Horst Fischer

List of Publications by Year
in descending order

110 papers	4,657 citations	117625 34 h-index	110387 64 g-index
111 all docs	111 docs citations	111 times ranked	6370 citing authors

#	Article	IF	Citations
1	Controlling Shear Stress in 3D Bioprinting is a Key Factor to Balance Printing Resolution and Stem Cell Integrity. Advanced Healthcare Materials, 2016, 5, 326-333.	7.6	571
2	3D printing of bone substitute implants using calcium phosphate and bioactive glasses. Journal of the European Ceramic Society, 2010, 30, 2563-2567.	5.7	275
3	The Stiffness and Structure of Three-Dimensional Printed Hydrogels Direct the Differentiation of Mesenchymal Stromal Cells Toward Adipogenic and Osteogenic Lineages. Tissue Engineering - Part A, 2015, 21, 740-756.	3.1	181
4	Three-dimensional printing of stem cell-laden hydrogels submerged in a hydrophobic high-density fluid. Biofabrication, 2013, 5, 015003.	7.1	177
5	In vivo fracture resistance of implant-supported all-ceramic restorations. Journal of Prosthetic Dentistry, 2003, 90, 325-331.	2.8	169
6	Fracture toughness of dental ceramics: comparison of bending and indentation method. Dental Materials, 2002, 18, 12-19.	3.5	147
7	GelMA-collagen blends enable drop-on-demand 3D printablility and promote angiogenesis. Biofabrication, 2017, 9, 045002.	7.1	144
8	Bioprinting Organotypic Hydrogels with Improved Mesenchymal Stem Cell Remodeling and Mineralization Properties for Bone Tissue Engineering. Advanced Healthcare Materials, 2016, 5, 1336-1345.	7.6	143
9	Engineering biofunctional in vitro vessel models using a multilayer bioprinting technique. Scientific Reports, 2018, 8, 10430.	3.3	143
10	Incorporating 4D into Bioprinting: Realâ€Time Magnetically Directed Collagen Fiber Alignment for Generating Complex Multilayered Tissues. Advanced Healthcare Materials, 2018, 7, e1800894.	7.6	115
11	Corneal bioprinting utilizing collagenâ€based bioinks and primary human keratocytes. Journal of Biomedical Materials Research - Part A, 2019, 107, 1945-1953.	4.0	98
12	Three-Dimensional Printing and Angiogenesis: Tailored Agarose-Type I Collagen Blends Comprise Three-Dimensional Printability and Angiogenesis Potential for Tissue-Engineered Substitutes. Tissue Engineering - Part C: Methods, 2017, 23, 604-615.	2.1	94
13	A tailored three-dimensionally printable agaroseâ€“collagen blend allows encapsulation, spreading, and attachment of human umbilical artery smooth muscle cells. Biofabrication, 2016, 8, 025011.	7.1	93
14	Supporting Biomaterials for Articular Cartilage Repair. Cartilage, 2012, 3, 205-221.	2.7	91
15	Mechanically Tunable Bioink for 3D Bioprinting of Human Cells. Advanced Healthcare Materials, 2017, 6, 1700255.	7.6	86
16	Development of a solvent-free polylactide/calcium carbonate composite for selective laser sintering of bone tissue engineering scaffolds. Materials Science and Engineering C, 2019, 101, 660-673.	7.3	86
17	Biofabrication Under Fluorocarbon: A Novel Freeform Fabrication Technique to Generate High Aspect Ratio Tissue-Engineered Constructs. BioResearch Open Access, 2013, 2, 374-384.	2.6	82
18	The effect of crystallization of bioactive bioglass 45S5 on apatite formation and degradation. Dental Materials, 2013, 29, 1256-1264.	3.5	70

