David L Kaplan

List of Publications by Citations

1,119 papers	86,356 citations	145 h-index	246 g-index
1,165 ext. papers	97,025 ext. citations	9 avg, IF	8.44 L-index

#	Paper	IF	Citations
1119	Silk-based biomaterials. *Biomaterials*, **2003**, 24, 401-16	15.6	2621
1118	Silk as a Biomaterial. *Progress in Polymer Science*, **2007**, 32, 991-1007	29.6	1842
1117	Materials fabrication from Bombyx mori silk fibroin. *Nature Protocols*, **2011**, 6, 1612-31	18.8	1752
1116	Dissolvable films of silk fibroin for ultrathin conformal bio-integrated electronics. *Nature Materials*, **2010**, 9, 511-7	27	1239
1115	Mechanism of silk processing in insects and spiders. *Nature*, **2003**, 424, 1057-61	50.4	1064
1114	New opportunities for an ancient material. *Science*, **2010**, 329, 528-31	33.3	1016
1113	Electrospun silk-BMP-2 scaffolds for bone tissue engineering. *Biomaterials*, **2006**, 27, 3115-24	15.6	980
1112	A physically transient form of silicon electronics. *Science*, **2012**, 337, 1640-4	33.3	862
1111	Three-dimensional aqueous-derived biomaterial scaffolds from silk fibroin. *Biomaterials*, **2005**, 26, 2775-85	15.6	793
1110	Stem cell-based tissue engineering with silk biomaterials. *Biomaterials*, **2006**, 27, 6064-82	15.6	785
1109	Porous 3-D scaffolds from regenerated silk fibroin. *Biomacromolecules*, **2004**, 5, 718-26	6.9	730
1108	Silk matrix for tissue engineered anterior cruciate ligaments. *Biomaterials*, **2002**, 23, 4131-41	15.6	726
1107	Functionalized silk-based biomaterials for bone formation. *Journal of Biomedical Materials Research Part B*, **2001**, 54, 139-48		662
1106	Graphene-based wireless bacteria detection on tooth enamel. *Nature Communications*, **2012**, 3, 763	17.4	657
1105	Vascularization strategies for tissue engineering. *Tissue Engineering - Part B: Reviews*, **2009**, 15, 353-70	7.9	642
1104	The inflammatory responses to silk films in vitro and in vivo. *Biomaterials*, **2005**, 26, 147-55	15.6	636
1103	Structure and properties of silk hydrogels. *Biomacromolecules*, **2004**, 5, 786-92	6.9	632

1102	Electrospinning Bombyx mori silk with poly(ethylene oxide). *Biomacromolecules*, **2002**, 3, 1233-9	6.9	623
1101	In vitro degradation of silk fibroin. *Biomaterials*, **2005**, 26, 3385-93	15.6	577
1100	In vivo degradation of three-dimensional silk fibroin scaffolds. *Biomaterials*, **2008**, 29, 3415-28	15.6	573
1099	Human bone marrow stromal cell responses on electrospun silk fibroin mats. *Biomaterials*, **2004**, 25, 1039-47	15.6	537
1098	Cell differentiation by mechanical stress. *FASEB Journal*, **2002**, 16, 270-2	0.9	506
1097	Sonication-induced gelation of silk fibroin for cell encapsulation. *Biomaterials*, **2008**, 29, 1054-64	15.6	492
1096	Cationic polymers and their therapeutic potential. *Chemical Society Reviews*, **2012**, 41, 7147-94	58.5	490
1095	Ultra-sensitive vibrational spectroscopy of protein monolayers with plasmonic nanoantenna arrays. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 19227-32	11.5	480
1094	Waterproof AlInGaP optoelectronics on stretchable substrates with applications in biomedicine and robotics. *Nature Materials*, **2010**, 9, 929-37	27	474
1093	Water-insoluble silk films with silk I structure. *Acta Biomaterialia*, **2010**, 6, 1380-7	10.8	450
1092	Macrophage responses to silk. *Biomaterials*, **2003**, 24, 3079-85	15.6	445
1091	Regulation of silk material structure by temperature-controlled water vapor annealing. *Biomacromolecules*, **2011**, 12, 1686-96	6.9	434
1090	Mechanisms of silk fibroin sol-gel transitions. *Journal of Physical Chemistry B*, **2006**, 110, 21630-8	3.4	396
