Aleksandr Ovsianikov

List of Publications by Year
in descending order

118 papers	8,276 citations	36271 51 h-index	48277 88 g-index
135 all docs	135 docs citations	135 times ranked	7555 citing authors

#	Article	IF	Citations
1	Bioink properties before, during and after 3D bioprinting. Biofabrication, 2016, 8, 032002.	3.7	783
2	Ultra-Low Shrinkage Hybrid Photosensitive Material for Two-Photon Polymerization Microfabrication. ACS Nano, 2008, 2, 2257-2262.	7.3	443
3	Fabrication of woodpile structures by two-photon polymerization and investigation of their optical properties. Optics Express, 2004, 12, 5221.	1.7	309
4	Laser Fabrication of Three-Dimensional CAD Scaffolds from Photosensitive Gelatin for Applications in Tissue Engineering. Biomacromolecules, 2011, 12, 851-858.	2.6	273
5	Laser printing of cells into 3D scaffolds. Biofabrication, 2010, 2, 014104.	3.7	231
6	The Synergy of Scaffold-Based and Scaffold-Free Tissue Engineering Strategies. Trends in Biotechnology, 2018, 36, 348-357.	4.9	231
7	Three-dimensional laser micro- and nano-structuring of acrylated poly(ethylene glycol) materials and evaluation of their cytoxicity for tissue engineering applications. Acta Biomaterialia, 2011, 7, 967-974.	4.1	212
8	Two photon induced polymerization of organicâ€“inorganic hybrid biomaterials for microstructured medical devices. Acta Biomaterialia, 2006, 2, 267-275.	4.1	207
9	Two Photon Polymerization of Polymer?Ceramic Hybrid Materials for Transdermal Drug Delivery. International Journal of Applied Ceramic Technology, 2007, 4, 22-29.	1.1	200
10	Hydrogels for Twoâ€Photon Polymerization: A Toolbox for Mimicking the Extracellular Matrix. Advanced Functional Materials, 2013, 23, 4542-4554.	7.8	191
11	Three-Dimensional Biodegradable Structures Fabricated by Two-Photon Polymerization. Langmuir, 2009, 25, 3219-3223.	1.6	177
12	Two-photon polymerization technique for microfabrication of CAD-designed 3D scaffolds from commercially available photosensitive materials. Journal of Tissue Engineering and Regenerative Medicine, 2007, 1, 443-449.	1.3	172
13	Laser Photofabrication of Cell-Containing Hydrogel Constructs. Langmuir, 2014, 30, 3787-3794.	1.6	159
14	Engineering 3D cell-culture matrices: multiphoton processing technologies for biological and tissue engineering applications. Expert Review of Medical Devices, 2012, 9, 613-633.	1.4	140
15	Functional 3D Printing for Microfluidic Chips. Advanced Materials Technologies, 2019, 4, 1900275.	3.0	136
16	Laser Fabrication of 3D Gelatin Scaffolds for the Generation of Bioartificial Tissues. Materials, 2011, 4, 288-299.	1.3	130
17	Directed Three-Dimensional Patterning of Self-Assembled Peptide Fibrils. Nano Letters, 2008, 8, 538-543.	4.5	125
18	Two-photon polymerization of microneedles for transdermal drug delivery. Expert Opinion on Drug Delivery, 2010, 7, 513-533.	2.4	122

