David L Kaplan

List of Publications by Year
in descending order

1,148 papers	107,314 citations	143 157 h-index	483 270 g-index
1165 all docs	1165 docs citations	1165 times ranked	59323 citing authors

#	Article	IF	Citations
1	Silk-based biomaterials. Biomaterials, 2003, 24, 401-416.	11.4	2,981
2	Materials fabrication from Bombyx mori silk fibroin. Nature Protocols, 2011, 6, 1612-1631.	12.0	2,265
3	Silk as a biomaterial. Progress in Polymer Science, 2007, 32, 991-1007.	24.7	2,208
4	Dissolvable films of silk fibroin for ultrathin conformal bio-integrated electronics. Nature Materials, 2010, 9, 511-517.	27.5	1,501
5	New Opportunities for an Ancient Material. Science, 2010, 329, 528-531.	12.6	1,224
6	Mechanism of silk processing in insects and spiders. Nature, 2003, 424, 1057-1061.	27.8	1,214
7	A Physically Transient Form of Silicon Electronics. Science, 2012, 337, 1640-1644.	12.6	1,085
8	Electrospun silk-BMP-2 scaffolds for bone tissue engineering. Biomaterials, 2006, 27, 3115-3124.	11.4	1,056
9	Three-dimensional aqueous-derived biomaterial scaffolds from silk fibroin. Biomaterials, 2005, 26, 2775-2785.	11.4	884
10	Stem cell-based tissue engineering with silk biomaterials. Biomaterials, 2006, 27, 6064-6082.	11.4	869
11	Porous 3-D Scaffolds from Regenerated Silk Fibroin. Biomacromolecules, 2004, 5, 718-726.	5.4	807
12	Graphene-based wireless bacteria detection on tooth enamel. Nature Communications, 2012, 3, 763.	12.8	806
13	Silk matrix for tissue engineered anterior cruciate ligaments. Biomaterials, 2002, 23, 4131-4141.	11.4	791
14	Vascularization Strategies for Tissue Engineering. Tissue Engineering - Part B: Reviews, 2009, 15, 353-370.	4.8	765
15	Functionalized silk-based biomaterials for bone formation. Journal of Biomedical Materials Research Part B, 2001, 54, 139-148.	3.1	738
16	Structure and Properties of Silk Hydrogels. Biomacromolecules, 2004, 5, 786-792.	5.4	735
17	The inflammatory responses to silk films in vitro and in vivo. Biomaterials, 2005, 26, 147-155.	11.4	725
18	ElectrospinningBombyx moriSilk with Poly(ethylene oxide). Biomacromolecules, 2002, 3, 1233-1239.	5.4	679

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19	In vivo degradation of three-dimensional silk fibroin scaffolds. Biomaterials, 2008, 29, 3415-3428.	11.4	679
20	In vitro degradation of silk fibroin. Biomaterials, 2005, 26, 3385-3393.	11.4	657
21	Human bone marrow stromal cell responses on electrospun silk fibroin mats. Biomaterials, 2004, 25, 1039-1047.	11.4	596
22	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, 19227-19232.	7.1	593
23	Cationic polymers and their therapeutic potential. Chemical Society Reviews, 2012, 41, 7147.	38.1	588
24	Sonication-induced gelation of silk fibroin for cell encapsulation. Biomaterials, 2008, 29, 1054-1064.	11.4	575
25	Cell differentiation by mechanical stress. FASEB Journal, 2002, 16, 1-13.	0.5	561
26	Waterproof AlInGaP optoelectronics on stretchable substrates with applications in biomedicine andÂrobotics. Nature Materials, 2010, 9, 929-937.	27.5	557
27	Water-insoluble silk films with silk I structure. Acta Biomaterialia, 2010, 6, 1380-1387.	8.3	530
28	Regulation of Silk Material Structure by Temperature-Controlled Water Vapor Annealing. Biomacromolecules, 2011, 12, 1686-1696.	5.4	530
29	Macrophage responses to silk. Biomaterials, 2003, 24, 3079-3085.	11.4	504
30	Native-sized recombinant spider silk protein produced in metabolically engineered <i>Escherichia coli</i> results in a strong fiber. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 14059-14063.	7.1	485
31	Mechanisms of Silk Fibroin Solâ^'Gel Transitions. Journal of Physical Chemistry B, 2006, 110, 21630-21638.	2.6	458
32	Silk Materials â€" A Road to Sustainable High Technology. Advanced Materials, 2012, 24, 2824-2837.	21.0	456
33	Nanofibrils in nature and materials engineering. Nature Reviews Materials, 2018, 3, .	48.7	455
34	Villification: How the Gut Gets Its Villi. Science, 2013, 342, 212-218.	12.6	454
35	Agarose-based biomaterials for tissue engineering. Carbohydrate Polymers, 2018, 187, 66-84.	10.2	454
36	Design of biodegradable, implantable devices towards clinical translation. Nature Reviews Materials, 2020, 5, 61-81.	48.7	440