1089	Native-sized recombinant spider silk protein produced in metabolically engineered Escherichia coli results in a strong fiber. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 14059-63	11.5	392
1088	Silk materials--a road to sustainable high technology. *Advanced Materials*, **2012**, 24, 2824-37	24	380
1087	In vitro cartilage tissue engineering with 3D porous aqueous-derived silk scaffolds and mesenchymal stem cells. *Biomaterials*, **2005**, 26, 7082-94	15.6	376
1086	Controlling silk fibroin particle features for drug delivery. *Biomaterials*, **2010**, 31, 4583-91	15.6	356
1085	Cartilage tissue engineering with silk scaffolds and human articular chondrocytes. *Biomaterials*, **2006**, 27, 4434-42	15.6	356

1084	Growth factor gradients via microsphere delivery in biopolymer scaffolds for osteochondral tissue engineering. *Journal of Controlled Release*, **2009**, 134, 81-90	11.7	351
1083	Electrospun silk biomaterial scaffolds for regenerative medicine. *Advanced Drug Delivery Reviews*, **2009**, 61, 988-1006	18.5	335
1082	Silk film biomaterials for cornea tissue engineering. *Biomaterials*, **2009**, 30, 1299-308	15.6	329
1081	Villification: how the gut gets its villi. *Science*, **2013**, 342, 212-8	33.3	323
1080	Silk nanospheres and microspheres from silk/pva blend films for drug delivery. *Biomaterials*, **2010**, 31, 1025-35	15.6	321
1079	Role of membrane potential in the regulation of cell proliferation and differentiation. *Stem Cell Reviews and Reports*, **2009**, 5, 231-46	6.4	315
1078	Biomedical applications of chemically-modified silk fibroin. *Journal of Materials Chemistry*, **2009**, 19, 6443-6450		314
1077	Engineering adipose-like tissue in vitro and in vivo utilizing human bone marrow and adipose-derived mesenchymal stem cells with silk fibroin 3D scaffolds. *Biomaterials*, **2007**, 28, 5280-90	15.6	309
1076	Nanofibrils in nature and materials engineering. *Nature Reviews Materials*, **2018**, 3,	73.3	304
1075	High-strength silk protein scaffolds for bone repair. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 7699-704	11.5	288
1074	Silk-based delivery systems of bioactive molecules. *Advanced Drug Delivery Reviews*, **2010**, 62, 1497-508	18.5	282
1073	Engineering bone-like tissue in vitro using human bone marrow stem cells and silk scaffolds. *Journal of Biomedical Materials Research Part B*, **2004**, 71, 25-34		277
1072	Agarose-based biomaterials for tissue engineering. *Carbohydrate Polymers*, **2018**, 187, 66-84	10.3	276
1071	Tissue engineering of ligaments. *Annual Review of Biomedical Engineering*, **2004**, 6, 131-56	12	276
1070	Human bone marrow stromal cell and ligament fibroblast responses on RGD-modified silk fibers. *Journal of Biomedical Materials Research Part B*, **2003**, 67, 559-70		274
1069	Vortex-induced injectable silk fibroin hydrogels. *Biophysical Journal*, **2009**, 97, 2044-50	2.9	271
1068	Control of in vitro tissue-engineered bone-like structures using human mesenchymal stem cells and porous silk scaffolds. *Biomaterials*, **2007**, 28, 1152-62	15.6	270
1067	In vivo bioresponses to silk proteins. *Biomaterials*, **2015**, 71, 145-157	15.6	269

1066	Biomaterials for the development of peripheral nerve guidance conduits. *Tissue Engineering - Part B: Reviews*, **2012**, 18, 40-50	7.9	268
1065	Silk-based conformal, adhesive, edible food sensors. *Advanced Materials*, **2012**, 24, 1067-72	24	266
1064	Highly tunable elastomeric silk biomaterials. *Advanced Functional Materials*, **2014**, 24, 4615-4624	15.6	265
1063	In vitro evaluation of electrospun silk fibroin scaffolds for vascular cell growth. *Biomaterials*, **2008**, 29, 2217-27	15.6	265
1062	Mechanical Properties of Electrospun Silk Fibers. *Macromolecules*, **2004**, 37, 6856-6864	5.5	263
