Manuel Elices

List of Publications by Year
in descending order

114 papers	3,883 citations	101384 36 h-index	138251 58 g-index
121 all docs	121 docs citations	121 times ranked	2392 citing authors

#	Article	IF	Citations
1	Local strain energy to assess the static failure of U-notches in plates under mixed mode loading. International Journal of Fracture, 2007, 145, 29-45.	1.1	176
2	Fracture assessment of U-notches under mixed mode loading: two procedures based on the â€˜equivalent local mode Iâ€™ concept. International Journal of Fracture, 2007, 148, 415-433.	1.1	147
3	Effect of aggregate size on the fracture and mechanical properties of a simple concrete. Engineering Fracture Mechanics, 2008, 75, 3839-3851.	2.0	135
4	Effect of aggregate shape on the mechanical properties of a simple concrete. Engineering Fracture Mechanics, 2009, 76, 286-298.	2.0	134
5	Brittle failures from Uâ€•and Vâ€notches in mode I and mixed, I + II, mode: a synthesis based on the strain energy density averaged on finiteâ€size volumes. Fatigue and Fracture of Engineering Materials and Structures, 2009, 32, 671-684.	1.7	133
6	Failure criteria for linear elastic materials with U-notches. International Journal of Fracture, 2006, 141, 99-113.	1.1	121
7	Fracture of V-notched specimens under mixed mode (I + II) loading in brittle materials. International Journal of Fracture, 2009, 159, 121-135.	1.1	121
8	Nonlinear fracture of cohesive materials. International Journal of Fracture, 1991, 51, 139-157.	1.1	103
9	KI evaluation by the displacement extrapolation technique. Engineering Fracture Mechanics, 2000, 66, 243-255.	2.0	97
10	Fracture of U-notched specimens under mixed mode: Experimental results and numerical predictions. Engineering Fracture Mechanics, 2009, 76, 236-249.	2.0	97
11	Thermo-hygro-mechanical behavior of spider dragline silk: Glassy and rubbery states. Journal of Polymer Science, Part B: Polymer Physics, 2006, 44, 994-999.	2.4	92
12	Fracture behaviour of notched round bars made of PMMA subjected to torsion at â^’60Â°C. Engineering Fracture Mechanics, 2013, 102, 271-287.	2.0	92
13	A generalised notch stress intensity factor for U-notched components loaded under mixed mode. Engineering Fracture Mechanics, 2008, 75, 4819-4833.	2.0	89
14	Safety and tolerability of silk fibroin hydrogels implanted into the mouse brain. Acta Biomaterialia, 2016, 45, 262-275.	4.1	86
15	Volume Constancy during Stretching of Spider Silk. Biomacromolecules, 2006, 7, 2173-2177.	2.6	83
16	Relationship between microstructure and mechanical properties in spider silk fibers: identification of two regimes in the microstructural changes. Soft Matter, 2012, 8, 6015.	1.2	82
17	Sequential origin in the high performance properties of orb spider dragline silk. Scientific Reports, 2012, 2, 782.	1.6	80
18	Fracture of model concrete: 2. Fracture energy and characteristic length. Cement and Concrete Research, 2006, 36, 1345-1353.	4.6	79

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19	Fracture behaviour of notched round bars made of PMMA subjected to torsion at room temperature. Engineering Fracture Mechanics, 2012, 90, 143-160.	2.0	79
20	The hidden link between supercontraction and mechanical behavior of spider silks. Journal of the Mechanical Behavior of Biomedical Materials, 2011, 4, 658-669.	1.5	75
21	Bioinspired Fibers Follow the Track of Natural Spider Silk. Macromolecules, 2011, 44, 1166-1176.	2.2	69
22	Effect of water on <i>Bombyx mori</i> regenerated silk fibers and its application in modifying their mechanical properties. Journal of Applied Polymer Science, 2008, 109, 1793-1801.	1.3	63
23	Cohesive crack modelling of a simple concrete: Experimental and numerical results. Engineering Fracture Mechanics, 2009, 76, 1398-1410.	2.0	56
24	Mechanical Behavior of Silk During the Evolution of Orb-Web Spinning Spiders. Biomacromolecules, 2009, 10, 1904-1910.	2.6	56
25	Old Silks Endowed with New Properties. Macromolecules, 2009, 42, 8977-8982.	2.2	54
26	Minor Ampullate Silks from Nephila and Argiope Spiders: Tensile Properties and Microstructural Characterization. Biomacromolecules, 2012, 13, 2087-2098.	2.6	52
27	Fracture loads for ceramic samples with rounded notches. Engineering Fracture Mechanics, 2006, 73, 880-894.	2.0	50
28	Similarities and Differences in the Supramolecular Organization of Silkworm and Spider Silk. Macromolecules, 2007, 40, 5360-5365.	2.2	50
29	Behavior of prestressing steels after a simulated fire: Fire-induced damages. Construction and Building Materials, 2009, 23, 2932-2940.	3.2	50
30	Influence of the draw ratio on the tensile and fracture behavior of NMMO regenerated silk fibers. Journal of Polymer Science, Part B: Polymer Physics, 2007, 45, 2568-2579.	2.4	47
31	Material properties of evolutionary diverse spider silks described by variation in a single structural parameter. Scientific Reports, 2016, 6, 18991.	1.6	41
32	Persistence and variation in microstructural design during the evolution of spider silk. Scientific Reports, 2015, 5, 14820.	1.6	39
33	Fracture assessment of graphite Vâ€notched and Uâ€notched specimens by using the cohesive crack model. Fatigue and Fracture of Engineering Materials and Structures, 2015, 38, 563-573.	1.7	38
34	Production of High Performance Bioinspired Silk Fibers by Straining Flow Spinning. Biomacromolecules, 2017, 18, 1127-1133.	2.6	38
35	Correlation between processing conditions, microstructure and mechanical behavior in regenerated silkworm silk fibers. Journal of Polymer Science, Part B: Polymer Physics, 2012, 50, 455-465.	2.4	37
36	A synthesis of Polymethylmethacrylate data from U-notched specimens and V-notches with end holes by means of local energy. Materials & Design, 2013, 49, 826-833.	5.1	37