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19	Cellulose Nanofibril Hydrogel Tubes as Sacrificial Templates for Freestanding Tubular Cell Constructs. Biomacromolecules, 2016, 17, 905-913.	5.4	63
20	Artificial Neural Networks as a powerful numerical tool to classify specific features of a tooth based on 3D scan data. Computers in Biology and Medicine, 2017, 80, 65-76.	7.0	59
21	Bone regeneration induced by a 3D architectured hydrogel in a rat critical-size calvarial defect. Biomaterials, 2017, 113, 158-169.	11.4	58
22	Manufacturing of individual biodegradable bone substitute implants using selective laser melting technique. Journal of Biomedical Materials Research - Part A, 2011, 97A, 466-471.	4.0	54
23	3D bioprinting of cell-laden hydrogels for advanced tissue engineering. Current Opinion in Biomedical Engineering, 2017, 2, 58-66.	3.4	50
24	Bioactivation of inert alumina ceramics by hydroxylation. Biomaterials, 2005, 26, 6151-6157.	11.4	49
25	Role of Nrf2 in Fracture Healing: Clinical Aspects of Oxidative Stress. Calcified Tissue International, 2019, 105, 341-352.	3.1	46
26	Exploring Cancer Cell Behavior In Vitro in Three-Dimensional Multicellular Bioprintable Collagen-Based Hydrogels. Cancers, 2019, 11, 180.	3.7	45
27	Plasma-Enhanced Chemical Vapor Deposition (PE-CVD) yields better Hydrolytical Stability of Biocompatible SiOx Thin Films on Implant Alumina Ceramics compared to Rapid Thermal Evaporation Physical Vapor Deposition (PVD). ACS Applied Materials & Interfaces, 2016, 8, 17805-17816.	8.0	41
28	Nrf2 Deficiency Impairs Fracture Healing in Mice. Calcified Tissue International, 2014, 95, 349-361.	3.1	40
29	Hand-held bioprinting for de novo vascular formation applicable to dental pulp regeneration. Connective Tissue Research, 2020, 61, 205-215.	2.3	40
30	Inkjet printed periodical micropatterns made of inert alumina ceramics induce contact guidance and stimulate osteogenic differentiation of mesenchymal stromal cells. Acta Biomaterialia, 2016, 44, 85-96.	8.3	38
31	Bioactive and Thermally Compatible Glass Coating on Zirconia Dental Implants. Journal of Dental Research, 2015, 94, 297-303.	5.2	37
32	Laser-based in situ embedding of metal nanoparticles into bioextruded alginate hydrogel tubes enhances human endothelial cell adhesion. Nano Research, 2016, 9, 3407-3427.	10.4	37
33	Synthesis of novel tricalcium phosphate-bioactive glass composite and functionalization with rhBMP-2. Journal of Materials Science: Materials in Medicine, 2011, 22, 763-771.	3.6	36
34	Low-aspect ratio nanopatterns on bioinert alumina influence the response and morphology of osteoblast-like cells. Biomaterials, 2015, 62, 58-65.	11.4	35
35	An engineered multicomponent bone marrow niche for the recapitulation of hematopoiesis at ectopic transplantation sites. Journal of Hematology and Oncology, 2016, 9, 4.	17.0	35
36	Functional MR Imaging Mapping of Human Articular Cartilage Response to Loading. Radiology, 2017, 282, 464-474.	7.3	35