1061	Biocompatible Silk Printed Optical Waveguides. *Advanced Materials*, **2009**, 21, 2411-2415	24	260
1060	Influence of macroporous protein scaffolds on bone tissue engineering from bone marrow stem cells. *Biomaterials*, **2005**, 26, 4442-52	15.6	260
1059	Silk microspheres for encapsulation and controlled release. *Journal of Controlled Release*, **2007**, 117, 360-70	11.7	251
1058	Natural protective glue protein, sericin bioengineered by silkworms: Potential for biomedical and biotechnological applications. *Progress in Polymer Science*, **2008**, 33, 998-1012	29.6	250
1057	Bioactive silk protein biomaterial systems for optical devices. *Biomacromolecules*, **2008**, 9, 1214-20	6.9	248
1056	Bone tissue engineering with premineralized silk scaffolds. *Bone*, **2008**, 42, 1226-34	4.7	245
1055	Spider silks and their applications. *Trends in Biotechnology*, **2008**, 26, 244-51	15.1	238
1054	Mechanical and thermal properties of dragline silk from the spider Nephila clavipes. *Polymers for Advanced Technologies*, **1994**, 5, 401-410	3.2	234
1053	Construction, cloning, and expression of synthetic genes encoding spider dragline silk. *Biochemistry* , **1995**, 34, 10879-85	3.2	232
1052	Effect of processing on silk-based biomaterials: reproducibility and biocompatibility. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2011**, 99, 89-101	3.5	227
1051	Silk fibroin microtubes for blood vessel engineering. *Biomaterials*, **2007**, 28, 5271-9	15.6	226
1050	Silk fibroin/hydroxyapatite composites for bone tissue engineering. *Biotechnology Advances*, **2018**, 36, 68-91	17.8	224
1049	Silk-based resorbable electronic devices for remotely controlled therapy and in vivo infection abatement. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 17385-9	11.5	223

1048	Role of adult mesenchymal stem cells in bone tissue engineering applications: current status and future prospects. *Tissue Engineering*, **2005**, 11, 787-802		222
1047	Silk-based electrospun tubular scaffolds for tissue-engineered vascular grafts. *Journal of Biomaterials Science, Polymer Edition*, **2008**, 19, 653-64	3.5	220
1046	Mapping domain structures in silks from insects and spiders related to protein assembly. *Journal of Molecular Biology*, **2004**, 335, 27-40	6.5	220
1045	Silk-based biomaterials for sustained drug delivery. *Journal of Controlled Release*, **2014**, 190, 381-97	11.7	219
1044	Direct-Write Assembly of Microperiodic Silk Fibroin Scaffolds for Tissue Engineering Applications. *Advanced Functional Materials*, **2008**, 18, 1883-1889	15.6	219
1043	Functionalized silk biomaterials for wound healing. *Advanced Healthcare Materials*, **2013**, 2, 206-17	10.1	216
1042	Degradation mechanism and control of silk fibroin. *Biomacromolecules*, **2011**, 12, 1080-6	6.9	214
1041	The use of injectable sonication-induced silk hydrogel for VEGF(165) and BMP-2 delivery for elevation of the maxillary sinus floor. *Biomaterials*, **2011**, 32, 9415-24	15.6	213
1040	Nucleation and growth of mineralized bone matrix on silk-hydroxyapatite composite scaffolds. *Biomaterials*, **2011**, 32, 2812-20	15.6	211
1039	Silicon electronics on silk as a path to bioresorbable, implantable devices. *Applied Physics Letters*, **2009**, 95, 133701	3.4	211
1038	Silk fibroin biomaterials for controlled release drug delivery. *Expert Opinion on Drug Delivery*, **2011**, 8, 797-811	8	208
1037	Stem cell- and scaffold-based tissue engineering approaches to osteochondral regenerative medicine. *Seminars in Cell and Developmental Biology*, **2009**, 20, 646-55	7.5	208
1036	Modification of silk fibroin using diazonium coupling chemistry and the effects on hMSC proliferation and differentiation. *Biomaterials*, **2008**, 29, 2829-38	15.6	207