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37	Controlling silk fibroin particle features for drug delivery. Biomaterials, 2010, 31, 4583-4591.	11.4	433
38	In vitro cartilage tissue engineering with 3D porous aqueous-derived silk scaffolds and mesenchymal stem cells. Biomaterials, 2005, 26, 7082-7094.	11.4	412
39	Biomedical applications of chemically-modified silk fibroin. Journal of Materials Chemistry, 2009, 19, 6443.	6.7	411
40	Role of Membrane Potential in the Regulation of Cell Proliferation and Differentiation. Stem Cell Reviews and Reports, 2009, 5, 231-246.	5.6	388
41	Cartilage tissue engineering with silk scaffolds and human articular chondrocytes. Biomaterials, 2006, 27, 4434-4442.	11.4	386
42	Growth factor gradients via microsphere delivery in biopolymer scaffolds for osteochondral tissue engineering. Journal of Controlled Release, 2009, 134, 81-90.	9.9	385
43	Electrospun silk biomaterial scaffolds for regenerative medicine. Advanced Drug Delivery Reviews, 2009, 61, 988-1006.	13.7	385
44	Silk nanospheres and microspheres from silk/pva blend films for drug delivery. Biomaterials, 2010, 31, 1025-1035.	11.4	372
45	Silk film biomaterials for cornea tissue engineering. Biomaterials, 2009, 30, 1299-1308.	11.4	362
46	InÂvivo bioresponses to silk proteins. Biomaterials, 2015, 71, 145-157.	11.4	357
47	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, 5280-5290.	11.4	340
48	Highly Tunable Elastomeric Silk Biomaterials. Advanced Functional Materials, 2014, 24, 4615-4624.	14.9	338
49	High-strength silk protein scaffolds for bone repair. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 7699-7704.	7.1	337
50	Control of in vitro tissue-engineered bone-like structures using human mesenchymal stem cells and porous silk scaffolds. Biomaterials, 2007, 28, 1152-1162.	11.4	335
51	Silkâ€Based Conformal, Adhesive, Edible Food Sensors. Advanced Materials, 2012, 24, 1067-1072.	21.0	335
52	Overview of Silk Fibroin Use in Wound Dressings. Trends in Biotechnology, 2018, 36, 907-922.	9.3	330
53	Silk-based delivery systems of bioactive molecules. Advanced Drug Delivery Reviews, 2010, 62, 1497-1508.	13.7	324
54	Silkworm silk-based materials and devices generated using bio-nanotechnology. Chemical Society Reviews, 2018, 47, 6486-6504.	38.1	324

