Benedetto Marelli

List of Publications by Year
in descending order

85 papers	4,841 citations	76196 40 h-index	95083 68 g-index
89 all docs	89 docs citations	89 times ranked	6824 citing authors

#	Article	IF	Citations
1	Highly Tunable Elastomeric Silk Biomaterials. Advanced Functional Materials, 2014, 24, 4615-4624.	7.8	338
2	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.	3.3	281
3	All-water-based electron-beam lithography using silk as a resist. Nature Nanotechnology, 2014, 9, 306-310.	15.6	245
4	Accelerated mineralization of dense collagen-nano bioactive glass hybrid gels increases scaffold stiffness and regulates osteoblastic function. Biomaterials, 2011, 32, 8915-8926.	5.7	176
5	Inkjet Printing of Regenerated Silk Fibroin: From Printable Forms to Printable Functions. Advanced Materials, 2015, 27, 4273-4279.	11.1	174
6	Silk Fibroin as Edible Coating for Perishable Food Preservation. Scientific Reports, 2016, 6, 25263.	1.6	168
7	Compliant electrospun silk fibroin tubes for small vessel bypass grafting. Acta Biomaterialia, 2010, 6, 4019-4026.	4.1	147
8	Three-Dimensional Mineralization of Dense Nanofibrillar Collagenâ˜'Bioglass Hybrid Scaffolds. Biomacromolecules, 2010, 11, 1470-1479.	2.6	142
9	Soil Sensors and Plant Wearables for Smart and Precision Agriculture. Advanced Materials, 2021, 33, e2007764.	11.1	137
10	Directed assembly of bio-inspired hierarchical materials with controlled nanofibrillar architectures. Nature Nanotechnology, 2017, 12, 474-480.	15.6	134
11	Photocrosslinking of Silk Fibroin Using Riboflavin for Ocular Prostheses. Advanced Materials, 2016, 28, 2417-2420.	11.1	132
12	Engineering the Future of Silk Materials through Advanced Manufacturing. Advanced Materials, 2018, 30, e1706983.	11.1	126
13	Laser-based three-dimensional multiscale micropatterning of biocompatible hydrogels for customized tissue engineering scaffolds. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 12052-12057.	3.3	122
14	In vitro reactivity of Cu doped 45S5 BioglassÂ® derived scaffolds for bone tissue engineering. Journal of Materials Chemistry B, 2013, 1, 5659.	2.9	119
15	Silk fibroin derived polypeptide-induced biomineralization of collagen. Biomaterials, 2012, 33, 102-108.	5.7	118
16	Additive Manufacturing Approaches for Hydroxyapatiteâ€Reinforced Composites. Advanced Functional Materials, 2019, 29, 1903055.	7.8	109
17	Silkâ€Based Biocompatible Random Lasing. Advanced Optical Materials, 2016, 4, 998-1003.	3.6	90
18	Nanoscale probing of electron-regulated structural transitions in silk proteins by near-field IR imaging and nano-spectroscopy. Nature Communications, 2016, 7, 13079.	5.8	78

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19	Programming function into mechanical forms by directed assembly of silk bulk materials. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 451-456.	3.3	78
20	Electrospun Silk Fibroin Mats for Tissue Engineering. Engineering in Life Sciences, 2008, 8, 219-225.	2.0	71
21	Synthesis of Silk Fibroin Microâ€•and Submicron Spheres Using a Coâ€Flow Capillary Device. Advanced Materials, 2014, 26, 1105-1110.	11.1	68
22	Collagenâ€Reinforced Electrospun Silk Fibroin Tubular Construct as Small Calibre Vascular Graft. Macromolecular Bioscience, 2012, 12, 1566-1574.	2.1	65
23	Tissue-mimicking gelatin scaffolds by alginate sacrificial templates for adipose tissue engineering. Acta Biomaterialia, 2019, 87, 61-75.	4.1	65
24	Immediate production of a tubular dense collagen construct with bioinspired mechanical properties. Acta Biomaterialia, 2012, 8, 1813-1825.	4.1	61
25	Transparent, Nanostructured Silk Fibroin Hydrogels with Tunable Mechanical Properties. ACS Biomaterials Science and Engineering, 2015, 1, 964-970.	2.6	58
26	Osteoid-Mimicking Dense Collagen/Chitosan Hybrid Gels. Biomacromolecules, 2011, 12, 2946-2956.	2.6	57
27	An<i>In Vitro</i>Assessment of a Cell-Containing Collagenous Extracellular Matrixâ€“like Scaffold for Bone Tissue Engineering. Tissue Engineering - Part A, 2010, 16, 781-793.	1.6	56
28	Regulation of enamel hardness by its crystallographic dimensions. Acta Biomaterialia, 2012, 8, 3400-3410.	4.1	55
29	Trace elements can influence the physical properties of tooth enamel. SpringerPlus, 2013, 2, 499.	1.2	55
30	3D Functional Corneal Stromal Tissue Equivalent Based on Corneal Stromal Stem Cells and Multi-Layered Silk Film Architecture. PLoS ONE, 2017, 12, e0169504.	1.1	55
31	Fabrication of injectable, cellular, anisotropic collagen tissue equivalents with modular fibrillar densities. Biomaterials, 2015, 37, 183-193.	5.7	54
32	The role of enamel crystallography on tooth shade. Journal of Dentistry, 2011, 39, e3-e10.	1.7	53
33	Regenerated silk materials for functionalized silk orthopedic devices by mimicking natural processing. Biomaterials, 2016, 110, 24-33.	5.7	48
34	A Multilayered Edible Coating to Extend Produce Shelf Life. ACS Sustainable Chemistry and Engineering, 2020, 8, 14312-14321.	3.2	46
35	Real time responses of fibroblasts to plastically compressed fibrillar collagen hydrogels. Biomaterials, 2011, 32, 4761-4772.	5.7	44
36	A bioinspired approach to engineer seed microenvironment to boost germination and mitigate soil salinity. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 25555-25561.	3.3	44