#	Article	IF	Citations
19	Shrinkage of microstructures produced by two-photon polymerization of Zr-based hybrid photosensitive materials. Optics Express, 2009, 17, 2143.	1.7	121
20	(Photo-)crosslinkable gelatin derivatives for biofabrication applications. Acta Biomaterialia, 2019, 97, 46-73.	4.1	120
21	Dynamic Coordination Chemistry Enables Free Directional Printing of Biopolymer Hydrogel. Chemistry of Materials, 2017, 29, 5816-5823.	3.2	119
22	The effects of geometry on skin penetration and failure of polymer microneedles. Journal of Adhesion Science and Technology, 2013, 27, 227-243.	1.4	118
23	Photo-sensitive hydrogels for three-dimensional laser microfabrication in the presence of whole organisms. Journal of Biomedical Optics, 2012, 17, 1.	1.4	117
24	Initiation efficiency and cytotoxicity of novel water-soluble two-photon photoinitiators for direct 3D microfabrication of hydrogels. RSC Advances, 2013, 3, 15939.	1.7	117
25	Three-dimensional photofabrication with femtosecond lasers for applications in photonics and biomedicine. Applied Surface Science, 2007, 253, 6599-6602.	3.1	114
26	Highly efficient water-soluble visible light photoinitiators. Journal of Polymer Science Part A, 2016, 54, 473-479.	2.5	107
27	Cross-Linkable Gelatins with Superior Mechanical Properties Through Carboxylic Acid Modification: Increasing the Two-Photon Polymerization Potential. Biomacromolecules, 2017, 18, 3260-3272.	2.6	104
28	Three-Dimensional Cell Growth on Structures Fabricated from ORMOCERÂ® by Two-Photon Polymerization Technique. Journal of Biomaterials Applications, 2007, 22, 275-287.	1.2	102
29	Fabrication of Polymer Microneedles Using a Two-Photon Polymerization and Micromolding Process. Journal of Diabetes Science and Technology, 2009, 3, 304-311.	1.3	100
30	Two-photon polymerization technique with sub-50 nm resolution by sub-10 fs laser pulses. Optical Materials Express, 2012, 2, 942.	1.6	98
31	Development of functional sub-100 nm structures with 3D two-photon polymerization technique and optical methods for characterization. Journal of Laser Applications, 2012, 24, .	0.8	83
32	Highly Reactive Thiolâ€Norbornene Photoâ€Click Hydrogels: Toward Improved Processability. Macromolecular Rapid Communications, 2018, 39, e1800181.	2.0	77
33	Additive manufacturing of photosensitive hydrogels for tissue engineering applications. BioNanoMaterials, 2014, 15, .	1.4	76
34	Thiolâ€“Gelatinâ€“Norbornene Bioink for Laserâ€Based Highâ€Definition Bioprinting. Advanced Healthcare Materials, 2020, 9, e1900752.	3.9	75
35	Two-photon polymerization of titanium-containing solâ€“gel composites for three-dimensional structure fabrication. Applied Physics A: Materials Science and Processing, 2010, 100, 359-364.	1.1	74
36	Three-dimensional microfabrication of protein hydrogels via two-photon-excited thiol-vinyl ester photopolymerization. Journal of Polymer Science Part A, 2013, 51, 4799-4810.	2.5	74