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55	Biomaterials for the Development of Peripheral Nerve Guidance Conduits. Tissue Engineering - Part B: Reviews, 2012, 18, 40-50.	4.8	321
56	Silk fibroin/hydroxyapatite composites for bone tissue engineering. Biotechnology Advances, 2018, 36, 68-91.	11.7	320
57	Engineering bone-like tissuein vitro using human bone marrow stem cells and silk scaffolds. Journal of Biomedical Materials Research Part B, 2004, 71A, 25-34.	3.1	319
58	Vortex-Induced Injectable Silk Fibroin Hydrogels. Biophysical Journal, 2009, 97, 2044-2050.	0.5	317
59	Natural protective glue protein, sericin bioengineered by silkworms: Potential for biomedical and biotechnological applications. Progress in Polymer Science, 2008, 33, 998-1012.	24.7	316
60	Scientific, sustainability and regulatory challenges of cultured meat. Nature Food, 2020, 1, 403-415.	14.0	315
61	Tissue Engineering of Ligaments. Annual Review of Biomedical Engineering, 2004, 6, 131-156.	12.3	313
62	Biopolymer nanofibrils: Structure, modeling, preparation, and applications. Progress in Polymer Science, 2018, 85, 1-56.	24.7	312
63	Human bone marrow stromal cell and ligament fibroblast responses on RGD-modified silk fibers. Journal of Biomedical Materials Research Part B, 2003, 67A, 559-570.	3.1	311
64	Biocompatible Silk Printed Optical Waveguides. Advanced Materials, 2009, 21, 2411-2415.	21.0	308
65	A new route for silk. Nature Photonics, 2008, 2, 641-643.	31.4	306
66	Mechanical Properties of Electrospun Silk Fibers. Macromolecules, 2004, 37, 6856-6864.	4.8	297
67	Spider silks and their applications. Trends in Biotechnology, 2008, 26, 244-251.	9.3	291
68	In vitro evaluation of electrospun silk fibroin scaffolds for vascular cell growth. Biomaterials, 2008, 29, 2217-2227.	11.4	289
69	Influence of macroporous protein scaffolds on bone tissue engineering from bone marrow stem cells. Biomaterials, 2005, 26, 4442-4452.	11.4	283
70	Silk-based biomaterials for sustained drug delivery. Journal of Controlled Release, 2014, 190, 381-397.	9.9	283
71	Bioactive Silk Protein Biomaterial Systems for Optical Devices. Biomacromolecules, 2008, 9, 1214-1220.	5.4	281
72	Effect of processing on silkâ€based biomaterials: Reproducibility and biocompatibility. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2011, 99B, 89-101.	3.4	281

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73	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, 17385-17389.	7.1	281
74	Silk microspheres for encapsulation and controlled release. Journal of Controlled Release, 2007, 117, 360-370.	9.9	276
75	Construction, Cloning, and Expression of Synthetic Genes Encoding Spider Dragline Silk. Biochemistry, 1995, 34, 10879-10885.	2.5	272
76	Bone tissue engineering with premineralized silk scaffolds. Bone, 2008, 42, 1226-1234.	2.9	270
77	Mechanical and thermal properties of dragline silk from the spider Nephila clavipes. Polymers for Advanced Technologies, 1994, 5, 401-410.	3.2	269
78	Functionalized Silk Biomaterials for Wound Healing. Advanced Healthcare Materials, 2013, 2, 206-217.	7.6	264
79	Directâ€Write Assembly of Microperiodic Silk Fibroin Scaffolds for Tissue Engineering Applications. Advanced Functional Materials, 2008, 18, 1883-1889.	14.9	261
80	Degradation Mechanism and Control of Silk Fibroin. Biomacromolecules, 2011, 12, 1080-1086.	5.4	260
81	Plant-based and cell-based approaches to meat production. Nature Communications, 2020, 11, 6276.	12.8	260
82	The use of injectable sonication-induced silk hydrogel for VEGF165 and BMP-2 delivery for elevation of the maxillary sinus floor. Biomaterials, 2011, 32, 9415-9424.	11.4	255
83	Bioengineered functional brain-like cortical tissue. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 13811-13816.	7.1	255
84	Silk fibroin biomaterials for controlled release drug delivery. Expert Opinion on Drug Delivery, 2011, 8, 797-811.	5.0	248
85	Stem cell- and scaffold-based tissue engineering approaches to osteochondral regenerative medicine. Seminars in Cell and Developmental Biology, 2009, 20, 646-655.	5.0	247
86	Protein-based composite materials. Materials Today, 2012, 15, 208-215.	14.2	247
87	Silk fibroin microtubes for blood vessel engineering. Biomaterials, 2007, 28, 5271-5279.	11.4	246
88	Silk-based electrospun tubular scaffolds for tissue-engineered vascular grafts. Journal of Biomaterials Science, Polymer Edition, 2008, 19, 653-664.	3.5	245
89	Silicon electronics on silk as a path to bioresorbable, implantable devices. Applied Physics Letters, 2009, 95, 133701.	3.3	245
90	Fabrication of Silk Microneedles for Controlledâ€Release Drug Delivery. Advanced Functional Materials, 2012, 22, 330-335.	14.9	245