1035	Silkworm silk-based materials and devices generated using bio-nanotechnology. *Chemical Society Reviews*, **2018**, 47, 6486-6504	58.5	206
1034	Protein-based composite materials. *Materials Today*, **2012**, 15, 208-215	21.8	204
1033	Bioengineered functional brain-like cortical tissue. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 13811-6	11.5	203
1032	Biomaterial films of Bombyx mori silk fibroin with poly(ethylene oxide). *Biomacromolecules*, **2004**, 5, 711-7	6.9	202
1031	Natural and Genetically Engineered Proteins for Tissue Engineering. *Progress in Polymer Science*, **2012**, 37, 1-17	29.6	199

1030	Overview of Silk Fibroin Use in Wound Dressings. *Trends in Biotechnology*, **2018**, 36, 907-922	15.1	198
1029	All-water-based electron-beam lithography using silk as a resist. *Nature Nanotechnology*, **2014**, 9, 306-10	28.7	195
1028	Fabrication of Silk Microneedles for Controlled-Release Drug Delivery. *Advanced Functional Materials*, **2012**, 22, 330-335	15.6	195
1027	Lyophilized silk fibroin hydrogels for the sustained local delivery of therapeutic monoclonal antibodies. *Biomaterials*, **2011**, 32, 2642-50	15.6	194
1026	Mechanism of enzymatic degradation of beta-sheet crystals. *Biomaterials*, **2010**, 31, 2926-33	15.6	192
1025	Design of biodegradable, implantable devices towards clinical translation. *Nature Reviews Materials* , **2020**, 5, 61-81	73.3	188
1024	Evolution of Bioinks and Additive Manufacturing Technologies for 3D Bioprinting. *ACS Biomaterials Science and Engineering*, **2016**, 2, 1662-1678	5.5	187
1023	Synthesis and characterization of polymers produced by horseradish peroxidase in dioxane. *Journal of Polymer Science Part A*, **1991**, 29, 1561-1574	2.5	186
1022	Can tissue engineering concepts advance tumor biology research?. *Trends in Biotechnology*, **2010**, 28, 125-33	15.1	185
1021	Porous silk fibroin 3-D scaffolds for delivery of bone morphogenetic protein-2 in vitro and in vivo. *Journal of Biomedical Materials Research - Part A*, **2006**, 78, 324-34	5.4	185
1020	Development of silk-based scaffolds for tissue engineering of bone from human adipose-derived stem cells. *Acta Biomaterialia*, **2012**, 8, 2483-92	10.8	184
1019	Biopolymer nanofibrils: structure, modeling, preparation, and applications. *Progress in Polymer Science*, **2018**, 85, 1-56	29.6	183
1018	Novel nanocomposites from spider silk-silica fusion (chimeric) proteins. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 9428-33	11.5	182
1017	Silk inverse opals. *Nature Photonics*, **2012**, 6, 818-823	33.9	181
1016	Metamaterials on paper as a sensing platform. *Advanced Materials*, **2011**, 23, 3197-201	24	178
1015	Enzyme-Catalyzed .epsilon.-Caprolactone Ring-Opening Polymerization. *Macromolecules*, **1995**, 28, 73-78	5.5	178
1014	Silk microfiber-reinforced silk hydrogel composites for functional cartilage tissue repair. *Acta Biomaterialia*, **2015**, 11, 27-36	10.8	176
1013	Adipose tissue engineering for soft tissue regeneration. *Tissue Engineering - Part B: Reviews*, **2010**, 16, 413-26	7.9	176

1012	Mandibular repair in rats with premineralized silk scaffolds and BMP-2-modified bMSCs. *Biomaterials*, **2009**, 30, 4522-32	15.6	176
1011	Enzyme-Catalyzed Ring-Opening Polymerization of □Pentadecalactone□ *Macromolecules*, **1997**, 30, 2705-2711	5.5	174
1010	Tunable self-assembly of genetically engineered silk--elastin-like protein polymers. *Biomacromolecules*, **2011**, 12, 3844-50	6.9	170
1009	RGD-functionalized bioengineered spider dragline silk biomaterial. *Biomacromolecules*, **2006**, 7, 3139-45	6.9	170
1008	Advanced bioreactor with controlled application of multi-dimensional strain for tissue engineering. *Journal of Biomechanical Engineering*, **2002**, 124, 742-9	2.1	170