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37	A Microneedle Technology for Sampling and Sensing Bacteria in the Food Supply Chain. Advanced Functional Materials, 2021, 31, .	7.8	44
38	Eco-friendly photolithography using water-developable pure silk fibroin. RSC Advances, 2016, 6, 39330-39334.	1.7	43
39	Newly identified interfibrillar collagen crosslinking suppresses cell proliferation and remodelling. Biomaterials, 2015, 54, 126-135.	5.7	41
40	Fibril formation pH controls intrafibrillar collagen biomineralization inÂvitro and inÂvivo. Biomaterials, 2015, 37, 252-259.	5.7	40
41	Gain-Based Mechanism for <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>p</mml:mi><mml:mtext>H</mml:mtext></mml:mrow></mml:math> Sensing Based on Random Lasing. Physical Review Applied, 2017, 7, .	1.5	39
42	The role of physiological mechanical cues on mesenchymal stem cell differentiation in an airway tract-like dense collagenâ€“silk fibroin construct. Biomaterials, 2014, 35, 6236-6247.	5.7	38
43	Fluorescent Nanodiamond Silk Fibroin Spheres: Advanced Nanoscale Bioimaging Tool. ACS Biomaterials Science and Engineering, 2015, 1, 1104-1113.	2.6	37
44	Collagen gel fibrillar density dictates the extent of mineralization in vitro. Soft Matter, 2011, 7, 9898.	1.2	34
45	Self-Perpetuating Carbon Foam Microwave Plasma Conversion of Hydrocarbon Wastes into Useful Fuels and Chemicals. Environmental Science & Technology, 2021, 55, 6239-6247.	4.6	34
46	Mesenchymal stem cellâ€seeded multilayered dense collagenâ€silk fibroin hybrid for tissue engineering applications. Biotechnology Journal, 2011, 6, 1198-1207.	1.8	33
47	Doxorubicin loaded nanodiamond-silk spheres for fluorescence tracking and controlled drug release. Biomedical Optics Express, 2016, 7, 132.	1.5	32
48	Artificial intelligence method to design and fold alpha-helical structural proteins from the primary amino acid sequence. Extreme Mechanics Letters, 2020, 36, 100652.	2.0	31
49	Fibroblast contractility and growth in plastic compressed collagen gel scaffolds with microstructures correlated with hydraulic permeability. Journal of Biomedical Materials Research - Part A, 2011, 96A, 609-620.	2.1	30
50	An airway smooth muscle cell niche under physiological pulsatile flow culture using a tubular dense collagen construct. Biomaterials, 2013, 34, 1954-1966.	5.7	29
51	Precision Delivery of Multiscale Payloads to Tissueâ€Specific Targets in Plants. Advanced Science, 2020, 7, 1903551.	5.6	29
52	Engineering the Plant Microenvironment To Facilitate Plant-Growth-Promoting Microbe Association. Journal of Agricultural and Food Chemistry, 2021, 69, 13270-13285.	2.4	29
53	Rapid fabrication of silk films with controlled architectures via electrogelation. Journal of Materials Chemistry B, 2014, 2, 4983.	2.9	28
54	Multilayered dense collagen-silk fibroin hybrid: a platform for mesenchymal stem cell differentiation towards chondrogenic and osteogenic lineages. Journal of Tissue Engineering and Regenerative Medicine, 2017, 11, 2046-2059.	1.3	27