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37	Wet chemical synthesis of strontium-substituted hydroxyapatite and its influence on the mechanical and biological properties. Ceramics International, 2014, 40, 9195-9203.	4.8	34
38	Planning of mandibular reconstructions based on statistical shape models. International Journal of Computer Assisted Radiology and Surgery, 2017, 12, 99-112.	2.8	34
39	Multiscale 3D Bioprinting by Nozzleâ€Free Acoustic Droplet Ejection. Small Methods, 2021, 5, e2000971.	8.6	34
40	A modified size effect model for brittle nonmetallic materials. Engineering Fracture Mechanics, 2002, 69, 781-791.	4.3	32
41	Cytocompatibility of high strength nonâ€oxide ceramics. Journal of Biomedical Materials Research - Part A, 2010, 93A, 67-76.	4.0	31
42	Slurry deposition by airbrush for selective laser sintering of ceramic components. Journal of the European Ceramic Society, 2009, 29, 1-6.	5.7	31
43	Influence of connector design and material composition and veneering on the stress distribution of all-ceramic fixed dental prostheses: A finite element study. Dental Materials, 2011, 27, e171-e175.	3.5	30
44	Subcritical crack growth behavior of dispersion oxide ceramics. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2010, 95B, 202-206.	3.4	29
45	Chemical strengthening of a dental lithium disilicate glassâ€“ceramic material. Journal of Biomedical Materials Research - Part A, 2008, 87A, 582-587.	4.0	28
46	Influence of the material properties of a poly(D,L-lactide)/Î²-tricalcium phosphate composite on the processability by selective laser sintering. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 87, 267-278.	3.1	28
47	Calcium phosphate scaffolds mimicking the gradient architecture of native long bones. Journal of Biomedical Materials Research - Part A, 2014, 102, 3677-3684.	4.0	27
48	Does soft really matter? Differentiation of induced pluripotent stem cells into mesenchymal stromal cells is not influenced by soft hydrogels. Biomaterials, 2018, 156, 147-158.	11.4	27
49	Current Trends in In Vitro Modeling to Mimic Cellular Crosstalk in Periodontal Tissue. Advanced Healthcare Materials, 2021, 10, e2001269.	7.6	27
50	Engineered Potato virus X nanoparticles support hydroxyapatite nucleation for improved bone tissue replacement. Acta Biomaterialia, 2017, 62, 317-327.	8.3	24
51	Suppression of subcritical crack growth in a leucite-reinforced dental glass by ion exchange. Journal of Biomedical Materials Research Part B, 2003, 66A, 885-889.	3.1	23
52	Detection of microscopic cracks in dental ceramic materials by fluorescent penetrant method. Journal of Biomedical Materials Research Part B, 2002, 61, 153-158.	3.1	22
53	The Effect of Addition of Calcium Phosphate Particles to Hydrogelâ€Based Composite Materials on Stiffness and Differentiation of Mesenchymal Stromal Cells toward Osteogenesis. Advanced Healthcare Materials, 2018, 7, e1800343.	7.6	21
54	Effect of nanoscale surface topography on the adsorption of globular proteins. Applied Surface Science, 2021, 535, 147671.	6.1	21

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55	Immobilization of specific proteins to titanium surface using self-assembled monolayer technique. Dental Materials, 2015, 31, 1169-1179.	3.5	20
56	Functional in situ assessment of human articular cartilage using MRI: a whole-knee joint loading device. Biomechanics and Modeling in Mechanobiology, 2017, 16, 1971-1986.	2.8	20
57	Combination of vascularization and cilia formation for threeâ€dimensional airway tissue engineering. Journal of Biomedical Materials Research - Part A, 2019, 107, 2053-2062.	4.0	19
58	Influence of Different Cell Types and Sources on Pre-Vascularisation in Fibrin and Agaroseâ€“Collagen Gels. Organogenesis, 2020, 16, 14-26.	1.2	19
59	Biomechanical effects of posterior pedicle screw-based instrumentation using titanium versus carbon fiber reinforced PEEK in an osteoporotic spine human cadaver model. Clinical Biomechanics, 2020, 80, 105153.	1.2	19
60	Elimination of low-quality ceramic posts by proof testing. Dental Materials, 2002, 18, 570-575.	3.5	18
61	Biological Activation of Inert Ceramics: Recent Advances Using Tailored Self-Assembled Monolayers on Implant Ceramic Surfaces. Materials, 2014, 7, 4473-4492.	2.9	18
62	Calcium phosphate/microgel composites for 3D powderbed printing of ceramic materials. Biomedizinische Technik, 2016, 61, 267-279.	0.8	18
63	Improvement of the long-term adhesive strength between metal stem and polymethylmethacrylate bone cement by a silica/silane interlayer system. Journal of Biomedical Materials Research Part B, 2001, 57, 413-418.	3.1	17
64	Towards osseointegration of bioinert ceramics: Introducing functional groups to alumina surface by tailored self assembled monolayer technique. Journal of the European Ceramic Society, 2012, 32, 3063-3071.	5.7	17
65	Potential of CO2 lasers (10.6 Âµm) associated with fluorides in inhibiting human enamel erosion. Brazilian Oral Research, 2014, 28, 1-6.	1.4	16
66	Impaired Fracture Healing after Hemorrhagic Shock. Mediators of Inflammation, 2015, 2015, 1-7.	3.0	16
67	Degradation and swelling issues of poly-(d,l-lactide)/Î²-tricalcium phosphate/calcium carbonate composites for bone replacement. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 54, 82-92.	3.1	16
68	Calcium phosphate scaffolds with defined interconnecting channel structure provide a mimetic 3D niche for bone marrow metastasized tumor cell growth. Acta Biomaterialia, 2019, 88, 527-539.	8.3	16
69	A cusp supporting framework design can decrease critical stresses in veneered molar crowns. Dental Materials, 2014, 30, 321-326.	3.5	15
70	Influence of nanoporous titanium niobium alloy surfaces produced via hydrogen peroxide oxidative etching on the osteogenic differentiation of human mesenchymal stromal cells. Materials Science and Engineering C, 2019, 98, 635-648.	7.3	15
71	Synchronized Dual Bioprinting of Bioinks and Biomaterial Inks as a Translational Strategy for Cartilage Tissue Engineering. 3D Printing and Additive Manufacturing, 2019, 6, 63-71.	2.9	15
72	Structural changes in ceramic veneered three-unit implant-supported restorations as a consequence of static and dynamic loading. Dental Materials, 2008, 24, 464-470.	3.5	14