1007	Membrane potential controls adipogenic and osteogenic differentiation of mesenchymal stem cells. *PLoS ONE*, **2008**, 3, e3737	3.7	169
1006	The influence of elasticity and surface roughness on myogenic and osteogenic-differentiation of cells on silk-elastin biomaterials. *Biomaterials*, **2011**, 32, 8979-89	15.6	168
1005	Genetic engineering of fibrous proteins: spider dragline silk and collagen. *Advanced Drug Delivery Reviews*, **2002**, 54, 1131-43	18.5	168
1004	Multilayered silk scaffolds for meniscus tissue engineering. *Biomaterials*, **2011**, 32, 639-51	15.6	166
1003	Enzymatically crosslinked silk-hyaluronic acid hydrogels. *Biomaterials*, **2017**, 131, 58-67	15.6	165
1002	Potential of 3-D tissue constructs engineered from bovine chondrocytes/silk fibroin-chitosan for in vitro cartilage tissue engineering. *Biomaterials*, **2011**, 32, 5773-81	15.6	162
1001	Design and function of biomimetic multilayer water purification membranes. *Science Advances*, **2017**, 3, e1601939	14.3	161
1000	Silk coatings on PLGA and alginate microspheres for protein delivery. *Biomaterials*, **2007**, 28, 4161-9	15.6	161
999	Nano- and Micropatterning of Optically Transparent, Mechanically Robust, Biocompatible Silk Fibroin Films. *Advanced Materials*, **2008**, 20, 3070-3072	24	161
998	Cartilage-like tissue engineering using silk scaffolds and mesenchymal stem cells. *Tissue Engineering*, **2006**, 12, 2729-38		159
997	3D in vitro modeling of the central nervous system. *Progress in Neurobiology*, **2015**, 125, 1-25	10.9	158
996	Polymorphic regenerated silk fibers assembled through bioinspired spinning. *Nature Communications*, **2017**, 8, 1387	17.4	158
995	Concise review: Mesenchymal stem cell tumor-homing: detection methods in disease model systems. *Stem Cells*, **2011**, 29, 920-7	5.8	158

994	Human bone marrow-derived MSCs can home to orthotopic breast cancer tumors and promote bone metastasis. *Cancer Research*, **2010**, 70, 10044-50	10.1	158
993	Silk Fibroin Microfluidic Devices. *Advanced Materials*, **2007**, 19, 2847-2850	24	158
992	Osteogenesis by human mesenchymal stem cells cultured on silk biomaterials: comparison of adenovirus mediated gene transfer and protein delivery of BMP-2. *Biomaterials*, **2006**, 27, 4993-5002	15.6	157
991	Quantitative metabolic imaging using endogenous fluorescence to detect stem cell differentiation. *Scientific Reports*, **2013**, 3, 3432	4.9	156
990	pH-dependent anticancer drug release from silk nanoparticles. *Advanced Healthcare Materials*, **2013** , 2, 1606-11	10.1	156
989	In vitro and in vivo evaluation of differentially demineralized cancellous bone scaffolds combined with human bone marrow stromal cells for tissue engineering. *Biomaterials*, **2005**, 26, 3173-85	15.6	156
988	Epigenetic changes induced by adenosine augmentation therapy prevent epileptogenesis. *Journal of Clinical Investigation*, **2013**, 123, 3552-63	15.9	156
987	Insoluble and flexible silk films containing glycerol. *Biomacromolecules*, **2010**, 11, 143-50	6.9	155
986	Bio-microfluidics: biomaterials and biomimetic designs. *Advanced Materials*, **2010**, 22, 249-60	24	154
985	Structure-function-property-design interplay in biopolymers: spider silk. *Acta Biomaterialia*, **2014**, 10, 1612-26	10.8	151
984	Silk self-assembly mechanisms and control from thermodynamics to kinetics. *Biomacromolecules*, **2012**, 13, 826-32	6.9	150
983	Nanolayer biomaterial coatings of silk fibroin for controlled release. *Journal of Controlled Release*, **2007**, 121, 190-9	11.7	150
982	Silk fibroin/chondroitin sulfate/hyaluronic acid ternary scaffolds for dermal tissue reconstruction. *Acta Biomaterialia*, **2013**, 9, 6771-82	10.8	149