#	Article	IF	Citations
37	Impact of Hydrogel Stiffness on Differentiation of Human Adipose-Derived Stem Cell Microspheroids. Tissue Engineering - Part A, 2019, 25, 1369-1380.	1.6	71
38	Pulsed laser deposition of antimicrobial silver coating on OrmocerÂ® microneedles. Biofabrication, 2009, 1, 041001.	3.7	70
39	Multiphoton microscopy of transdermal quantum dot delivery using two photonpolymerization-fabricated polymer microneedles. Faraday Discussions, 2011, 149, 171-185.	1.6	70
40	Fabrication of biomimetic placental barrier structures within a microfluidic device utilizing two-photon polymerization. International Journal of Bioprinting, 2018, 4, 144.	1.7	69
41	Enzymatic synthesis of hyaluronic acid vinyl esters for two-photon microfabrication of biocompatible and biodegradable hydrogel constructs. Polymer Chemistry, 2014, 5, 6523-6533.	1.9	68
42	A Modular Approach to Sensitized Twoâ€Photon Patterning of Photodegradable Hydrogels. Angewandte Chemie - International Edition, 2018, 57, 15122-15127.	7.2	68
43	Laser Processing of Advanced Bioceramics. Advanced Engineering Materials, 2005, 7, 1083-1098.	1.6	67
44	Rapid prototyping of ossicular replacement prostheses. Applied Surface Science, 2007, 253, 6603-6607.	3.1	65
45	Laser 3D Printing with Subâ€Microscale Resolution of Porous Elastomeric Scaffolds for Supporting Human Bone Stem Cells. Advanced Healthcare Materials, 2015, 4, 739-747.	3.9	65
46	Metalloâ€Supramolecular Gels that are Photocleavable with Visible and Nearâ€Infrared Irradiation. Angewandte Chemie - International Edition, 2017, 56, 15857-15860.	7.2	62
47	Two Photon Polymerizationâ€Micromolding of Polyethylene Glycolâ€Gentamicin Sulfate Microneedles. Advanced Engineering Materials, 2010, 12, B77-B82.	1.6	60
48	Hybrid Tissue Engineering Scaffolds by Combination of Three-Dimensional Printing and Cell Photoencapsulation. Journal of Nanotechnology in Engineering and Medicine, 2015, 6, 0210011-210017.	0.8	59
49	A biocompatible diazosulfonate initiator for direct encapsulation of human stem cells <i>via</i> two-photon polymerization. Polymer Chemistry, 2018, 9, 3108-3117.	1.9	55
50	3D Printing of large-scale and highly porous biodegradable tissue engineering scaffolds from poly(trimethylene-carbonate) using two-photon-polymerization. Biofabrication, 2020, 12, 045036.	3.7	55
51	Fabrication of Microneedles Using Two Photon Polymerization for Transdermal Delivery of Nanomaterials. Journal of Nanoscience and Nanotechnology, 2010, 10, 6305-6312.	0.9	52
52	Plasmon assisted 3D microstructuring of gold nanoparticle-doped polymers. Nanotechnology, 2016, 27, 154001.	1.3	52
53	Fabrication of three-dimensional photonic crystal structures containing an active nonlinear optical chromophore. Applied Physics A: Materials Science and Processing, 2008, 93, 11-15.	1.1	51
54	High-Resolution 3D Bioprinting of Photo-Cross-linkable Recombinant Collagen to Serve Tissue Engineering Applications. Biomacromolecules, 2020, 21, 3997-4007.	2.6	51

#	Article	IF	Citations
55	Laser-induced transfer of metallic nanodroplets for plasmonics and metamaterial applications. Journal of the Optical Society of America B: Optical Physics, 2009, 26, B130.	0.9	49
56	A biocompatible macromolecular two-photon initiator based on hyaluronan. Polymer Chemistry, 2017, 8, 451-460.	1.9	49
57	Evaluation of 3D structures fabricated with two-photon-photopolymerization by using FTIR spectroscopy. Journal of Applied Physics, 2011, 110, .	1.1	47
58	Rapid prototyping of scaphoid and lunate bones. Biotechnology Journal, 2009, 4, 129-134.	1.8	42
59	Optically trapped probes with nanometer-scale tips for femto-Newton force measurement. New Journal of Physics, 2010, 12, 113056.	1.2	36
60	Modular material system for the microfabrication of biocompatible hydrogels based on thiol-ene-modified poly(vinyl alcohol). Journal of Polymer Science Part A, 2016, 54, 2060-2070.	2.5	36
61	On-chip high-definition bioprinting of microvascular structures. Biofabrication, 2021, 13, 015016.	3.7	36
62	Delivery of Human Adipose Stem Cells Spheroids into Lockyballs. PLoS ONE, 2016, 11, e0166073.	1.1	36
63	Selective Functionalization of 3D Matrices Via Multiphoton Grafting and Subsequent Click Chemistry. Advanced Functional Materials, 2012, 22, 3429-3433.	7.8	34
64	Thiol-norbornene gelatin hydrogels: influence of thiolated crosslinker on network properties and high definition 3D printing. Biofabrication, 2021, 13, 015017.	3.7	34
65	Investigations on the generation of photonic crystals using twoâ€photon polymerization (2PP) of inorganicâ€"organic hybrid polymers with ultraâ€short laser pulses. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 3662-3675.	0.8	32
66	Design, physical prototyping and initial characterisation of â€˜lockyballsâ€™. Virtual and Physical Prototyping, 2012, 7, 287-301.	5.3	32
67	Wavelength-optimized Two-Photon Polymerization Using Initiators Based on Multipolar Aminostyryl-1,3,5-triazines. Scientific Reports, 2018, 8, 17273.	1.6	32
68	Urokinase Receptor Associates With Myocardin to Control Vascular Smooth Muscle Cells Phenotype in Vascular Disease. Arteriosclerosis, Thrombosis, and Vascular Biology, 2012, 32, 110-122.	1.1	31
69	Connections Matter: Channeled Hydrogels to Improve Vascularization. Frontiers in Bioengineering and Biotechnology, 2014, 2, 52.	2.0	31
70	Photo-crosslinkable recombinant collagen mimics for tissue engineering applications. Journal of Materials Chemistry B, 2019, 7, 3100-3108.	2.9	31
71	Polymer architecture as key to unprecedented high-resolution 3D-printing performance: The case of biodegradable hexa-functional telechelic urethane-based poly-Îµ-caprolactone. Materials Today, 2021, 44, 25-39.	8.3	28
72	Microreplication of laser-fabricated surface and three-dimensional structures. Journal of Optics (United Kingdom), 2010, 12, 124009.	1.0	27

