

Frederik Claeysens

List of Publications by Year in descending order

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120
papers

6,311
citations

76294

40
h-index

71651

76
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123
all docs

123
docs citations

123
times ranked

8334
citing authors

#	ARTICLE	IF	CITATIONS
1	The Tissue-Engineered Vascular Craftâ€™Past, Present, and Future. <i>Tissue Engineering - Part B: Reviews</i> , 2016, 22, 68-100.	2.5	576
2	Graphitic Nanofilms as Precursors to Wurtzite Films: Theory. <i>Physical Review Letters</i> , 2006, 96, 066102.	2.9	514
3	Pulsed laser ablation and deposition of thin films. <i>Chemical Society Reviews</i> , 2004, 33, 23.	18.7	368
4	Growth of ZnO thin filmsâ€™experiment and theory. <i>Journal of Materials Chemistry</i> , 2005, 15, 139-148.	6.7	364
5	High-Accuracy Computation of Reaction Barriers in Enzymes. <i>Angewandte Chemie - International Edition</i> , 2006, 45, 6856-6859.	7.2	253
6	Characterization of Solid-State Dye-Sensitized Solar Cells Utilizing High Absorption Coefficient Metal-Free Organic Dyes. <i>Journal of the American Chemical Society</i> , 2008, 130, 1367-1375.	6.6	241
7	Direct laser writing of 3D scaffolds for neural tissue engineering applications. <i>Biofabrication</i> , 2011, 3, 045005.	3.7	180
8	Three-Dimensional Biodegradable Structures Fabricated by Two-Photon Polymerization. <i>Langmuir</i> , 2009, 25, 3219-3223.	1.6	177
9	Nerve guides manufactured from photocurable polymers to aid peripheral nerve repair. <i>Biomaterials</i> , 2015, 49, 77-89.	5.7	148
10	An aligned 3D neuronal-glia co-culture model for peripheral nerve studies. <i>Biomaterials</i> , 2012, 33, 5901-5913.	5.7	139
11	Production of nanocrystalline diamond by laser ablation at the solid/liquid interface. <i>Diamond and Related Materials</i> , 2004, 13, 661-665.	1.8	101
12	Emulsion templated scaffolds with tunable mechanical properties for bone tissue engineering. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016, 54, 159-172.	1.5	99
13	Selective laser melting processed Ti6Al4V lattices with graded porosities for dental applications. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2019, 90, 20-29.	1.5	96
14	Two-photon polymerization-generated and micromolding-replicated 3D scaffolds for peripheral neural tissue engineering applications. <i>Biofabrication</i> , 2012, 4, 025005.	3.7	91
15	Studies of the plume accompanying pulsed ultraviolet laser ablation of zinc oxide. <i>Journal of Applied Physics</i> , 2002, 92, 6886-6894.	1.1	89
16	The effect of porosity on cell ingrowth into accurately defined, laser-made, polylactide-based 3D scaffolds. <i>Applied Surface Science</i> , 2015, 336, 2-10.	3.1	88
17	Combined microfabrication and electrospinning to produce 3-D architectures for corneal repair. <i>Acta Biomaterialia</i> , 2013, 9, 5511-5520.	4.1	87
18	Multiple high-level QM/MM reaction paths demonstrate transition-state stabilization in chorismate mutase: correlation of barrier height with transition-state stabilization. <i>Chemical Communications</i> , 2005, , 5068.	2.2	85