981	Helicoidal multi-lamellar features of RGD-functionalized silk biomaterials for corneal tissue engineering. *Biomaterials*, **2010**, 31, 8953-63	15.6	148
980	Carbonization of a stable β-sheet-rich silk protein into a pseudographitic pyroprotein. *Nature Communications*, **2015**, 6, 7145	17.4	147
979	Electrogelation for protein adhesives. *Advanced Materials*, **2010**, 22, 711-5	24	147
978	Biomaterial coatings by stepwise deposition of silk fibroin. *Langmuir*, **2005**, 21, 11335-41	4	147
977	Protein-based block copolymers. *Biomacromolecules*, **2011**, 12, 269-89	6.9	146

976	Electrical and mechanical stimulation of cardiac cells and tissue constructs. *Advanced Drug Delivery Reviews*, **2016**, 96, 135-55	18.5	145
975	Processing methods to control silk fibroin film biomaterial features. *Journal of Materials Science*, **2008**, 43, 6967-6985	4.3	144
974	Inkjet Printing of Regenerated Silk Fibroin: From Printable Forms to Printable Functions. *Advanced Materials*, **2015**, 27, 4273-9	24	143
973	Silk hydrogel for cartilage tissue engineering. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2010**, 95, 84-90	3.5	143
972	Biomaterials from ultrasonication-induced silk fibroin-hyaluronic acid hydrogels. *Biomacromolecules* , **2010**, 11, 3178-88	6.9	141
971	Template-directed synthesis of aragonite under supramolecular hydrogen-bonded langmuir monolayers. *Advanced Materials*, **1997**, 9, 124-127	24	141
970	3D Bioprinting of Self-Standing Silk-Based Bioink. *Advanced Healthcare Materials*, **2018**, 7, e1701026	10.1	140
969	Stabilization of enzymes in silk films. *Biomacromolecules*, **2009**, 10, 1032-42	6.9	140
968	Lipase-Catalyzed Ring-Opening Polymerization of Trimethylene Carbonate *Macromolecules*, **1997**, 30, 7735-7742	5.5	140
967	Silk based bioinks for soft tissue reconstruction using 3-dimensional (3D) printing with in vitro and in vivo assessments. *Biomaterials*, **2017**, 117, 105-115	15.6	139
966	Antibiotic-Releasing Silk Biomaterials for Infection Prevention and Treatment. *Advanced Functional Materials*, **2013**, 23, 854-861	15.6	137
965	Critical-size calvarial bone defects healing in a mouse model with silk scaffolds and SATB2-modified iPSCs. *Biomaterials*, **2011**, 32, 5065-76	15.6	133
964	Silk Hydrogels as Soft Substrates for Neural Tissue Engineering. *Advanced Functional Materials*, **2013**, 23, 5140-5149	15.6	132
963	Enhanced function of pancreatic islets co-encapsulated with ECM proteins and mesenchymal stromal cells in a silk hydrogel. *Biomaterials*, **2012**, 33, 6691-7	15.6	131
962	Biomaterials derived from silk-tropoelastin protein systems. *Biomaterials*, **2010**, 31, 8121-31	15.6	130
961	The use of silk-based devices for fracture fixation. *Nature Communications*, **2014**, 5, 3385	17.4	129
960	Tunable silk: using microfluidics to fabricate silk fibers with controllable properties. *Biomacromolecules*, **2011**, 12, 1504-11	6.9	129
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958	Silk-Based Advanced Materials for Soft Electronics. *Accounts of Chemical Research*, **2019**, 52, 2916-2927	24.3	128
957	Injectable and pH-Responsive Silk Nanofiber Hydrogels for Sustained Anticancer Drug Delivery. *ACS Applied Materials & Interfaces*, **2016**, 8, 17118-26	9.5	127
956	Ethyl Glucoside as a Multifunctional Initiator for Enzyme-Catalyzed Regioselective Lactone Ring-Opening Polymerization. *Journal of the American Chemical Society*, **1998**, 120, 1363-1367	16.4	127
955	Stabilization of vaccines and antibiotics in silk and eliminating the cold chain. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 11981-6	11.5	125
