

Ali Miserez

List of Publications by Year in descending order

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112
papers

6,068
citations

66234

42
h-index

76769

74
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122
all docs

122
docs citations

122
times ranked

6630
citing authors

#	ARTICLE	IF	CITATIONS
1	The Stomatopod Dactyl Club: A Formidable Damage-Tolerant Biological Hammer. <i>Science</i> , 2012, 336, 1275-1280.	6.0	648
2	Preventing mussel adhesion using lubricant-infused materials. <i>Science</i> , 2017, 357, 668-673.	6.0	375
3	The Transition from Stiff to Compliant Materials in Squid Beaks. <i>Science</i> , 2008, 319, 1816-1819.	6.0	362
4	Accelerating the design of biomimetic materials by integrating RNA-seq with proteomics and materials science. <i>Nature Biotechnology</i> , 2013, 31, 908-915.	9.4	171
5	Analysis of an ultra hard magnetic biomineral in chiton radular teeth. <i>Materials Today</i> , 2010, 13, 42-52.	8.3	166
6	An Underwater Surface-€Drying Peptide Inspired by a Mussel Adhesive Protein. <i>Advanced Functional Materials</i> , 2016, 26, 3496-3507.	7.8	163
7	Infiltration of chitin by protein coacervates defines the squid beak mechanical gradient. <i>Nature Chemical Biology</i> , 2015, 11, 488-495.	3.9	148
8	Mussel adhesion is dictated by time-regulated secretion and molecular conformation of mussel adhesive proteins. <i>Nature Communications</i> , 2015, 6, 8737.	5.8	144
9	White Light-Emitting Multistimuli-Responsive Hydrogels with Lanthanides and Carbon Dots. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 10409-10418.	4.0	133
10	Effects of Laminate Architecture on Fracture Resistance of Sponge Biosilica: Lessons from Nature. <i>Advanced Functional Materials</i> , 2008, 18, 1241-1248.	7.8	132
11	The role of quasi-plasticity in the extreme contact damage tolerance of the stomatopod dactyl club. <i>Nature Materials</i> , 2015, 14, 943-950.	13.3	128
12	Phase-separating peptides for direct cytosolic delivery and redox-activated release of macromolecular therapeutics. <i>Nature Chemistry</i> , 2022, 14, 274-283.	6.6	117
13	Jumbo squid beaks: Inspiration for design of robust organic composites. <i>Acta Biomaterialia</i> , 2007, 3, 139-149.	4.1	110
14	A Double-€Layer Mechanochromic Hydrogel with Multidirectional Force Sensing and Encryption Capability. <i>Advanced Functional Materials</i> , 2019, 29, 1808191.	7.8	109
15	Hydrogen bond guidance and aromatic stacking drive liquid-liquid phase separation of intrinsically disordered histidine-rich peptides. <i>Nature Communications</i> , 2019, 10, 5465.	5.8	105
16	Textured fluorapatite bonded to calcium sulphate strengthen stomatopod raptorial appendages. <i>Nature Communications</i> , 2014, 5, 3187.	5.8	103
17	Microstructural and Biochemical Characterization of the Nanoporous Sucker Rings from <i>Dosidicus gigas</i> . <i>Advanced Materials</i> , 2009, 21, 401-406.	11.1	91
18	Property maps for abrasion resistance of materials. <i>Acta Materialia</i> , 2007, 55, 6365-6371.	3.8	89