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19	Additive manufactured biodegradable poly(glycerol sebacate methacrylate) nerve guidance conduits. <i>Acta Biomaterialia</i> , 2018, 78, 48-63.	4.1	83
20	Macrostructuring of Emulsion-templated Porous Polymers by 3D Laser Patterning. <i>Advanced Materials</i> , 2013, 25, 3178-3181.	11.1	78
21	Comparison of the ablation plumes arising from ArF laser ablation of graphite, silicon, copper, and aluminum in vacuum. <i>Journal of Applied Physics</i> , 2003, 94, 2203-2211.	1.1	76
22	Phosphorus carbides: theory and experiment. <i>Dalton Transactions</i> , 2004, , 3085.	1.6	75
23	Basic Principles of Emulsion Templating and Its Use as an Emerging Manufacturing Method of Tissue Engineering Scaffolds. <i>Frontiers in Bioengineering and Biotechnology</i> , 2020, 8, 875.	2.0	75
24	Porous Titanium for Dental Implant Applications. <i>Metals</i> , 2015, 5, 1902-1920.	1.0	72
25	Analysis of chorismate mutase catalysis by QM/MM modelling of enzyme-catalysed and uncatalysed reactions. <i>Organic and Biomolecular Chemistry</i> , 2011, 9, 1578.	1.5	66
26	Simplifying corneal surface regeneration using a biodegradable synthetic membrane and limbal tissue explants. <i>Biomaterials</i> , 2013, 34, 5088-5106.	5.7	66
27	A Novel Bilayer Polycaprolactone Membrane for Guided Bone Regeneration: Combining Electrospinning and Emulsion Templating. <i>Materials</i> , 2019, 12, 2643.	1.3	64
28	Boosting the Osteogenic and Angiogenic Performance of Multiscale Porous Polycaprolactone Scaffolds by <i>In Vitro</i> Generated Extracellular Matrix Decoration. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 12510-12524.	4.0	63
29	Plume emissions accompanying 248 nm laser ablation of graphite in vacuum: Effects of pulse duration. <i>Journal of Applied Physics</i> , 2002, 91, 6162-6172.	1.1	62
30	Using <i>ex Ovo</i> Chick Chorioallantoic Membrane (CAM) Assay To Evaluate the Biocompatibility and Angiogenic Response to Biomaterials. <i>ACS Biomaterials Science and Engineering</i> , 2019, 5, 3190-3200.	2.6	60
31	Nerve tissue engineering using blends of poly(ϵ -hydroxyalkanoates) for peripheral nerve regeneration. <i>Engineering in Life Sciences</i> , 2015, 15, 612-621.	2.0	59
32	Patterned growth of neuronal cells on modified diamond-like carbon substrates. <i>Biomaterials</i> , 2008, 29, 2573-2580.	5.7	57
33	Photocurable high internal phase emulsions (HIPEs) containing hydroxyapatite for additive manufacture of tissue engineering scaffolds with multi-scale porosity. <i>Materials Science and Engineering C</i> , 2016, 67, 51-58.	3.8	55
34	Towards new binary compounds: Synthesis of amorphous phosphorus carbide by pulsed laser deposition. <i>Journal of Solid State Chemistry</i> , 2013, 198, 466-474.	1.4	53
35	Synthesis, Characterization and 3D Micro-Structuring via 2-Photon Polymerization of Poly(glycerol) Tj ETQq1 1 0.784314 rgBT /Overlo	1.0	50
36	Investigations of the plume accompanying pulsed ultraviolet laser ablation of graphite in vacuum. <i>Journal of Applied Physics</i> , 2001, 89, 697-709.	1.1	49

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37	Carbon nitride: <i>Ab initio</i> investigation of carbon-rich phases. <i>Physical Review B</i> , 2009, 80, .	1.1	48
38	Unidirectional neuronal cell growth and differentiation on aligned polyhydroxyalkanoate blend microfibrils with varying diameters. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2019, 13, 1581-1594.	1.3	46
39	Emulsion templated scaffolds manufactured from photocurable polycaprolactone. <i>Polymer</i> , 2019, 175, 243-254.	1.8	46
40	Decellularised baby spinach leaves and their potential use in tissue engineering applications: Studying and promoting neovascularisation. <i>Journal of Biomaterials Applications</i> , 2019, 34, 546-559.	1.2	43
41	Design and Evaluation of an Osteogenesis-on-a-Chip Microfluidic Device Incorporating 3D Cell Culture. <i>Frontiers in Bioengineering and Biotechnology</i> , 2020, 8, 557111.	2.0	41
42	Development of a microfabricated artificial limbus with micropockets for cell delivery to the cornea. <i>Biofabrication</i> , 2013, 5, 025008.	3.7	40
43	Immobilization of large size-selected silver clusters on graphite. <i>Nanotechnology</i> , 2006, 17, 805-807.	1.3	37
44	Solid phases of phosphorus carbide: An <i>ab initio</i> study. <i>Physical Review B</i> , 2009, 79, .	1.1	37
45	Differential patterning of neuronal, glial and neural progenitor cells on phosphorus-doped and UV irradiated diamond-like carbon. <i>Biomaterials</i> , 2010, 31, 207-215.	5.7	37
46	Porous microspheres support mesenchymal progenitor cell ingrowth and stimulate angiogenesis. <i>APL Bioengineering</i> , 2018, 2, 026103.	3.3	34
47	Light-based additive manufacturing of PolyHIPEs: Controlling the surface porosity for 3D cell culture applications. <i>Materials and Design</i> , 2018, 156, 494-503.	3.3	33
48	Bioengineering Vascular Networks to Study Angiogenesis and Vascularization of Physiologically Relevant Tissue Models <i>in Vitro</i> . <i>ACS Biomaterials Science and Engineering</i> , 2020, 6, 3513-3528.	2.6	31
49	A methodology for the production of microfabricated electrospun membranes for the creation of new skin regeneration models. <i>Journal of Tissue Engineering</i> , 2018, 9, 204173141879985.	2.3	29
50	Carbon dot-protoporphyrin IX conjugates for improved drug delivery and bioimaging. <i>PLoS ONE</i> , 2019, 14, e0220210.	1.1	28
51	Exploration of 2-deoxy-D-ribose and 17 β -Estradiol as alternatives to exogenous VEGF to promote angiogenesis in tissue-engineered constructs. <i>Regenerative Medicine</i> , 2019, 14, 179-197.	0.8	28
52	Assessment of the Angiogenic Potential of 2-Deoxy-D-Ribose Using a Novel in vitro 3D Dynamic Model in Comparison With Established in vitro Assays. <i>Frontiers in Bioengineering and Biotechnology</i> , 2019, 7, 451.	2.0	28
53	A Tuneable, Photocurable, Poly(Caprolactone)-Based Resin for Tissue Engineering – Synthesis, Characterisation and Use in Stereolithography. <i>Molecules</i> , 2021, 26, 1199.	1.7	28
54	The Importance of Mimicking Dermal-Epidermal Junction for Skin Tissue Engineering: A Review. <i>Bioengineering</i> , 2021, 8, 148.	1.6	27