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91	All-water-based electron-beam lithography using silk as a resist. Nature Nanotechnology, 2014, 9, 306-310.	31.5	245
92	Modification of silk fibroin using diazonium coupling chemistry and the effects on hMSC proliferation and differentiation. Biomaterials, 2008, 29, 2829-2838.	11.4	243
93	Role of Adult Mesenchymal Stem Cells in Bone Tissue Engineering Applications: Current Status and Future Prospects. Tissue Engineering, 2005, 11, 787-802.	4.6	240
94	Mapping Domain Structures in Silks from Insects and Spiders Related to Protein Assembly. Journal of Molecular Biology, 2004, 335, 27-40.	4.2	238
95	Nucleation and growth of mineralized bone matrix on silk-hydroxyapatite composite scaffolds. Biomaterials, 2011, 32, 2812-2820.	11.4	238
96	Evolution of Bioinks and Additive Manufacturing Technologies for 3D Bioprinting. ACS Biomaterials Science and Engineering, 2016, 2, 1662-1678.	5.2	237
97	Silk-Based Advanced Materials for Soft Electronics. Accounts of Chemical Research, 2019, 52, 2916-2927.	15.6	232
98	Enzymatically crosslinked silk-hyaluronic acid hydrogels. Biomaterials, 2017, 131, 58-67.	11.4	228
99	Mechanism of enzymatic degradation of beta-sheet crystals. Biomaterials, 2010, 31, 2926-2933.	11.4	227
100	Natural and genetically engineered proteins for tissue engineering. Progress in Polymer Science, 2012, 37, 1-17.	24.7	227
101	Synthesis and characterization of polymers produced by horseradish peroxidase in dioxane. Journal of Polymer Science Part A, 1991, 29, 1561-1574.	2.3	225
102	Lyophilized silk fibroin hydrogels for the sustained local delivery of therapeutic monoclonal antibodies. Biomaterials, 2011, 32, 2642-2650.	11.4	225
103	Biomaterial Films ofBombyxMoriSilk Fibroin with Poly(ethylene oxide). Biomacromolecules, 2004, 5, 711-717.	5.4	224
104	Design and function of biomimetic multilayer water purification membranes. Science Advances, 2017, 3, e1601939.	10.3	221
105	Silk microfiber-reinforced silk hydrogel composites for functional cartilage tissue repair. Acta Biomaterialia, 2015, 11, 27-36.	8.3	220
106	Silk inverse opals. Nature Photonics, 2012, 6, 818-823.	31.4	217
107	Quantitative metabolic imaging using endogenous fluorescence to detect stem cell differentiation. Scientific Reports, 2013, 3, 3432.	3.3	215
108	Adipose Tissue Engineering for Soft Tissue Regeneration. Tissue Engineering - Part B: Reviews, 2010, 16, 413-426.	4.8	212