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19	Nanoconfined β -Sheets Mechanically Reinforce the Supra-Biomolecular Network of Robust Squid Sucker Ring Teeth. <i>ACS Nano</i> , 2014, 8, 7170-7179.	7.3	88
20	Cross-linking Chemistry of Squid Beak. <i>Journal of Biological Chemistry</i> , 2010, 285, 38115-38124.	1.6	86
21	Non-entropic and reversible long-range deformation of an encapsulating bioelastomer. <i>Nature Materials</i> , 2009, 8, 910-916.	13.3	82
22	Wear and abrasion resistance selection maps of biological materials. <i>Acta Biomaterialia</i> , 2013, 9, 7895-7907.	4.1	80
23	Bioinspired pH and magnetic responsive catechol-functionalized chitosan hydrogels with tunable elastic properties. <i>Chemical Communications</i> , 2016, 52, 697-700.	2.2	79
24	Thermal-Disrupting Interface Mitigates Intercellular Cohesion Loss for Accurate Topical Antibacterial Therapy. <i>Advanced Materials</i> , 2020, 32, e1907030.	11.1	75
25	Catechol-Functionalized Chitosan/Iron Oxide Nanoparticle Composite Inspired by Mussel Thread Coating and Squid Beak Interfacial Chemistry. <i>Langmuir</i> , 2013, 29, 10899-10906.	1.6	69
26	Time-Resolved Observations of Liquid-Liquid Phase Separation at the Nanoscale Using <i>in Situ</i> Liquid Transmission Electron Microscopy. <i>Journal of the American Chemical Society</i> , 2019, 141, 7202-7210.	6.6	69
27	From Soft Self-Healing Gels to Stiff Films in Suckerin-Based Materials Through Modulation of Crosslink Density and β -Sheet Content. <i>Advanced Materials</i> , 2015, 27, 3953-3961.	11.1	68
28	Bio-Inspired Mechanotactic Hybrids for Orchestrating Traction-Mediated Epithelial Migration. <i>Advanced Materials</i> , 2016, 28, 3102-3110.	11.1	66
29	Size effects and shape memory properties in ZrO ₂ ceramic micro- and nano-pillars. <i>Scripta Materialia</i> , 2015, 101, 40-43.	2.6	64
30	The Mantis Shrimp Saddle: A Biological Spring Combining Stiffness and Flexibility. <i>Advanced Functional Materials</i> , 2015, 25, 6437-6447.	7.8	61
31	Green biolubricant infused slippery surfaces to combat marine biofouling. <i>Journal of Colloid and Interface Science</i> , 2020, 568, 185-197.	5.0	59
32	Glucose-Responsive Peptide Coacervates with High Encapsulation Efficiency for Controlled Release of Insulin. <i>Bioconjugate Chemistry</i> , 2018, 29, 2176-2180.	1.8	57
33	Phase transition-induced elasticity of β -helical bioelastomeric fibres and networks. <i>Chemical Society Reviews</i> , 2013, 42, 1973-1995.	18.7	56
34	Mineral minimization in nature's alternative teeth. <i>Journal of the Royal Society Interface</i> , 2007, 4, 19-31.	1.5	55
35	Multi-scale thermal stability of a hard thermoplastic protein-based material. <i>Nature Communications</i> , 2015, 6, 8313.	5.8	54
36	Squid Sucker Ring Teeth: Multiscale Structure-Property Relationships, Sequencing, and Protein Engineering of a Thermoplastic Biopolymer. <i>ACS Biomaterials Science and Engineering</i> , 2017, 3, 680-693.	2.6	53

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37	Diverse Strategies of Protein Sclerotization in Marine Invertebrates. <i>Advances in Insect Physiology</i> , 2010, 38, 75-133.	1.1	52
38	Supramolecular β -Sheets Stabilized Protein Nanocarriers for Drug Delivery and Gene Transfection. <i>ACS Nano</i> , 2017, 11, 4528-4541.	7.3	52
39	Self-coacervation of modular squid beak proteins – a comparative study. <i>Soft Matter</i> , 2017, 13, 7740-7752.	1.2	52
40	Biomimetic Production of Silk-Like Recombinant Squid Sucker Ring Teeth Proteins. <i>Biomacromolecules</i> , 2014, 15, 3278-3289.	2.6	49
41	Biological materials and molecular biomimetics – filling up the empty soft materials space for tissue engineering applications. <i>Journal of Materials Chemistry B</i> , 2015, 3, 13-24.	2.9	49
42	Particle reinforced metals of high ceramic content. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2004, 387-389, 822-831.	2.6	45
43	Complex coacervates of oppositely charged co-polypeptides inspired by the sandcastle worm glue. <i>Journal of Materials Chemistry B</i> , 2016, 4, 1544-1556.	2.9	42
44	Magnetically responsive peptide coacervates for dual hyperthermia and chemotherapy treatments of liver cancer. <i>Acta Biomaterialia</i> , 2020, 110, 221-230.	4.1	42
45	Structural, Nanomechanical, and Computational Characterization of α -Cyclic Peptide Assemblies. <i>ACS Nano</i> , 2015, 9, 3360-3368.	7.3	39
46	Supramolecular β -Sheet Suckerin-Based Underwater Adhesives. <i>Advanced Functional Materials</i> , 2020, 30, 1907534.	7.8	39
47	Fracture of aluminium reinforced with densely packed ceramic particles: link between the local and the total work of fracture. <i>Acta Materialia</i> , 2004, 52, 1337-1351.	3.8	38
48	Pressure Sensitive Adhesion of an Elastomeric Protein Complex Extracted From Squid Ring Teeth. <i>Advanced Functional Materials</i> , 2014, 24, 6227-6233.	7.8	38
49	Parrotfish Teeth: Stiff Biominerals Whose Microstructure Makes Them Tough and Abrasion-Resistant To Bite Stony Corals. <i>ACS Nano</i> , 2017, 11, 11856-11865.	7.3	37
50	Fracture of aluminium reinforced with densely packed ceramic particles: influence of matrix hardening. <i>Acta Materialia</i> , 2004, 52, 5331-5345.	3.8	36
51	Unifying Design Strategies in Demosponge and Hexactinellid Skeletal Systems. <i>Journal of Adhesion</i> , 2010, 86, 72-95.	1.8	36
52	A Short Peptide Hydrogel with High Stiffness Induced by 3×10^4 Helices to β -Sheet Transition in Water. <i>Advanced Science</i> , 2019, 6, 1901173.	5.6	36
53	Engineering bioinspired bacteria-adhesive clay nanoparticles with a membrane-disruptive property for the treatment of <i>Helicobacter pylori</i> infection. <i>Nanoscale</i> , 2016, 8, 16486-16498.	2.8	33
54	A diecast mineralization process forms the tough mantis shrimp dactyl club. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 8685-8692.	3.3	33