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55	Fabrication of biodegradable synthetic perfusable vascular networks via a combination of electrospinning and robocasting. <i>Biomaterials Science</i> , 2015, 3, 592-596.	2.6	26
56	Thiolene- and Polycaprolactone Methacrylate-Based Polymerized High Internal Phase Emulsion (PolyHIPE) Scaffolds for Tissue Engineering. <i>Biomacromolecules</i> , 2022, 23, 720-730.	2.6	25
57	193-nm laser ablation of CVD diamond and graphite in vacuum: plume analysis and film properties. <i>Applied Physics A: Materials Science and Processing</i> , 1999, 69, S935-S939.	1.1	23
58	ZnO nanorod micropatterning via laser-induced forward transfer. <i>Applied Physics A: Materials Science and Processing</i> , 2007, 87, 17-22.	1.1	23
59	Decellularised extracellular matrix decorated PCL PolyHIPE scaffolds for enhanced cellular activity, integration and angiogenesis. <i>Biomaterials Science</i> , 2021, 9, 7297-7310.	2.6	22
60	Phosphorus carbide thin films: experiment and theory. <i>Applied Physics A: Materials Science and Processing</i> , 2004, 79, 1237-1241.	1.1	21
61	Rocking Media Over Ex Vivo Corneas Improves This Model and Allows the Study of the Effect of Proinflammatory Cytokines on Wound Healing. <i>Investigative Ophthalmology and Visual Science</i> , 2015, 56, 1553-1561.	3.3	21
62	Quantum chemical analysis of reaction paths in chorismate mutase: Conformational effects and electrostatic stabilization. <i>International Journal of Quantum Chemistry</i> , 2007, 107, 2274-2285.	1.0	20
63	Mapping Nanostructural Variations in Silk by Secondary Electron Hyperspectral Imaging. <i>Advanced Materials</i> , 2017, 29, 1703510.	11.1	20
64	Pre-Seeding of Simple Electrospun Scaffolds with a Combination of Endothelial Cells and Fibroblasts Strongly Promotes Angiogenesis. <i>Tissue Engineering and Regenerative Medicine</i> , 2020, 17, 445-458.	1.6	20
65	Combined Porogen Leaching and Emulsion Templating to produce Bone Tissue Engineering Scaffolds. <i>International Journal of Bioprinting</i> , 2020, 6, 265.	1.7	20
66	Laser patterning of Zn for ZnO nanostructure growth: Comparison between laser induced forward transfer in air and in vacuum. <i>Thin Solid Films</i> , 2007, 515, 8529-8533.	0.8	19
67	2-deoxy-d-ribose (2dDR) upregulates vascular endothelial growth factor (VEGF) and stimulates angiogenesis. <i>Microvascular Research</i> , 2020, 131, 104035.	1.1	19
68	Characterisation and evaluation of the impact of microfabricated pockets on the performance of limbal epithelial stem cells in biodegradable PLGA membranes for corneal regeneration. <i>Biomaterials Science</i> , 2014, 2, 723-734.	2.6	18
69	Towards the fabrication of artificial 3D microdevices for neural cell networks. <i>Biomedical Microdevices</i> , 2015, 17, 27.	1.4	18
70	UV-Casting on Methacrylated PCL for the Production of a Peripheral Nerve Implant Containing an Array of Porous Aligned Microchannels. <i>Polymers</i> , 2020, 12, 971.	2.0	18
71	Pre-clinical evaluation of advanced nerve guide conduits using a novel 3D in vitro testing model. <i>International Journal of Bioprinting</i> , 2018, 4, 123.	1.7	18
72	Solid phosphorus carbide?. <i>Chemical Communications</i> , 2002, , 2494-2495.	2.2	16