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37	Finding inspiration in argiope trifasciata spider silk fibers. Jom, 2005, 57, 60-66.	0.9	35
38	Failure analysis of prestressed anchor bars. Engineering Failure Analysis, 2012, 24, 57-66.	1.8	34
39	Nonlinear fracture of cohesive materials. , 1991, , 139-157.		33
40	Reproducibility of the tensile properties of spider (Argiope trifasciata) silk obtained by forced silking. Journal of Experimental Zoology Part A, Comparative Experimental Biology, 2005, 303A, 37-44.	1.3	33
41	The apparent variability of silkworm (Bombyx mori) silk and its relationship with degumming. European Polymer Journal, 2016, 78, 129-140.	2.6	33
42	Mechanical properties of human coronary arteries. , 2010, 2010, 3792-5.		30
43	Identification and dynamics of polyglycine II nanocrystals in Argiope trifasciata flagelliform silk. Scientific Reports, 2013, 3, 3061.	1.6	30
44	The equivalent elastic crack: 1. Load-Y equivalences. International Journal of Fracture, 1993, 61, 159-172.	1.1	29
45	Measurement and modelling of residual stresses in straightened commercial eutectoid steel rods. Acta Materialia, 2005, 53, 4415-4425.	3.8	27
46	The equivalent elastic crack: 2. X-Y equivalences and asymptotic analysis. International Journal of Fracture, 1993, 61, 231-246.	1.1	26
47	Recovery in Viscid Line Fibers. Biomacromolecules, 2010, 11, 1174-1179.	2.6	26
48	Example of microprocessing in a natural polymeric fiber: Role of reeling stress in spider silk. Journal of Materials Research, 2006, 21, 1931-1938.	1.2	23
49	Straining flow spinning: production of regenerated silk fibers under a wide range of mild coagulating chemistries. Green Chemistry, 2017, 19, 3380-3389.	4.6	23
50	Constitutive model for fiber-reinforced materials with deformable matrices. Physical Review E, 2007, 76, 041903.	0.8	22
51	Supercontraction of dragline silk spun by lynx spiders (Oxyopidae). International Journal of Biological Macromolecules, 2010, 46, 555-557.	3.6	22
52	Comparison of cell mechanical measurements provided by Atomic Force Microscopy (AFM) and Micropipette Aspiration (MPA). Journal of the Mechanical Behavior of Biomedical Materials, 2019, 95, 103-115.	1.5	22
53	Supramolecular organization of regenerated silkworm silk fibers. International Journal of Biological Macromolecules, 2009, 44, 195-202.	3.6	21
54	Comparison of the effects of post-spinning drawing and wet stretching on regenerated silk fibers produced through straining flow spinning. Polymer, 2018, 150, 311-317.	1.8	21