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109	Metamaterials on Paper as a Sensing Platform. Advanced Materials, 2011, 23, 3197-3201.	21.0	210
110	Development of silk-based scaffolds for tissue engineering of bone from human adipose-derived stem cells. Acta Biomaterialia, 2012, 8, 2483-2492.	8.3	210
111	Electrical and mechanical stimulation of cardiac cells and tissue constructs. Advanced Drug Delivery Reviews, 2016, 96, 135-155.	13.7	210
112	Can tissue engineering concepts advance tumor biology research?. Trends in Biotechnology, 2010, 28, 125-133.	9.3	208
113	Polymorphic regenerated silk fibers assembled through bioinspired spinning. Nature Communications, 2017, 8, 1387.	12.8	208
114	Membrane Potential Controls Adipogenic and Osteogenic Differentiation of Mesenchymal Stem Cells. PLoS ONE, 2008, 3, e3737.	2.5	206
115	Structureâ€“functionâ€“propertyâ€“design interplay in biopolymers: Spider silk. Acta Biomaterialia, 2014, 10, 1612-1626.	8.3	206
116	Epigenetic changes induced by adenosine augmentation therapy prevent epileptogenesis. Journal of Clinical Investigation, 2013, 123, 3552-3563.	8.2	206
117	Porous silk fibroin 3-D scaffolds for delivery of bone morphogenetic protein-2in vitro andin vivo. Journal of Biomedical Materials Research - Part A, 2006, 78A, 324-334.	4.0	201
118	Tunable Self-Assembly of Genetically Engineered Silkâ€“Elastin-like Protein Polymers. Biomacromolecules, 2011, 12, 3844-3850.	5.4	199
119	Enzyme-Catalyzed .epsilon.-Caprolactone Ring-Opening Polymerization. Macromolecules, 1995, 28, 73-78.	4.8	198
120	3D in vitro modeling of the central nervous system. Progress in Neurobiology, 2015, 125, 1-25.	5.7	196
121	Advanced Bioreactor with Controlled Application of Multi-Dimensional Strain For Tissue Engineering. Journal of Biomechanical Engineering, 2002, 124, 742-749.	1.3	195
122	Novel nanocomposites from spider silk-silica fusion (chimeric) proteins. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 9428-9433.	7.1	194
123	Mandibular repair in rats with premineralized silk scaffolds and BMP-2-modified bMSCs. Biomaterials, 2009, 30, 4522-4532.	11.4	194
124	RGD-Functionalized Bioengineered Spider Dragline Silk Biomaterial. Biomacromolecules, 2006, 7, 3139-3145.	5.4	193
125	pHâ€Dependent Anticancer Drug Release from Silk Nanoparticles. Advanced Healthcare Materials, 2013, 2, 1606-1611.	7.6	192
126	Carbonization of a stable Î²-sheet-rich silk protein into a pseudographitic pyroprotein. Nature Communications, 2015, 6, 7145.	12.8	192

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127	Silk based bioinks for soft tissue reconstruction using 3-dimensional (3D) printing with inÂvitro and inÂvivo assessments. Biomaterials, 2017, 117, 105-115.	11.4	189
128	The influence of elasticity and surface roughness on myogenic and osteogenic-differentiation of cells on silk-elastin biomaterials. Biomaterials, 2011, 32, 8979-8989.	11.4	188
129	Enzyme-Catalyzed Ring-Opening Polymerization of Ï‰-Pentadecalactoneâ€. Macromolecules, 1997, 30, 2705-2711.	4.8	187
130	Insoluble and Flexible Silk Films Containing Glycerol. Biomacromolecules, 2010, 11, 143-150.	5.4	187
131	Concise Review: Mesenchymal Stem Cell Tumor-Homing: Detection Methods in Disease Model Systems. Stem Cells, 2011, 29, 920-927.	3.2	185
132	Potential of 3-D tissue constructs engineered from bovine chondrocytes/silk fibroin-chitosan for inÂvitro cartilage tissue engineering. Biomaterials, 2011, 32, 5773-5781.	11.4	184
133	Genetic engineering of fibrous proteins: spider dragline silk and collagen. Advanced Drug Delivery Reviews, 2002, 54, 1131-1143.	13.7	183
134	Silk Fibroin Microfluidic Devices. Advanced Materials, 2007, 19, 2847-2850.	21.0	182
135	Cartilage-like Tissue Engineering Using Silk Scaffolds and Mesenchymal Stem Cells. Tissue Engineering, 2006, 12, 2729-2738.	4.6	181
136	Silk coatings on PLGA and alginate microspheres for protein delivery. Biomaterials, 2007, 28, 4161-4169.	11.4	181
137	Nanoâ€•and Micropatterning of Optically Transparent, Mechanically Robust, Biocompatible Silk Fibroin Films. Advanced Materials, 2008, 20, 3070-3072.	21.0	181
138	Multilayered silk scaffolds for meniscus tissue engineering. Biomaterials, 2011, 32, 639-651.	11.4	181
139	Silk Self-Assembly Mechanisms and Control From Thermodynamics to Kinetics. Biomacromolecules, 2012, 13, 826-832.	5.4	180
140	Bioâ€microfluidics: Biomaterials and Biomimetic Designs. Advanced Materials, 2010, 22, 249-260.	21.0	178
141	Human Bone Marrowâ€"Derived MSCs Can Home to Orthotopic Breast Cancer Tumors and Promote Bone Metastasis. Cancer Research, 2010, 70, 10044-10050.	0.9	177
142	3D Bioprinting of Selfâ€Standing Silkâ€Based Bioink. Advanced Healthcare Materials, 2018, 7, e1701026.	7.6	177
143	Silk fibroin/chondroitin sulfate/hyaluronic acid ternary scaffolds for dermal tissue reconstruction. Acta Biomaterialia, 2013, 9, 6771-6782.	8.3	176
144	Stabilization of Enzymes in Silk Films. Biomacromolecules, 2009, 10, 1032-1042.	5.4	174