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73	Towards osseointegration of bioinert ceramics: Can biological agents be immobilized on alumina substrates using self-assembled monolayer technique?. Journal of the European Ceramic Society, 2013, 33, 2705-2713.	5.7	14
74	Influence of bioactive glass-coating of zirconia implant surfaces on human osteoblast behavior in vitro. Dental Materials, 2019, 35, 862-870.	3.5	14
75	Calcium Phosphate Based Three-Dimensional Cold Plotted Bone Scaffolds for Critical Size Bone Defects. BioMed Research International, 2014, 2014, 1-10.	1.9	13
76	Computational geometry assessment for morphometric analysis of the mandible. Computer Methods in Biomechanics and Biomedical Engineering, 2017, 20, 27-34.	1.6	13
77	Selective laser-melted fully biodegradable scaffold composed of poly(<scp>d</scp> ,<scp>l</scp>) Tj ETQq1 1 0.784314 rgBT /Overlo maxillofacial reconstruction: In vitro and in vivo results. , 2017, 105, 1216-1231.		13
78	Attachment of Ultralow Amount of Engineered Plant Viral Nanoparticles to Mesenchymal Stem Cells Enhances Osteogenesis and Mineralization. Advanced Healthcare Materials, 2020, 9, e2001245.	7.6	13
79	Biofunctionalization of Dental Abutment Surfaces by Crosslinked ECM Proteins Strongly Enhances Adhesion and Proliferation of Gingival Fibroblasts. Advanced Healthcare Materials, 2021, 10, e2100132.	7.6	13
80	Coupling of Phosphates on Alumina Surfaces for Bioactivation. Journal of the American Ceramic Society, 2007, 90, 1644-1646.	3.8	12
81	A New Laser-Processing Strategy for Improving Enamel Erosion Resistance. Journal of Dental Research, 2017, 96, 1168-1175.	5.2	12
82	Shear strength of composite bonded to Er:YAG laser-prepared enamel: an in vitro comparative study. Lasers in Medical Science, 2013, 28, 879-889.	2.1	11
83	Emerging Neuroblastoma 3D In Vitro Models for Pre-Clinical Assessments. Frontiers in Immunology, 2020, 11, 584214.	4.8	11
84	Hemocompatibility of high strength oxide ceramic materials: Anin vitro study. Journal of Biomedical Materials Research - Part A, 2007, 81A, 982-986.	4.0	10
85	Influence of tooth mobility on critical stresses in all-ceramic inlay-retained fixed dental prostheses: A finite element study. Dental Materials, 2012, 28, 146-151.	3.5	10
86	Manufacturing and Characterization of Highly Porous Bioactive Glass Composite Scaffolds Using Unidirectional Freeze Casting. Advanced Engineering Materials, 2017, 19, 1700129.	3.5	10
87	Effects of Strontium-Doped Î²-Tricalcium Scaffold on Longitudinal Nuclear Factor-Kappa Beta and Vascular Endothelial Growth Factor Receptor-2 Promoter Activities during Healing in a Murine Critical-Size Bone Defect Model. International Journal of Molecular Sciences, 2020, 21, 3208.	4.1	9
88	Retrievability of implant-supported zirconia restorations cemented on zirconia abutments. Journal of Prosthetic Dentistry, 2018, 120, 740-746.	2.8	8
89	In situ demineralisation of human enamel studied by synchrotron-based X-ray microtomography â€“ A descriptive pilot-study. Micron, 2013, 44, 404-409.	2.2	7
90	Glass-ceramic coating material for the CO 2 laser based sintering of thin films as caries and erosion protection. Dental Materials, 2017, 33, 995-1003.	3.5	7