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55	Orientational Coupling Locally Orchestrates a Cell Migration Pattern for Re-epithelialization. <i>Advanced Materials</i> , 2017, 29, 1700145.	11.1	33
56	Liquid-liquid Phase Separation of the Green Mussel Adhesive Protein Pvfp-5 is Regulated by the Post-translated Dopa Amino Acid. <i>Advanced Materials</i> , 2022, 34, e2103828.	11.1	32
57	Investigation of crack-tip plasticity in high volume fraction particulate metal matrix composites. <i>Engineering Fracture Mechanics</i> , 2004, 71, 2385-2406.	2.0	31
58	Biomechanical Design of the Mantis Shrimp Saddle: A Biomineralized Spring Used for Rapid Raptorial Strikes. <i>iScience</i> , 2018, 8, 271-282.	1.9	31
59	Squid suckerin microneedle arrays for tunable drug release. <i>Journal of Materials Chemistry B</i> , 2017, 5, 8467-8478.	2.9	30
60	Self-Assembly of Recombinant Hagfish Thread Keratins Amenable to a Strain-Induced β -Helix to β -Sheet Transition. <i>Biomacromolecules</i> , 2015, 16, 2327-2339.	2.6	29
61	Modular peptides from the thermoplastic squid sucker ring teeth form amyloid-like cross- β supramolecular networks. <i>Acta Biomaterialia</i> , 2016, 46, 41-54.	4.1	29
62	Controlling Supramolecular Chiral Nanostructures by Self-Assembly of a Biomimetic β -Sheet-Rich Amyloidogenic Peptide. <i>ACS Nano</i> , 2018, 12, 9152-9161.	7.3	28
63	Fabrication of a 3D hair follicle-like hydrogel by soft lithography. <i>Journal of Biomedical Materials Research - Part A</i> , 2013, 101, 3159-3169.	2.1	27
64	Artificial hagfish protein fibers with ultra-high and tunable stiffness. <i>Nanoscale</i> , 2017, 9, 12908-12915.	2.8	24
65	Adhesive Properties of Adsorbed Layers of Two Recombinant Mussel Foot Proteins with Different Levels of DOPA and Tyrosine. <i>Langmuir</i> , 2019, 35, 15481-15490.	1.6	23
66	Three-dimensional structure of <i>Megabalanus rosa</i> Cement Protein 20 revealed by multi-dimensional NMR and molecular dynamics simulations. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2019, 374, 20190198.	1.8	22
67	Bioinspired Functionally Graded Composite Assembled Using Cellulose Nanocrystals and Genetically Engineered Proteins with Controlled Biomineralization. <i>Advanced Materials</i> , 2021, 33, e2102658.	11.1	22
68	Squid Suckerin Biomimetic Peptides Form Amyloid-like Crystals with Robust Mechanical Properties. <i>Biomacromolecules</i> , 2017, 18, 4240-4248.	2.6	21
69	Liquid-liquid Phase Separation of Short Histidine- and Tyrosine-Rich Peptides: Sequence Specificity and Molecular Topology. <i>Journal of Physical Chemistry B</i> , 2021, 125, 6776-6790.	1.2	21
70	Liquid-liquid phase separation of proteins and peptides derived from biological materials: Discovery, protein engineering, and emerging applications. <i>MRS Bulletin</i> , 2020, 45, 1039-1047.	1.7	21
71	Four-Stranded Coiled-Coil Elastic Protein in the Byssus of the Giant Clam, <i>Tridacna maxima</i> . <i>Biomacromolecules</i> , 2012, 13, 332-341.	2.6	20
72	Bioinspired short peptide hydrogel for versatile encapsulation and controlled release of growth factor therapeutics. <i>Acta Biomaterialia</i> , 2021, 136, 111-123.	4.1	20