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145	Inkjet Printing of Regenerated Silk Fibroin: From Printable Forms to Printable Functions. Advanced Materials, 2015, 27, 4273-4279.	21.0	174
146	Injectable and pH-Responsive Silk Nanofiber Hydrogels for Sustained Anticancer Drug Delivery. ACS Applied Materials & Interfaces, 2016, 8, 17118-17126.	8.0	172
147	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.	11.4	171
148	Processing methods to control silk fibroin film biomaterial features. Journal of Materials Science, 2008, 43, 6967-6985.	3.7	170
149	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, 3173-3185.	11.4	169
150	Collagen structural hierarchy and susceptibility to degradation by ultraviolet radiation. Materials Science and Engineering C, 2008, 28, 1420-1429.	7.3	168
151	Electrogelation for Protein Adhesives. Advanced Materials, 2010, 22, 711-715.	21.0	168
152	Biomaterials from Ultrasonication-Induced Silk Fibroinâˆ'Hyaluronic Acid Hydrogels. Biomacromolecules, 2010, 11, 3178-3188.	5.4	168
153	Biomaterial Coatings by Stepwise Deposition of Silk Fibroin. Langmuir, 2005, 21, 11335-11341.	3.5	167
154	Silk hydrogel for cartilage tissue engineering. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2010, 95B, 84-90.	3.4	167
155	Nanolayer biomaterial coatings of silk fibroin for controlled release. Journal of Controlled Release, 2007, 121, 190-199.	9.9	164
156	Helicoidal multi-lamellar features of RGD-functionalized silk biomaterials for corneal tissue engineering. Biomaterials, 2010, 31, 8953-8963.	11.4	164
157	Antibioticâ€Releasing Silk Biomaterials for Infection Prevention and Treatment. Advanced Functional Materials, 2013, 23, 854-861.	14.9	164
158	Enzymatically crosslinked silk and silk-gelatin hydrogels with tunable gelation kinetics, mechanical properties and bioactivity for cell culture and encapsulation. Biomaterials, 2020, 232, 119720.	11.4	163
159	Relationships Between Mechanical Properties and Extracellular Matrix Constituents of the Cervical Stroma During Pregnancy. Seminars in Perinatology, 2009, 33, 300-307.	2.5	161
160	The use of silk-based devices for fracture fixation. Nature Communications, 2014, 5, 3385.	12.8	160
161	Template-directed synthesis of aragonite under supramolecular hydrogen-bonded langmuir monolayers. Advanced Materials, 1997, 9, 124-127.	21.0	159
162	Recombinant Spidroins Fully Replicate Primary Mechanical Properties of Natural Spider Silk. Biomacromolecules, 2018, 19, 3853-3860.	5.4	159

