1	184
23	Simultaneous regeneration of articular cartilage and subchondral bone induced by spatially presented TGF-beta and BMP-4 in a bilayer affinity binding system. Acta Biomaterialia, 2012, 8, 3283-3293.	4.1	105
24	Unphysiologically High Magnesium Concentrations Support Chondrocyte Proliferation and Redifferentiation. Tissue Engineering, 2006, 12, 3545-3556.	4.9	79
25	Biocompatibility of rapidly solidified magnesium alloy RS66 as a temporary biodegradable metal. Acta Biomaterialia, 2013, 9, 8509-8517.	4.1	79
26	Evaluation of the skin sensitizing potential of biodegradable magnesium alloys. Journal of Biomedical Materials Research - Part A, 2008, 86A, 1041-1047.	2.1	77
27	Biodegradable Magnesium Alloys Promote Angioâ€Osteogenesis to Enhance Bone Repair. Advanced Science, 2020, 7, 2000800.	5.6	72
28	Histology and research at the hard tissueâ€“implant interface using Technovit 9100 New embedding technique. Acta Biomaterialia, 2010, 6, 4447-4455.	4.1	67
29	High purity biodegradable magnesium coating for implant application. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2011, 176, 1711-1717.	1.7	53
30	The in vitro and in vivo biological effects and osteogenic activity of novel biodegradable porous Mg alloy scaffolds. Materials and Design, 2020, 189, 108514.	3.3	50
31	Articular cartilage regeneration using acellular bioactive affinity-binding alginate hydrogel: A 6-month study in a mini-pig model of osteochondral defects. Journal of Orthopaedic Translation, 2019, 16, 40-52.	1.9	42
32	Mesenchymal Stem Cell-Dependent Formation of Heterotopic Tendon-Bone Insertions (Osteotendinous) Tj ETQq0 0 0 rgBT /Overlock 10	1.4	40
33	Degradation, Bone Regeneration and Tissue Response of an Innovative Volume Stable Magnesium-Supported GBR/GTR Barrier Membrane. International Journal of Molecular Sciences, 2020, 21, 3098.	1.8	38
34	Biodegradable Metals. , 2012, , 93-109.		33
35	Determination of concentration gradients in bone tissue generated by a biologically degradable magnesium implant. Journal of Analytical Atomic Spectrometry, 2009, 24, 181-188.	1.6	32
36	Histologic and Biomechanical Analysis of Anterior Cruciate Ligament Graft to Bone Healing in Skeletally Immature Sheep. Arthroscopy - Journal of Arthroscopic and Related Surgery, 2008, 24, 1221-1231.	1.3	31

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37	In vitro corrosion of ZEK100 plates in Hank's Balanced Salt Solution. BioMedical Engineering OnLine, 2012, 11, 12.	1.3	31
38	Design of a migration assay for human gingival fibroblasts on biodegradable magnesium surfaces. Acta Biomaterialia, 2018, 79, 158-167.	4.1	31
39	Biomechanical characterisation of a degradable magnesium-based (MgCa0.8) screw. Journal of Materials Science: Materials in Medicine, 2012, 23, 649-655.	1.7	30
40	Preliminary study of microstructure, mechanical properties and corrosion resistance of antibacterial Ti-15Zr-xCu alloy for dental application. Journal of Materials Science and Technology, 2020, 50, 31-43.	5.6	30
41	Non-invasive pH determination adjacent to degradable biomaterials in vivo. Acta Biomaterialia, 2014, 10, 34-39.	4.1	26
42	Biodegradable magnesium barrier membrane used for guided bone regeneration in dental surgery. Bioactive Materials, 2022, 14, 152-168.	8.6	25
43	Time-resolved in situ synchrotron-microCT: 4D deformation of bone and bone analogues using digital volume correlation. Acta Biomaterialia, 2021, 131, 424-439.	4.1	24
44	Tunnel Widening after Anterior Cruciate Ligament Reconstruction. American Journal of Sports Medicine, 2009, 37, 1609-1617.	1.9	22
45	InÂvivo fluorescence imaging of apoptosis during foreign body response. Biomaterials, 2012, 33, 6926-6932.	5.7	22
46	The Influence of Intraoperative Pretensioning on the Chondroprotective Effect of Meniscal Transplants. American Journal of Sports Medicine, 2006, 34, 397-406.	1.9	21
47	Biodegradable magnesium fixation screw for barrier membranes used in guided bone regeneration. Bioactive Materials, 2022, 14, 15-30.	8.6	21
48	Highly Porous Magnesium Alloy Structures and Their Properties Regarding Degradable Implant Application. Advanced Engineering Materials, 2014, 16, 309-318.	1.6	18
49	Multi-scale mechanical and morphological characterisation of sintered porous magnesium-based scaffolds for bone regeneration in critical-sized defects. Acta Biomaterialia, 2021, 127, 338-352.	4.1	17
50	Action potentials in primary osteoblasts and in the MG-63 osteoblast-like cell line. Journal of Bioenergetics and Biomembranes, 2011, 43, 311-322.	1.0	16
51	Biodegradable Mg-based alloys: biological implications and restorative opportunities. International Materials Reviews, 2023, 68, 365-403.	9.4	16
52	Analysis of a Pure Magnesium Membrane Degradation Process and Its Functionality When Used in a Guided Bone Regeneration Model in Beagle Dogs. Materials, 2022, 15, 3106.	1.3	15
53	Low-cycle full-field residual strains in cortical bone and their influence on tissue fracture evaluated via in situ stepwise and continuous X-ray computed tomography. Journal of Biomechanics, 2020, 113, 110105.	0.9	14
54	Biodegradation of a Magnesium Alloy Fixation Screw Used in a Guided Bone Regeneration Model in Beagle Dogs. Materials, 2022, 15, 4111.	1.3	14