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73	Influence of heat treatment and particle shape on mechanical properties of infiltrated Al ₂ O ₃ particle reinforced Al-2 wt-%Cu. <i>Materials Science and Technology</i> , 2002, 18, 1461-1470.	0.8	19
74	Layer-by-Layer Polyelectrolyte Deposition: A Mechanism for Forming Biocomposite Materials. <i>Biomacromolecules</i> , 2013, 14, 1715-1726.	2.6	18
75	Structural Proteins from Whelk Egg Capsule with Long Range Elasticity Associated with a Solid-State Phase Transition. <i>Biomacromolecules</i> , 2014, 15, 30-42.	2.6	17
76	Increasing the Strength/Toughness Combination of High Volume Fraction Particulate Metal Matrix Composites using an Al-Ag Matrix Alloy. <i>Advanced Engineering Materials</i> , 2006, 8, 56-62.	1.6	16
77	The role of water on the structure and mechanical properties of a thermoplastic natural block co-polymer from squid sucker ring teeth. <i>Bioinspiration and Biomimetics</i> , 2016, 11, 055003.	1.5	16
78	Multi-scale structural design and biomechanics of the pistol shrimp snapper claw. <i>Acta Biomaterialia</i> , 2018, 73, 449-457.	4.1	15
79	Disorder-Order Interplay of a Barnacle Cement Protein Triggered by Interactions with Calcium and Carbonate Ions: A Molecular Dynamics Study. <i>Chemistry of Materials</i> , 2020, 32, 8845-8859.	3.2	15
80	Supramolecular propensity of suckerin proteins is driven by β -sheets and aromatic interactions as revealed by solution NMR. <i>Biomaterials Science</i> , 2018, 6, 2440-2447.	2.6	14
81	Laboratory and Field Testing Assessment of Next Generation Biocide-Free, Fouling-Resistant Slippery Coatings. <i>ACS Applied Polymer Materials</i> , 2020, 2, 5147-5162.	2.0	14
82	Protein-Based Encapsulation Strategies: Toward Micro- and Nanoscale Carriers with Increased Functionality. <i>Small Science</i> , 2022, 2, .	5.8	13
83	Robust and Long-Term Cellular Protein and Enzymatic Activity Preservation in Biomineralized Mammalian Cells. <i>ACS Nano</i> , 2022, 16, 2164-2175.	7.3	13
84	Stable Formation of Gold Nanoparticles onto Redox-Active Solid Biosubstrates Made of Squid Suckerin Proteins. <i>Macromolecular Rapid Communications</i> , 2015, 36, 1877-1883.	2.0	12
85	Properties and architecture of the sperm whale skull amphitheatre. <i>Zoology</i> , 2016, 119, 42-51.	0.6	12
86	Catechol-modified green fluorescent protein as a specific biosensor for Al ions. <i>Sensors and Actuators B: Chemical</i> , 2017, 251, 326-333.	4.0	12
87	Biomimetic self-assembly of recombinant marine snail egg capsule proteins into structural coiled-coil units. <i>Journal of Materials Chemistry B</i> , 2015, 3, 2671-2684.	2.9	11
88	l-Lysine templated CaCO ₃ precipitated to flax develops flowery crystal structures that improve the mechanical properties of natural fibre reinforced composites. <i>Composites Part A: Applied Science and Manufacturing</i> , 2015, 75, 84-88.	3.8	11
89	Fracture toughness of the stomatopod dactyl club is enhanced by plastic dissipation: A fracture micromechanics study. <i>Acta Biomaterialia</i> , 2021, 126, 339-349.	4.1	10
90	Nanocapsules Produced by Nanoprecipitation of Designed Suckerin-Silk Fusion Proteins. <i>ACS Macro Letters</i> , 2021, 10, 628-634.	2.3	10