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163	A 3D human brainâ€“like tissue model of herpes-induced Alzheimerâ€™s disease. Science Advances, 2020, 6, eaay8828.	10.3	159
164	Performance enhancement of terahertz metamaterials on ultrathin substrates for sensing applications. Applied Physics Letters, 2010, 97, .	3.3	158
165	Silk Hydrogels as Soft Substrates for Neural Tissue Engineering. Advanced Functional Materials, 2013, 23, 5140-5149.	14.9	157
166	Lipase-Catalyzed Ring-Opening Polymerization of Trimethylene Carbonateâ€. Macromolecules, 1997, 30, 7735-7742.	4.8	156
167	Protein-Based Block Copolymers. Biomacromolecules, 2011, 12, 269-289.	5.4	155
168	NF-ÎºB signaling is key in the wound healing processes of silk fibroin. Acta Biomaterialia, 2018, 67, 183-195.	8.3	155
169	Tunable Silk: Using Microfluidics to Fabricate Silk Fibers with Controllable Properties. Biomacromolecules, 2011, 12, 1504-1511.	5.4	154
170	Enhanced function of pancreatic islets co-encapsulated with ECM proteins and mesenchymal stromal cells in a silk hydrogel. Biomaterials, 2012, 33, 6691-6697.	11.4	154
171	Polyvinyl Alcohol/Silk Fibroin/Borax Hydrogel Ionotronics: A Highly Stretchable, Self-Healable, and Biocompatible Sensing Platform. ACS Applied Materials & Interfaces, 2019, 11, 23632-23638.	8.0	154
172	Recombinant <scp>DNA</scp> production of spider silk proteins. Microbial Biotechnology, 2013, 6, 651-663.	4.2	153
173	Dynamic culture conditions to generate silk-based tissue-engineered vascular grafts. Biomaterials, 2009, 30, 3213-3223.	11.4	149
174	Critical-size calvarial bone defects healing in a mouse model with silk scaffolds and SATB2-modified iPSCs. Biomaterials, 2011, 32, 5065-5076.	11.4	148
175	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, 11981-11986.	7.1	148
176	Integration of Stiff Graphene and Tough Silk for the Design and Fabrication of Versatile Electronic Materials. Advanced Functional Materials, 2018, 28, 1705291.	14.9	148
177	Tubular silk scaffolds for small diameter vascular grafts. Organogenesis, 2010, 6, 217-224.	1.2	147
178	Elasticity Maps of Living Neurons Measured by Combined Fluorescence and Atomic Force Microscopy. Biophysical Journal, 2012, 103, 868-877.	0.5	147
179	Relationships between degradability of silk scaffolds and osteogenesis. Biomaterials, 2010, 31, 6162-6172.	11.4	146
180	Corneal Tissue Engineering: Recent Advances and Future Perspectives. Tissue Engineering - Part B: Reviews, 2015, 21, 278-287.	4.8	146

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181	Lyophilized Silk Sponges: A Versatile Biomaterial Platform for Soft Tissue Engineering. ACS Biomaterials Science and Engineering, 2015, 1, 260-270.	5.2	146
182	Ultrathin Free-Standing <i>Bombyx mori</i> Silk Nanofibril Membranes. Nano Letters, 2016, 16, 3795-3800.	9.1	146
183	Functional, RFâ€Trilayer Sensors for Toothâ€Mounted, Wireless Monitoring of the Oral Cavity and Food Consumption. Advanced Materials, 2018, 30, e1703257.	21.0	146
184	Production of Curcumin-Loaded Silk Fibroin Nanoparticles for Cancer Therapy. Nanomaterials, 2018, 8, 126.	4.1	144
185	Beating the Heat - Fast Scanning Melts Silk Beta Sheet Crystals. Scientific Reports, 2013, 3, 1130.	3.3	143
186	Impact of silk biomaterial structure on proteolysis. Acta Biomaterialia, 2015, 11, 212-221.	8.3	142
187	Ethyl Glucoside as a Multifunctional Initiator for Enzyme-Catalyzed Regioselective Lactone Ring-Opening Polymerization. Journal of the American Chemical Society, 1998, 120, 1363-1367.	13.7	141
188	Biomaterials derived from silkâ€“tropoelastin protein systems. Biomaterials, 2010, 31, 8121-8131.	11.4	141
189	Clinical correlates in an experimental model of repetitive mild brain injury. Annals of Neurology, 2013, 74, 65-75.	5.3	141
190	Mechanism of resilin elasticity. Nature Communications, 2012, 3, 1003.	12.8	140
191	Programmable 3D silk bone marrow niche for platelet generation ex vivo and modeling of megakaryopoiesis pathologies. Blood, 2015, 125, 2254-2264.	1.4	140
192	Rapid Nanoimprinting of Silk Fibroin Films for Biophotonic Applications. Advanced Materials, 2010, 22, 1746-1749.	21.0	139
193	Silk fibroin for skin injury repair: Where do things stand?. Advanced Drug Delivery Reviews, 2020, 153, 28-53.	13.7	139
194	Physical and chemical aspects of stabilization of compounds in silk. Biopolymers, 2012, 97, 479-498.	2.4	138
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