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73	Binary phosphorus-carbon compounds: The series P ₄ C ₃ +8n. International Journal of Quantum Chemistry, 2003, 95, 546-553.	1.0	16
74	Combination of Microstereolithography and Electrospinning to Produce Membranes Equipped with Niches for Corneal Regeneration. Journal of Visualized Experiments, 2014, , 51826.	0.2	16
75	Understanding Surface Modifications Induced via Argon Plasma Treatment through Secondary Electron Hyperspectral Imaging. Advanced Science, 2021, 8, 2003762.	5.6	16
76	Osteosarcoma growth on trabecular bone mimicking structures manufactured via laser direct write. International Journal of Bioprinting, 2016, 2, .	1.7	16
77	Biomimetic surface delivery of NGF and BDNF to enhance neurite outgrowth. Biotechnology and Bioengineering, 2020, 117, 3124-3135.	1.7	15
78	Modulation of neuronal cell affinity of composite scaffolds based on polyhydroxyalkanoates and bioactive glasses. Biomedical Materials (Bristol), 2020, 15, 045024.	1.7	15
79	Fabrication of Topographically Controlled Electrospun Scaffolds to Mimic the Stem Cell Microenvironment in the Dermal-Epidermal Junction. ACS Biomaterials Science and Engineering, 2021, 7, 2803-2813.	2.6	14
80	Design of three-dimensional solid-state boron oxide networks: <i>ab initio</i> calculations using density functional theory. Physical Review B, 2010, 82, .	1.1	13
81	Comparison of the Anabolic Effects of Reported Osteogenic Compounds on Human Mesenchymal Progenitor-Derived Osteoblasts. Bioengineering, 2020, 7, 12.	1.6	13
82	Predicting crystal structures <i>ab initio</i> : group 14 nitrides and phosphides. Physical Chemistry Chemical Physics, 2010, 12, 8620.	1.3	12
83	Amine functional hydrogels as selective substrates for corneal epithelialization. Acta Biomaterialia, 2014, 10, 3029-3037.	4.1	12
84	Angle selective backscattered electron contrast in the low-voltage scanning electron microscope: Simulation and experiment for polymers. Ultramicroscopy, 2016, 171, 126-138.	0.8	12
85	Hybrid manufacturing strategies for tissue engineering scaffolds using methacrylate functionalised poly(glycerol sebacate). Journal of Biomaterials Applications, 2020, 34, 1114-1130.	1.2	12
86	Ternary silicon germanium nitrides: A class of tunable band gap materials. Physical Review B, 2011, 84, .	1.1	11
87	Considerations Using Additive Manufacture of Emulsion Inks to Produce Respiratory Protective Filters Against Viral Respiratory Tract Infections Such as the COVID-19 Virus. International Journal of Bioprinting, 2020, 7, 316.	1.7	11
88	The Use of Microfabrication Techniques for the Design and Manufacture of Artificial Stem Cell Microenvironments for Tissue Regeneration. Bioengineering, 2021, 8, 50.	1.6	11
89	Bioresorbable and Mechanically Optimized Nerve Guidance Conduit Based on a Naturally Derived Medium Chain Length Polyhydroxyalkanoate and Poly(ϵ -Caprolactone) Blend. ACS Biomaterials Science and Engineering, 2021, 7, 672-689.	2.6	11
90	Characterizing Cross-Linking Within Polymeric Biomaterials in the SEM by Secondary Electron Hyperspectral Imaging. Macromolecular Rapid Communications, 2020, 41, e1900484.	2.0	10