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91	In vivo liquid-liquid phase separation protects amyloidogenic and aggregation-prone peptides during overexpression in <i>Escherichia coli</i> . <i>Protein Science</i> , 2022, 31, e4292.	3.1	10
92	Accelerated corrosion of marine-grade steel by a redox-active, cysteine-rich barnacle cement protein. <i>Npj Materials Degradation</i> , 2020, 4, .	2.6	9
93	Self-Assembly of a Barnacle Cement Protein (MrCP20) into Adhesive Nanofibrils with Concomitant Regulation of CaCO ₃ Polymorphism. <i>Chemistry of Materials</i> , 2021, 33, 9715-9724.	3.2	9
94	Complete Sequences of the Velvet Worm Slime Proteins Reveal that Slime Formation is Enabled by Disulfide Bonds and Intrinsically Disordered Regions. <i>Advanced Science</i> , 2022, 9, e2201444.	5.6	9
95	Synthesis of biomimetic co-polypeptides with tunable degrees of phosphorylation. <i>Polymer Chemistry</i> , 2014, 5, 1351-1361.	1.9	8
96	Integrative and comparative analysis of coiled-coil based marine snail egg cases – a model for biomimetic elastomers. <i>Biomaterials Science</i> , 2014, 2, 710.	2.6	7
97	Interplay between Interfacial Energy, Contact Mechanics, and Capillary Forces in EGaIn Droplets. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 28074-28084.	4.0	6
98	Environmental impact on the mechanical properties of <i>Porites</i> spp. corals. <i>Coral Reefs</i> , 2021, 40, 701-717.	0.9	5
99	Integrating Materials and Life Sciences Toward the Engineering of Biomimetic Materials. <i>Jom</i> , 2012, 64, 494-504.	0.9	4
100	Hierarchical Assembly of Tough Bioelastomeric Egg Capsules is Mediated by a Bundling Protein. <i>Biomacromolecules</i> , 2017, 18, 931-942.	2.6	4
101	Minimal Reconstitution of Membranous Web Induced by a Vesicle-Peptide Sol-Gel Transition. <i>Biomacromolecules</i> , 2019, 20, 1709-1718.	2.6	4
102	Structure of a consensus chitin-binding domain revealed by solution NMR. <i>Journal of Structural Biology</i> , 2021, 213, 107725.	1.3	4
103	Structural Metallic Materials by Infiltration. , 2004, , 379-390.		4
104	Fast and Green Synthesis of an Oligo-Hydrocaffeic Acid-Based Adhesive. <i>ACS Omega</i> , 2018, 3, 18911-18916.	1.6	3
105	Inside Front Cover: Effects of Laminate Architecture on Fracture Resistance of Sponge Biosilica: Lessons from Nature (Adv. Funct. Mater. 8/2008). <i>Advanced Functional Materials</i> , 2008, 18, 1146-1146.	7.8	2
106	Squid's Suckerin Proteins in Bits & Bytes. <i>Biophysical Journal</i> , 2016, 110, 341a.	0.2	2
107	Sucker Rings from the Humboldt Squid <i>Dosidicus gigas</i> : The Role of Nanotubule Architecture on the Mechanical Properties. <i>Materials Research Society Symposia Proceedings</i> , 2009, 1187, 1.	0.1	0
108	50 Years of Biomaterials Research in Singapore. , 2016, , 157-177.		0

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109	Squid sucker teeth proteins: From basic discovery to multi-functional materials of a thermoplastic biopolymer. <i>Frontiers in Bioengineering and Biotechnology</i> , 0, 4, .	2.0	0
110	Fracture Toughness of the Stomatopod Dactyl Club is Enhanced by Plastic Dissipation: A Fracture Micromechanics Study. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0
111	Cephalopod-Mimetic Tunable Photonic Coatings Assembled from Quasi-Monodispersed Reflectin Protein Nanoparticles. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 21436-21452.	4.0	0
112	Nanolattice-Forming Hybrid Collagens in Protective Shark Egg Cases. <i>Biomacromolecules</i> , 2022, 23, 2878-2890.	2.6	0