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91	Biological Activation of Bioinert Medical High-Performance Oxide Ceramics by Hydrolytically Stable Immobilization of c(RGDyK) and BMP-2. ACS Applied Materials & Interfaces, 2018, 10, 38669-38680.	8.0	7
92	Effect of platelet mediator concentrate (PMC) on Achilles tenocytes: an in vitro study. BMC Musculoskeletal Disorders, 2016, 17, 307.	1.9	6
93	Periodic microstructures on bioactive glass surfaces enhance osteogenic differentiation of human mesenchymal stromal cells and promote osteoclastogenesis in vitro. Journal of Biomedical Materials Research - Part A, 2018, 106, 1965-1978.	4.0	6
94	Mimicking physiological flow conditions to study alterations of bioactive glass surfaces in vitro. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2018, 106, 228-236.	3.4	6
95	Objective computerised assessment of residual ridge resorption in the human maxilla and maxillary sinus pneumatisation. Clinical Oral Investigations, 2020, 24, 3223-3235.	3.0	6
96	Temperature-dependent morphology changes of noble metal tricalcium phosphate-nanocomposites. Ceramics International, 2014, 40, 7931-7939.	4.8	5
97	Assembly of thin-walled, cell-laden hydrogel conduits inflated with perfluorocarbon. RSC Advances, 2014, 4, 46460-46469.	3.6	5
98	Response of umbilical cord mesenchymal stromal cells to varying titanium topographical signals. Journal of Biomedical Materials Research - Part A, 2018, 106, 180-191.	4.0	5
99	Enhanced osteogenic differentiation of human mesenchymal stromal cells as response to periodical microstructured Ti6Al4V surfaces. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2020, 108, 2218-2226.	3.4	5
100	Adhesion of human mesenchymal stem cells can be controlled by electron beam-microstructured titanium alloy surfaces during osteogenic differentiation. Biomedizinische Technik, 2015, 60, 215-23.	0.8	4
101	Classification of the level of mandibular atrophy â€“ A computer-assisted study based on 500 CT scans. Journal of Cranio-Maxillo-Facial Surgery, 2017, 45, 2061-2067.	1.7	4
102	Ultrasound-mediated deposition and cytocompatibility of apatite-like coatings on magnesium alloys. Surface and Coatings Technology, 2018, 345, 167-176.	4.8	4
103	Influence of additional cement augmentation on endplate stability in circumferential stabilisation of osteoporotic spine fractures. Clinical Biomechanics, 2019, 68, 163-168.	1.2	4
104	A 3D printed in vitro bone model for the assessment of molecular and cellular cues in metastatic neuroblastoma. Biomaterials Science, 2021, 9, 1716-1727.	5.4	4
105	Two-photon laser scanning microscopy as a useful tool for imaging and evaluating macrophage-, IL-4 activated macrophage- and osteoclast-basedIn Vitrodegradation of beta-tricalcium phosphate bone substitute material. Microscopy Research and Technique, 2014, 77, 143-152.	2.2	3
106	Preparation of spherical calcium phosphate granulates suitable for the biofunctionalization of active brazed titanium alloy coatings. Biomedizinische Technik, 2015, 60, 105-14.	0.8	3
107	Simulation of the gelation process of hydrogel droplets in 3D bioprinting. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 117-118.	0.2	3
108	Ensuring defined porosity and pore size using ammonium hydrogen carbonate as porosification agent for calcium phosphate scaffolds. BioNanoMaterials, 2013, 14, .	1.4	1

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109	Erforschung Ti-Co-basierter, bioaktiver AuftraglÃ¶tschichten auf oxidischen Hochleistungskeramiken in der Medizintechnik. Materialwissenschaft Und Werkstofftechnik, 2014, 45, 504-504.	0.9	1
110	Structuring of bioactive glass surfaces at the micrometer scale by direct casting intended to influence cell response. Biomedical Glasses, 2016, 2, .	2.4	1