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953	Enzyme-Catalyzed Polymerizations of εCaprolactone: Effects of Initiator on Product Structure, Propagation Kinetics, and Mechanism. *Macromolecules*, **1996**, 29, 7759-7766	5.5	124
952	Recombinant DNA production of spider silk proteins. *Microbial Biotechnology*, **2013**, 6, 651-63	6.3	123
951	Silk polymer-based adenosine release: therapeutic potential for epilepsy. *Biomaterials*, **2008**, 29, 3609-16	15.6	123
950	Beating the heat--fast scanning melts silk beta sheet crystals. *Scientific Reports*, **2013**, 3, 1130	4.9	121
949	Lyophilized Silk Sponges: A Versatile Biomaterial Platform for Soft Tissue Engineering. *ACS Biomaterials Science and Engineering*, **2015**, 1, 260-270	5.5	120
948	Review physical and chemical aspects of stabilization of compounds in silk. *Biopolymers*, **2012**, 97, 479-98	2.2	120
947	Collagen Structural Hierarchy and Susceptibility to Degradation by Ultraviolet Radiation. *Materials Science and Engineering C*, **2008**, 28, 1420-1429	8.3	120
946	Performance enhancement of terahertz metamaterials on ultrathin substrates for sensing applications. *Applied Physics Letters*, **2010**, 97, 261909	3.4	119
945	Rapid nanoimprinting of silk fibroin films for biophotonic applications. *Advanced Materials*, **2010**, 22, 1746-9	24	119
944	Engineering custom-designed osteochondral tissue grafts. *Trends in Biotechnology*, **2008**, 26, 181-9	15.1	118
943	Bone regeneration on macroporous aqueous-derived silk 3-D scaffolds. *Macromolecular Bioscience*, **2007**, 7, 643-55	5.5	118
942	Effect of scaffold design on bone morphology in vitro. *Tissue Engineering*, **2006**, 12, 3417-29		117
941	Direct-write assembly of 3D silk/hydroxyapatite scaffolds for bone co-cultures. *Advanced Healthcare Materials*, **2012**, 1, 729-35	10.1	116

940	Self-assembling doxorubicin silk hydrogels for the focal treatment of primary breast cancer. *Advanced Functional Materials*, **2013**, 23, 58-65	15.6	116
939	Liquid Exfoliated Natural Silk Nanofibrils: Applications in Optical and Electrical Devices. *Advanced Materials*, **2016**, 28, 7783-90	24	115
938	Two-photon microscopy for non-invasive, quantitative monitoring of stem cell differentiation. *PLoS ONE*, **2010**, 5, e10075	3.7	115
937	Relationships between mechanical properties and extracellular matrix constituents of the cervical stroma during pregnancy. *Seminars in Perinatology*, **2009**, 33, 300-7	3.3	115
936	Osteoinductive silk-silica composite biomaterials for bone regeneration. *Biomaterials*, **2010**, 31, 8902-10	15.6	115
935	Controlled Free-Radical Polymerization of Phenol Derivatives by Enzyme-Catalyzed Reactions in Organic Solvents. *Macromolecules*, **1995**, 28, 5192-5197	5.5	115
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933	The effect of genetically engineered spider silk-dentin matrix protein 1 chimeric protein on hydroxyapatite nucleation. *Biomaterials*, **2007**, 28, 2358-67	15.6	113
932	Gel spinning of silk tubes for tissue engineering. *Biomaterials*, **2008**, 29, 4650-7	15.6	113
931	Ultrathin Free-Standing Bombyx mori Silk Nanofibril Membranes. *Nano Letters*, **2016**, 16, 3795-800	11.5	113
930	Corneal tissue engineering: recent advances and future perspectives. *Tissue Engineering - Part B: Reviews*, **2015**, 21, 278-87	7.9	112
929	Stabilization and release of enzymes from silk films. *Macromolecular Bioscience*, **2010**, 10, 359-68	5.5	112
928	Relationships between degradability of silk scaffolds and osteogenesis. *Biomaterials*, **2010**, 31, 6162-72	15.6	112
927	Directed assembly of bio-inspired hierarchical materials with controlled nanofibrillar architectures. *Nature Nanotechnology*, **2017**, 12, 474-480	28.7	111
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