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55	Improved Measurement of Elastic Properties of Cells by Micropipette Aspiration and Its Application to Lymphocytes. Annals of Biomedical Engineering, 2017, 45, 1375-1385.	1.3	20
56	Enhanced Biological Response of AVS-Functionalized Ti-6Al-4V Alloy through Covalent Immobilization of Collagen. Scientific Reports, 2018, 8, 3337.	1.6	20
57	Emergence of supercontraction in regenerated silkworm (Bombyx mori) silk fibers. Scientific Reports, 2019, 9, 2398.	1.6	20
58	A probabilistic model for the pearlite-induced cleavage of a plain carbon structural steel. Engineering Fracture Mechanics, 2005, 72, 709-728.	2.0	19
59	Fracture surfaces and tensile properties of UV-irradiated spider silk fibers. Journal of Polymer Science, Part B: Polymer Physics, 2007, 45, 786-793.	2.4	19
60	Factors influencing the mechanical behaviour of healthy human descending thoracic aorta. Physiological Measurement, 2010, 31, 1553-1565.	1.2	19
61	Basic Principles in the Design of Spider Silk Fibers. Molecules, 2021, 26, 1794.	1.7	18
62	Unexpected behavior of irradiated spider silk links conformational freedom to mechanical performance. Soft Matter, 2015, 11, 4868-4878.	1.2	17
63	Simple measurement of the apparent viscosity of a cell from only one picture: Application to cardiac stem cells. Physical Review E, 2014, 90, 052715.	0.8	16
64	Straining Flow Spinning of Artificial Silk Fibers: A Review. Biomimetics, 2018, 3, 29.	1.5	16
65	Role of Residual Stresses in Stress Relaxation of Prestressed Concrete Wires. Journal of Materials in Civil Engineering, 2007, 19, 703-708.	1.3	15
66	Increases of Corporal Temperature as a Risk Factor of Atherosclerotic Plaque Instability. Annals of Biomedical Engineering, 2008, 36, 66-76.	1.3	15
67	The Role of Residual Stresses in the Performance and Durability of Prestressing Steel Wires. Experimental Mechanics, 2012, 52, 881-893.	1.1	14
68	Spider silk gut: Development and characterization of a novel strong spider silk fiber. Scientific Reports, 2014, 4, 7326.	1.6	14
69	Mechanical behaviour and formation process of silkworm silk gut. Soft Matter, 2015, 11, 8981-8991.	1.2	14
70	Application of the Spider Silk Standardization Initiative (S3I) methodology to the characterization of major ampullate gland silk fibers spun by spiders from Pantanos de Villa wetlands (Lima, Peru). Journal of the Mechanical Behavior of Biomedical Materials, 2020, 111, 104023.	1.5	13
71	The influence of anaesthesia on the tensile properties of spider silk. Journal of Experimental Biology, 2006, 209, 320-326.	0.8	12
72	Behaviour of steel prestressing wires under extreme conditions of strain rate and temperature. Structural Concrete, 2011, 12, 255-261.	1.5	12

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73	Polymeric fibers with tunable properties: Lessons from spider silk. Materials Science and Engineering C, 2011, 31, 1184-1188.	3.8	12
74	Environmental effects on large diameter high-strength rods for structural applications. Engineering Failure Analysis, 2018, 83, 230-238.	1.8	12
75	Effect of thermo-mechanical treatments on residual stresses measured by neutron diffraction in cold-drawn steel rods. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2006, 435-436, 725-735.	2.6	11
76	Optimization of functionalization conditions for protein analysis by AFM. Applied Surface Science, 2014, 317, 462-468.	3.1	11
77	Optimisation of post-drawing treatments by means of neutron diffraction. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 480, 439-448.	2.6	10
78	Insights into the production and characterization of electrospun fibers from regenerated silk fibroin. European Polymer Journal, 2014, 60, 123-134.	2.6	10
79	Regenerated Silk Fibers Obtained by Straining Flow Spinning for Guiding Axonal Elongation in Primary Cortical Neurons. ACS Biomaterials Science and Engineering, 2020, 6, 6842-6852.	2.6	10
80	Stability and activity of lactate dehydrogenase on biofunctional layers deposited by activated vapor silanization (AVS) and immersion silanization (IS). Applied Surface Science, 2017, 416, 965-970.	3.1	9
81	Straining flow spinning: Simplified model of a bioinspired process to mass produce regenerated silk fibers controllably. European Polymer Journal, 2017, 97, 26-39.	2.6	9
82	Preparation and characterization of <i>Nephila clavipes</i> tubuliform silk gut. Soft Matter, 2019, 15, 2960-2970.	1.2	9
83	Ambient and High-Temperature Stable Fracture Tests in Ceramics: Applications to Yttria-Partially-Stabilized Zirconia. Journal of the American Ceramic Society, 1993, 76, 2927-2929.	1.9	8
84	Thermo-mechanical treatment effects on stress relaxation and hydrogen embrittlement of cold-drawn eutectoid steels. Metals and Materials International, 2011, 17, 899-910.	1.8	8
85	Expression of spidroin proteins in the silk glands of golden orbâ€weaver spiders. Journal of Experimental Zoology Part B: Molecular and Developmental Evolution, 2022, 338, 241-253.	0.6	8
86	Improved cell adhesion to activated vapor silanization-biofunctionalized Ti-6Al-4V surfaces with ECM-derived oligopeptides. Materials Science and Engineering C, 2022, 133, 112614.	3.8	8
87	The variability and interdependence of spider viscid line tensile properties. Journal of Experimental Biology, 2013, 216, 4722-8.	0.8	7
88	Production of regenerated silkworm silk fibers from aqueous dopes through straining flow spinning. Textile Reseach Journal, 2019, 89, 4554-4567.	1.1	7
89	Lessons From Spider and Silkworm Silk Guts. Frontiers in Materials, 2020, 7, .	1.2	7
90	Development of a versatile procedure for the biofunctionalization of Ti-6Al-4V implants. Applied Surface Science, 2016, 387, 652-660.	3.1	6