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91	Identifying and mapping chemical bonding within phenolic resin using secondary electron hyperspectral imaging. <i>Polymer Chemistry</i> , 2021, 12, 177-182.	1.9	10
92	Delivery of Bioactive Compounds to Improve Skin Cell Responses on Microfabricated Electrospun Microenvironments. <i>Bioengineering</i> , 2021, 8, 105.	1.6	10
93	<i>In Vitro</i> Low-Fluence Photodynamic Therapy Parameter Screening Using 3D Tumor Spheroids Shows that Fractionated Light Treatments Enhance Phototoxicity. <i>ACS Biomaterials Science and Engineering</i> , 2021, 7, 5078-5089.	2.6	10
94	Data for the analysis of PolyHIPE scaffolds with tunable mechanical properties for bone tissue engineering. <i>Data in Brief</i> , 2015, 5, 616-620.	0.5	9
95	Ab initio predictions of ferroelectric ternary fluorides with the LiNbO ₃ structure. <i>Chemical Communications</i> , 2003, , 2440-2441.	2.2	8
96	Arginine-glycine-aspartic acid functional branched semi-interpenetrating hydrogels. <i>Soft Matter</i> , 2015, 11, 7567-7578.	1.2	8
97	Photochemically modified diamond-like carbon surfaces for neural interfaces. <i>Materials Science and Engineering C</i> , 2016, 58, 1199-1206.	3.8	8
98	Dynamic Photo-cross-linking of Native Silk Enables Macroscale Patterning at a Microscale Resolution. <i>ACS Biomaterials Science and Engineering</i> , 2020, 6, 705-714.	2.6	8
99	Ultra-Flexible Boron-Oxygen 3D Solid-State Networks. <i>Advanced Functional Materials</i> , 2013, 23, 5887-5892.	7.8	7
100	Fabrication of Biodegradable Synthetic Vascular Networks and Their Use as a Model of Angiogenesis. <i>Cells Tissues Organs</i> , 2016, 202, 319-328.	1.3	7
101	Topography design in model membranes: Where biology meets physics. <i>Experimental Biology and Medicine</i> , 2019, 244, 294-303.	1.1	7
102	3D Structuring of Biocompatible and Biodegradable Polymers Via Stereolithography. <i>Methods in Molecular Biology</i> , 2011, 695, 309-321.	0.4	7
103	Bioactive 3D Scaffolds for the Delivery of NGF and BDNF to Improve Nerve Regeneration. <i>Frontiers in Materials</i> , 2021, 8, .	1.2	7
104	Morphological Response in Cancer Spheroids for Screening Photodynamic Therapy Parameters. <i>Frontiers in Molecular Biosciences</i> , 2021, 8, 784962.	1.6	7
105	Thin films of wurtzite materials AlN vs. AlP. <i>Journal of Crystal Growth</i> , 2006, 294, 111-117.	0.7	6
106	Applications of crystal structure prediction in inorganic and network structures: general discussion. <i>Faraday Discussions</i> , 2018, 211, 613-642.	1.6	6
107	Graphene and novel graphitic ZnO and ZnS nanofilms: the energy landscape, non-stoichiometry and water dissociation. <i>Nanoscale Advances</i> , 2019, 1, 1924-1935.	2.2	6
108	Low methacrylated poly(glycerol sebacate) for soft tissue engineering. <i>Polymer Chemistry</i> , 2022, 13, 3513-3528.	1.9	6

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109	Adventures in boron chemistry – the prediction of novel ultra-flexible boron oxide frameworks. Faraday Discussions, 2018, 211, 569-591.	1.6	5
110	Direct laser writing of polylactide 3D scaffolds for neural tissue engineering applications. , 2011, , .		4
111	Tuning Electrospun Substrate Stiffness for the Fabrication of a Biomimetic Amniotic Membrane Substitute for Corneal Healing. ACS Applied Bio Materials, 2021, 4, 5638-5649.	2.3	2
112	Spatial Control of Neuronal Adhesion on Diamond-Like Carbon. Frontiers in Materials, 2021, 8, .	1.2	1
113	Ab initio Predictions of Ferroelectric Ternary Fluorides with the LiNbO3 Structure.. ChemInform, 2003, 34, no.	0.1	0
114	Pulser Laser Ablation and Deposition of Thin Films.. ChemInform, 2004, 35, no.	0.1	0
115	A Theoretical Study of Ultra-Thin Films with the Wurtzite and Zinc Blende Structures. Materials Research Society Symposia Proceedings, 2007, 1035, 1.	0.1	0
116	Three-dimensional Polycaprolactone Structures Fabricated by Two-Photon Polymerization. , 2010, , .		0
117	Direct laser writing of polylactide 3D scaffolds. , 2011, , .		0
118	Micro-Stereolithography: Macrostructuring of Emulsion-templated Porous Polymers by 3D Laser Patterning (Adv. Mater. 23/2013). Advanced Materials, 2013, 25, 3177-3177.	11.1	0
119	An “off-the shelf” synthetic membrane to simplify regeneration of damaged corneas. , 2014, , .		0
120	Development of a 3D in vitro Model of the Kidney Cortical Collecting Duct. FASEB Journal, 2019, 33, 575.7.	0.2	0