Matthew J Harrington

List of Publications by Year
in descending order

44 papers	4,586 citations	186265 28 h-index	243625 44 g-index
48 all docs	48 docs citations	48 times ranked	4538 citing authors

#	Article	IF	Citations
1	pH-induced metal-ligand cross-links inspired by mussel yield self-healing polymer networks with near-covalent elastic moduli. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 2651-2655.	7.1	1,314
2	Iron-Clad Fibers: A Metal-Based Biological Strategy for Hard Flexible Coatings. Science, 2010, 328, 216-220.	12.6	838
3	The Mechanical Role of Metal Ions in Biogenic Proteinâ€Based Materials. Angewandte Chemie - International Edition, 2014, 53, 12026-12044.	13.8	229
4	Protein- and Metal-dependent Interactions of a Prominent Protein in Mussel Adhesive Plaques. Journal of Biological Chemistry, 2010, 285, 25850-25858.	3.4	227
5	Metal-coordination: using one of nature's tricks to control soft material mechanics. Journal of Materials Chemistry B, 2014, 2, 2467-2472.	5.8	178
6	Holdfast heroics: comparing the molecular and mechanical properties of<i>Mytilus californianus</i>byssal threads. Journal of Experimental Biology, 2007, 210, 4307-4318.	1.7	152
7	Rapid self-assembly of complex biomolecular architectures during mussel byssus biofabrication. Nature Communications, 2017, 8, 14539.	12.8	148
8	Collagen insulated from tensile damage by domains that unfold reversibly: In situ X-ray investigation of mechanical yield and damage repair in the mussel byssus. Journal of Structural Biology, 2009, 167, 47-54.	2.8	125
9	Microfluidic-like fabrication of metal ionâ€“cured bioadhesives by mussels. Science, 2021, 374, 206-211.	12.6	119
10	Role of Sacrificial Proteinâ€“Metal Bond Exchange in Mussel Byssal Thread Self-Healing. Biomacromolecules, 2015, 16, 2852-2861.	5.4	95
11	Reorientation of Cellulose Nanowhiskers in Agarose Hydrogels under Tensile Loading. Biomacromolecules, 2012, 13, 850-856.	5.4	91
12	Metal-Mediated Molecular Self-Healing in Histidine-Rich Mussel Peptides. Biomacromolecules, 2014, 15, 1644-1652.	5.4	75
13	Self-Repair of a Biological Fiber Guided by an Ordered Elastic Framework. Biomacromolecules, 2013, 14, 1520-1528.	5.4	69
14	pH-Dependent Locking of Giant Mesogens in Fibers Drawn from Mussel Byssal Collagens. Biomacromolecules, 2008, 9, 1480-1486.	5.4	67
15	Self-healing response in supramolecular polymers based on reversible zincâ€“histidine interactions. Polymer, 2015, 69, 274-282.	3.8	66
16	Healing through Histidine: Bioinspired Pathways to Self-Healing Polymers via Imidazoleâ€“Metal Coordination. Biomimetics, 2019, 4, 20.	3.3	63
17	How Nature Modulates a Fiber's Mechanical Properties: Mechanically Distinct Fibers Drawn from Natural Mesogenic Block Copolymer Variants. Advanced Materials, 2009, 21, 440-444.	21.0	58
18	Cooperative behavior of a sacrificial bond network and elastic framework in providing self-healing capacity in mussel byssal threads. Journal of Structural Biology, 2016, 196, 329-339.	2.8	54