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55	Polypeptide templating for designer hierarchical materials. Nature Communications, 2020, 11, 351.	5.8	27
56	Methods and Applications of Multilayer Silk Fibroin Laminates Based on Spatially Controlled Welding in Protein Films. Advanced Functional Materials, 2016, 26, 44-50.	7.8	26
57	Stabilization of Amorphous Calcium Carbonate with Nanofibrillar Biopolymers. Advanced Functional Materials, 2012, 22, 3460-3469.	7.8	25
58	Modulation of polycaprolactone composite properties through incorporation of mixed phosphate glass formulations. Acta Biomaterialia, 2010, 6, 3157-3168.	4.1	23
59	Cashmere-derived keratin for device manufacturing on the micro- and nanoscale. Journal of Materials Chemistry C, 2015, 3, 2783-2787.	2.7	22
60	Programmable design of seed coating function induces water-stress tolerance in semi-arid regions. Nature Food, 2021, 2, 485-493.	6.2	21
61	Enhanced photoluminescence of Si nanocrystals-doped cellulose nanofibers by plasmonic light scattering. Applied Physics Letters, 2015, 107, .	1.5	18
62	Anionic fibroin-derived polypeptides accelerate MSC osteoblastic differentiation in a three-dimensional osteoid-like dense collagen niche. Journal of Materials Chemistry B, 2014, 2, 5339.	2.9	16
63	Silk fibroin hydroxyapatite composite thermal stabilisation of carbonic anhydrase. Journal of Materials Chemistry A, 2015, 3, 19282-19287.	5.2	16
64	Coâ€Assembly of Cellulose Nanocrystals and Silk Fibroin into Photonic Cholesteric Films. Advanced Sustainable Systems, 2021, 5, 2000272.	2.7	14
65	Electrospun silk fibroin tubular matrixes for small vessel bypass grafting. Materials Technology, 2009, 24, 52-57.	1.5	13
66	Determination of multiphoton absorption of silk fibroin using the Z-scan technique. Optics Express, 2013, 21, 29637.	1.7	13
67	Photonic paper: Multiscale assembly of reflective cellulose sheets in <i>Lunaria annua</i>. Science Advances, 2020, 6, .	4.7	13
68	Biomaterials Technology for AgroFood Resilience. Advanced Functional Materials, 2022, 32, .	7.8	12
69	Growing silk fibroin in advanced materials for food security. MRS Communications, 2021, 11, 31-45.	0.8	11
70	Poly(d,l-Lactic acid) Composite Foams Containing Phosphate Glass Particles Produced via Solid-State Foaming Using CO2 for Bone Tissue Engineering Applications. Polymers, 2020, 12, 231.	2.0	10
71	Silk: A Different Kind of â€œFiber Opticsâ€• Optics and Photonics News, 2014, 25, 28.	0.4	9
72	Regulated fracture in tooth enamel: A nanotechnological strategy from nature. Journal of Biomechanics, 2014, 47, 2444-2451.	0.9	9

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73	Biomaterials for boosting food security. Science, 2022, 376, 146-147.	6.0	9
74	Microencapsulation of Highâ€Content Actives Using Biodegradable Silk Materials. Small, 2022, 18, .	5.2	9
75	Towards the fabrication of biohybrid silk fibroin materials: entrapment and preservation of chloroplast organelles in silk fibroin films. RSC Advances, 2016, 6, 72366-72370.	1.7	7
76	Silk Fibroin: Photocrosslinking of Silk Fibroin Using Riboflavin for Ocular Prostheses (Adv. Mater.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 6	11.1	6
77	Smart Agriculture Systems: Soil Sensors and Plant Wearables for Smart and Precision Agriculture (Adv. Mater. 20/2021). Advanced Materials, 2021, 33, 2170156.	11.1	6
78	Bioformulation of Silk-Based Coating to Preserve and Deliver Rhizobium tropici to Phaseolus vulgaris Under Saline Environments. Frontiers in Plant Science, 2021, 12, 700273.	1.7	5
79	Fully implantable and resorbable wireless medical devices for postsurgical infection abatement. , 2015, , .		2
80	Plant Microbiome Modulation Through Seed Coating: A Novel Approach for a Smart and Efficient Microbial Delivery. Rhizosphere Biology, 2022, , 213-234.	0.4	2
81	Silk Materials: Engineering the Future of Silk Materials through Advanced Manufacturing (Adv. Mater.) Tj ETQq1 1 0.784314 rgBT /Overl	11.1	1
82	Mineralization of nanomaterials for bone tissue engineering. , 2013, , 387-416.		0
83	Collagen-based tubular constructs for tissue engineering applications. , 2014, , 589-632.		0
84	3D Laser Ablation of Biocompatible Silk Fibroin Hydrogels for Biomedical Applications. , 2015, , .		0
85	Inkjet printing of functionalized silk proteins for enhanced stability and colorimetric bacterial sensing applications. , 2015, , .		0