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55	Electrochemical Sensing of Dissolved Hydrogen in Aqueous Solutions as a Tool to Monitor Magnesium Alloy Corrosion. Electroanalysis, 2013, 25, 1105-1110.	1.5	13
56	Bone Marrow-Derived Cell Concentrates Have Limited Effects on Osteochondral Reconstructions in the Mini Pig. Tissue Engineering - Part C: Methods, 2014, 20, 215-226.	1.1	13
57	Effect of physical cues of altered extract media from biodegradable magnesium implants on human gingival fibroblasts. Acta Biomaterialia, 2019, 98, 186-195.	4.1	12
58	Muscle response to leg lengthening during distraction osteogenesis. Journal of Orthopaedic Research, 2009, 27, 483-488.	1.2	11
59	Microtomography of magnesium implants in bone and their degradation. , 2006, 6318, 35.		10
60	Editorial. Acta Biomaterialia, 2010, 6, 1679-1679.	4.1	10
61	Sustained local ionic homeostatic imbalance caused by calcification modulates inflammation to trigger heterotopic ossification. Acta Biomaterialia, 2022, 145, 1-24.	4.1	10
62	Biodegradable open-porous scaffolds made of sintered magnesium W4 and WZ21 short fibres show biocompatibility in vitro and in long-term in vivo evaluation. Acta Biomaterialia, 2022, 148, 389-404.	4.1	10
63	Preparation and In Vivo Imaging of Lucifer Yellow Tagged Hydrogels. Macromolecular Symposia, 2011, 309-310, 222-228.	0.4	8
64	In vivo comparative study of tissue reaction to bare and antimicrobial polymer coated transcutaneous implants. Materials Science and Engineering C, 2016, 61, 712-719.	3.8	8
65	Controlling magnesium corrosion and degradation-regulating mineralization using matrix GLA protein. Acta Biomaterialia, 2019, 98, 142-151.	4.1	8
66	COMPARATIVE STRUCTURAL ANALYSIS OF THE CANINE FEMORAL HEAD IN LEGGâ€CALVÃ‰â€PERTHES DISEASE. Veterinary Radiology and Ultrasound, 2009, 50, 404-411.	0.4	7
67	Bio-mimetic hollow scaffolds for long bone replacement. Proceedings of SPIE, 2009, , .	0.8	6
68	Electrochemical removal of metallic implants from Technovit 9100 New embedded hard and soft tissues prior to histological sectioning. Histochemistry and Cell Biology, 2013, 140, 585-593.	0.8	6
69	Normal trabecular vertebral bone is formed via rapid transformation of mineralized spicules: A high-resolution 3D ex-vivo murine study. Acta Biomaterialia, 2019, 86, 429-440.	4.1	5
70	Comparison of Bone Mineral Parameter Measurements by Dual-Energy X-ray Absorptiometry With Bone Stiffness Measurements as Indicators of the Load-Bearing Capacity of Regenerating Bone. Journal of Orthopaedic Trauma, 2010, 24, 181-187.	0.7	4
71	Open-porous magnesium-based scaffolds withstand in vitro corrosion under cyclic loading: A mechanistic study. Bioactive Materials, 2023, 19, 406-417.	8.6	4
72	Coating of titanium implants with copolymer supports bone regeneration: a comparative in vivo study in rabbits. Journal of Applied Biomaterials and Biomechanics, 2011, 9, 26-33.	0.4	3

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73	Biodegradable Metals. , 2020, , 271-287.		3
74	Model Based 3D Segmentation and OCT Image Undistortion of Percutaneous Implants. Lecture Notes in Computer Science, 2011, 14, 454-462.	1.0	3
75	1st Minimum Consensus Meeting on Standardization in Biodegradable Metals. Acta Biomaterialia, 2013, 9, 8472-8473.	4.1	2
76	In situ optical coherence tomography of percutaneous implant-tissue interfaces in a murine model. Biomedizinische Technik, 2013, 58, 359-67.	0.9	2
77	Exploring the degradation behavior of MgXAg alloys by in vitro electrochemical methods. Bioactive Materials, 2022, 7, 441-452.	8.6	2
78	Internal channel structures in trabecular bone. , 2004, 5535, 792.		1
79	Biodegradable Magnesium Implants - How Do They Corrode in-vivo?. , 2011, , 17-17.		1
80	Designing the Biocompatibility of Biohybrids. Advances in Biochemical Engineering/Biotechnology, 2011, 126, 285-296.	0.6	1
81	10th BIOMETAL2018 - International Symposium on Biodegradable Metals. Acta Biomaterialia, 2019, 98, 1-2.	4.1	1
82	Biodegradable Magnesium Implants â€" How do They Corrode in-Vivo?. , 2011, , 17-17.		1
83	Responsive Biosensors for Biodegradable Magnesium Implants. , 2009, , .		0
84	Acta Biomaterialia Special Issue: 4th Biometal 2012, Maratea, Italy. Acta Biomaterialia, 2013, 9, 8474.	4.1	0
85	Global collaboration on Biomaterials is starting with Binational Workshopsâ€"Sino-German Workshop on Biomaterials in Beijing 2016. Bioactive Materials, 2017, 2, 51-52.	8.6	0
86	Immune response to nanobiomaterials. , 2017, , 249-260.		0