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91	Functionalization of atomic force microscopy cantilevers and tips by activated vapour silanization. Applied Surface Science, 2019, 484, 1141-1148.	3.1	5
92	Numerical modelling of ductile spall fracture. International Journal of Impact Engineering, 1995, 16, 237-251.	2.4	4
93	Effect of atherosclerosis on thermo-mechanical properties of arterial wall and its repercussion on plaque instability. International Journal of Cardiology, 2009, 132, 444-446.	0.8	4
94	The Cohesive Crack Model Applied to Notched PMMA Specimens Obeying a Non Linear Behaviour under Torsion Loading. Key Engineering Materials, 0, 577-578, 49-52.	0.4	4
95	Topographical and mechanical characterization of living eukaryotic cells on opaque substrates: development of a general procedure and its application to the study of non-adherent lymphocytes. Physical Biology, 2015, 12, 026005.	0.8	4
96	The plastic growth of a cavity nucleated at a shear band. International Journal of Solids and Structures, 1993, 30, 2971-2981.	1.3	3
97	Fracture mechanics parameters of concrete. Advanced Cement Based Materials, 1996, 4, 116-127.	0.4	3
98	Damage tolerance of an anchor head in a post-tensioning anchorage system. Engineering Failure Analysis, 2006, 13, 235-246.	1.8	3
99	Structure and properties of spider and silkworm silk for tissue scaffolds. , 2014, , 239-274.		3
100	Fracture of concrete and rock editorial. Engineering Fracture Mechanics, 2002, 69, 93-94.	2.0	2
101	Influence of coiling on the stress relaxation of prestressing steel wires. Structural Concrete, 2011, 12, 120-125.	1.5	2
102	Brittle or Quasi-Brittle Fracture of Engineering Materials: Recent Developments and New Challenges. Advances in Materials Science and Engineering, 2014, 2014, 1-2.	1.0	2
103	Tear and decohesion of bovine pericardial tissue. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 63, 1-9.	1.5	2
104	Synchrotron strain scanning for residual stress measurement in cold-drawn steel rods. Journal of Strain Analysis for Engineering Design, 2011, 46, 627-637.	1.0	1
105	Fracture Behavior of Notched Round Bars Made of Gray Cast Iron Subjected to Torsion. Key Engineering Materials, 0, 627, 69-72.	0.4	1
106	Reproducibility of the tensile properties of spider (Argiope trifasciata) silk obtained by forced silking. , 2005, 303A, 37.		1
107	Strategies for the Biofunctionalization of Straining Flow Spinning Regenerated Bombyx mori Fibers. Molecules, 2022, 27, 4146.	1.7	1
108	Papers presented at the 21st meeting of the Spanish Fracture Group (Punta UmbrÃa, Spain, 24â€"26 March) Tj ETQq0 0 0 rgBT /Overlo	1.8	0

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109	Spider Silk as an Inspiration for Biomimicking. Advances in Science and Technology, 2008, 58, 1-9.	0.2	0
110	Effect of Initial Residual Stress on Stress Relaxation in Cold-Drawn Steel Rods. Materials Science Forum, 2010, 652, 227-232.	0.3	0
111	The new Degree in Materials Engineering at the Technical University of Madrid (UPM). , 2010, , .		0
112	Polymethylmethacrylate Data from U-Notched Specimens and V-Notches with End Holes: A Synthesis by Means of Local Energy. Key Engineering Materials, 0, 627, 73-76.	0.4	0
113	Influencia de las condiciones de almacenamiento sobre la relajaciÃ³n de aceros de pretensado. Materiales De Construccion, 2012, 62, 531-546.	0.2	0
114	Unexpected high toughness of <i>Samia cynthia ricini</i> silk gut. Soft Matter, 0, , .	1.2	0