#	Article	IF	Citations
73	Î±-Ketoesters as Nonaromatic Photoinitiators for Radical Polymerization of (Meth)acrylates. Macromolecules, 2019, 52, 2814-2821.	2.2	24
74	Three Dimensional Material Processing with Femtosecond Lasers. , 2007, , 121-157.		23
75	Screening of two-photon activated photodynamic therapy sensitizers using a 3D osteosarcoma model. Analyst, The, 2019, 144, 3056-3063.	1.7	22
76	Gelatin methacryloyl as environment for chondrocytes and cell delivery to superficial cartilage defects. Journal of Tissue Engineering and Regenerative Medicine, 2022, 16, 207-222.	1.3	22
77	Three-Dimensional Nanostructuring With Femtosecond Laser Pulses. IEEE Nanotechnology Magazine, 2004, 3, 468-472.	1.1	20
78	Hyaluronic acid vinyl esters: A toolbox toward controlling mechanical properties of hydrogels for 3D microfabrication. Journal of Polymer Science, 2020, 58, 1288-1298.	2.0	20
79	Three-Dimensional Microfabrication by Two-Photon Polymerization Technique. Methods in Molecular Biology, 2012, 868, 311-325.	0.4	19
80	3D alkyneâ€“azide cycloaddition: spatiotemporally controlled by combination of aryl azide photochemistry and two-photon grafting. Chemical Communications, 2013, 49, 7635.	2.2	18
81	Influence of hybrid organicâ€“inorganic solâ€“gel matrices on the photophysics of amino-functionalized UV-sensitizers. Journal of Materials Science, 2011, 46, 400-408.	1.7	17
82	Flexible oligomer spacers as the key to solid-state photopolymerization of hydrogel precursors. Materials Today Chemistry, 2017, 4, 84-89.	1.7	17
83	Photopolymerization-based additive manufacturing for the development of 3D porous scaffolds. , 2014, , 149-201.		16
84	Towards efficient initiators for two-photon induced polymerization: fine tuning of the donor/acceptor properties. Molecular Systems Design and Engineering, 2019, 4, 437-448.	1.7	16
85	A Modular Approach to Sensitized Twoâ€Photon Patterning of Photodegradable Hydrogels. Angewandte Chemie, 2018, 130, 15342-15347.	1.6	15
86	Laser-based nanoengineering of surface topographies for biomedical applications. Photonics and Nanostructures - Fundamentals and Applications, 2011, 9, 159-162.	1.0	14
87	Measurement of degenerate two-photon absorption spectra of a series of developed two-photon initiators using a dispersive white light continuum Z-scan. Applied Physics Letters, 2017, 111, .	1.5	14
88	Beyond the Threshold: A Study of Chalcogenophene-Based Two-Photon Initiators. Chemistry of Materials, 2022, 34, 3042-3052.	3.2	14
89	3D photografting with aromatic azides: A comparison between three-photon and two-photon case. Optical Materials, 2013, 35, 1846-1851.	1.7	13
90	Calibration of colloidal probes with atomic force microscopy for micromechanical assessment. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 85, 225-236.	1.5	13