#	Article	IF	Citations
19	Metal-Tunable Self-Assembly of Hierarchical Structure in Mussel-Inspired Peptide Films. ACS Nano, 2018, 12, 2160-2168.	14.6	50
20	Mussel Byssus Structureâ€Function and Fabrication as Inspiration for Biotechnological Production of Advanced Materials. Biotechnology Journal, 2018, 13, e1800133.	3.5	44
21	Compartmentalized processing of catechols during mussel byssus fabrication determines the destiny of DOPA. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 7613-7621.	7.1	42
22	Hierarchically-structured metalloprotein composite coatings biofabricated from co-existing condensed liquid phases. Nature Communications, 2020, 11, 862.	12.8	41
23	Mechanical homeostasis of a DOPA-enriched biological coating from mussels in response to metal variation. Journal of the Royal Society Interface, 2015, 12, 20150466.	3.4	40
24	Biological Archetypes for Self-Healing Materials. Advances in Polymer Science, 2015, , 307-344.	0.8	36
25	Pseudoelastic behaviour of a natural material is achieved via reversible changes in protein backbone conformation. Journal of the Royal Society Interface, 2012, 9, 2911-2922.	3.4	35
26	Mechanoresponsive lipid-protein nanoglobules facilitate reversible fibre formation in velvet worm slime. Nature Communications, 2017, 8, 974.	12.8	35
27	pHâ€Responsive Selfâ€Organization of Metalâ€Binding Protein Motifs from Biomolecular Junctions in Mussel Byssus. Advanced Materials Interfaces, 2017, 4, 1600416.	3.7	35
28	Natural load-bearing protein materials. Progress in Materials Science, 2021, 120, 100767.	32.8	31
29	Shear-Induced Î²-Crystallite Unfolding in Condensed Phase Nanodroplets Promotes Fiber Formation in a Biological Adhesive. ACS Nano, 2019, 13, 4992-5001.	14.6	27
30	Catechol-Vanadium Binding Enhances Cross-Linking and Mechanics of a Mussel Byssus Coating Protein. Chemistry of Materials, 2021, 33, 6530-6540.	6.7	27
31	Exploring mussel byssus fabrication with peptide-polymer hybrids: Role of pH and metal coordination in self-assembly and mechanics of histidine-rich domains. European Polymer Journal, 2018, 109, 229-236.	5.4	26
32	Reversible Supramolecular Assembly of Velvet Worm Adhesive Fibers via Electrostatic Interactions of Charged Phosphoproteins. Biomacromolecules, 2018, 19, 4034-4043.	5.4	22
33	A new twist on sea silk: the peculiar protein ultrastructure of fan shell and pearl oyster byssus. Soft Matter, 2018, 14, 5654-5664.	2.7	21
34	Fiber Formation from Liquid Crystalline Collagen Vesicles Isolated from Mussels. Langmuir, 2019, 35, 15992-16001.	3.5	13
35	Structure and composition of the tunic in the sea pineapple Halocynthia roretzi: A complex cellulosic composite biomaterial. Acta Biomaterialia, 2020, 111, 290-301.	8.3	13
36	Fibers on the Fly: Multiscale Mechanisms of Fiber Formation in the Capture Slime of Velvet Worms. Integrative and Comparative Biology, 2019, 59, 1690-1699.	2.0	12

#	ARTICLE	IF	CITATIONS
37	Comparative Animal Mucomics: Inspiration for Functional Materials from Ubiquitous and Understudied Biopolymers. ACS Biomaterials Science and Engineering, 2020, 6, 5377-5398.	5.2	12
38	Collagen Pentablock Copolymers Form Smectic Liquid Crystals as Precursors for Mussel Byssus Fabrication. ACS Nano, 2021, 15, 6829-6838.	14.6	12
39	Unraveling the Rapid Assembly Process of Stiff Cellulosic Fibers from Mistletoe Berries. Biomacromolecules, 2019, 20, 3094-3103.	5.4	11
40	Following the thread: <i>Mytilus</i> mussel byssus as an inspired multi-functional biomaterial. Canadian Journal of Chemistry, 2022, 100, 197-211.	1.1	7
41	Self-healing silk from the sea: role of helical hierarchical structure in<i>Pinna nobilis</i>byssus mechanics. Soft Matter, 2019, 15, 9654-9664.	2.7	6
42	From vesicles to materials: bioinspired strategies for fabricating hierarchically structured soft matter. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200338.	3.4	6
43	Extracellular Secretion and Simple Purification of Bacterial Collagen from <i>Escherichia coli</i>. Biomacromolecules, 2022, 23, 1557-1568.	5.4	5
44	Mistletoe viscin: a hygro- and mechano-responsive cellulose-based adhesive for diverse material applications. , 2022, 1, .		5