#	Article	IF	Citations
91	Hybrid spheroid microscaffolds as modular tissue units to build macro-tissue assemblies for tissue engineering. Acta Biomaterialia, 2023, 165, 72-85.	4.1	13
92	Durch sichtbares Licht und Nahinfrarotstrahlung abbaubare supramolekulare Metalloâ€Gele. Angewandte Chemie, 2017, 129, 16071-16075.	1.6	12
93	Enhancing cell packing in buckyballs by acoustofluidic activation. Biofabrication, 2020, 12, 025033.	3.7	12
94	Fully automated z-scan setup based on a tunable fs-oscillator. Optical Materials Express, 2019, 9, 3567.	1.6	12
95	Evidence of concentration dependence of the two-photon absorption cross section: Determining the â€œtrueâ€•cross section value. Optical Materials, 2015, 47, 524-529.	1.7	11
96	3D grafting via three-photon induced photolysis of aromatic azides. Applied Physics A: Materials Science and Processing, 2012, 108, 29-34.	1.1	10
97	Two-Photon Polymerization â€“ High Resolution 3D Laser Technology and Its Applications. Nanostructure Science and Technology, 2008, , 427-446.	0.1	8
98	Synthesis of Fast Curing, Waterâ€Resistant and Photopolymerizable Glass for Recording of Holographic Structures by Oneâ€•and Twoâ€Photon Lithography. Advanced Optical Materials, 2022, 10, 2102089.	3.6	8
99	Guiding cell migration in 3D with high-resolution photografting. Scientific Reports, 2022, 12, .	1.6	8
100	Two-photon polymerization for fabrication of biomedical devices. , 2007, , .		6
101	Increasing the Microfabrication Performance of Synthetic Hydrogel Precursors through Molecular Design. Biomacromolecules, 2021, 22, 4919-4932.	2.6	6
102	3D Photografting: Selective Functionalization of 3D Matrices Via Multiphoton Grafting and Subsequent Click Chemistry (Adv. Funct. Mater. 16/2012). Advanced Functional Materials, 2012, 22, 3527-3527.	7.8	5
103	Commercial 3D Bioprinters. , 2018, , 535-549.		5
104	Dispersive white light continuum single Z-scan for rapid determination of degenerate two-photon absorption spectra. Applied Physics B: Lasers and Optics, 2018, 124, 142.	1.1	5
105	Investigation of optical properties of circular spiral photonic crystals. Optics Express, 2007, 15, 13236.	1.7	4
106	Rapid Prototyping of Biomimetic Structures: Fabrication of Mosquito-like Microneedles by Two-Photon Polymerization. Materials Research Society Symposia Proceedings, 2009, 1239, 1.	0.1	4
107	A disulfide-based linker for thiolâ€“norbornene conjugation: formation and cleavage of hydrogels by the use of light. Polymer Chemistry, 2022, 13, 1158-1168.	1.9	4
108	Novel synthesis routes for the preparation of low toxic vinyl ester and vinyl carbonate monomers. Synthetic Communications, 2020, 50, 3629-3641.	1.1	3

#	Article	IF	Citations
109	Instrument for tensile testing of individual collagen fibrils with facile sample coupling and uncoupling. Review of Scientific Instruments, 2022, 93, 054103.	0.6	3
110	Commercial 3D Bioprinters. , 2018, , 1-16.		2
111	3D photofabrication by femtosecond laser pulses and its applications in photonics and biomedicine. , 2007, , .		1
112	Direct laser writing of photonic nanostructures. , 2009, , .		1
113	Study of Polymeric Microneedle Arrays for Drug Delivery. Materials Research Society Symposia Proceedings, 2006, 950, 1.	0.1	0
114	3D photofabrication by femtosecond laser pulses and its applications in photonics and biomedicine. , 2007, , .		0
115	Three-dimensional direct writing of novel sol-gel composites for photonics applications. International Journal of Nanomanufacturing, 2010, 6, 164.	0.3	0
116	Photonic and Biomedical Applications of the Two-Photon Polymerization Technique. , 2011, , 257-297.		0
117	Controlled self-formation of nanofibers and nanomembranes in polymers induced by laser direct writing. , 2011, , .		0
118	Abstract 6245: 3D-models of pediatric bone sarcomas for personalized therapeutic screening. Cancer Research, 2022, 82, 6245-6245.	0.4	0