

Carlos C González

List of Publications by Year in descending order

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122
papers

6,702
citations

46984

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docs citations

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times ranked

4237
citing authors

#	ARTICLE	IF	CITATIONS
1	Mechanical behavior of unidirectional fiber-reinforced polymers under transverse compression: Microscopic mechanisms and modeling. <i>Composites Science and Technology</i> , 2007, 67, 2795-2806.	3.8	454
2	Multiscale Modeling of Composite Materials: a Roadmap Towards Virtual Testing. <i>Advanced Materials</i> , 2011, 23, 5130-5147.	11.1	298
3	A numerical investigation of the effect of particle clustering on the mechanical properties of composites. <i>Acta Materialia</i> , 2003, 51, 2355-2369.	3.8	284
4	Effect of fiber, matrix and interface properties on the in-plane shear deformation of carbon-fiber reinforced composites. <i>Composites Science and Technology</i> , 2010, 70, 970-980.	3.8	244
5	Structural composites for multifunctional applications: Current challenges and future trends. <i>Progress in Materials Science</i> , 2017, 89, 194-251.	16.0	205
6	Microstructural factors controlling the strength and ductility of particle-reinforced metal-matrix composites. <i>Journal of the Mechanics and Physics of Solids</i> , 1998, 46, 1-28.	2.3	160
7	Failure locus of fiber-reinforced composites under transverse compression and out-of-plane shear. <i>Composites Science and Technology</i> , 2008, 68, 829-839.	3.8	159
8	Computational micromechanics of the transverse and shear behavior of unidirectional fiber reinforced polymers including environmental effects. <i>Composites Part A: Applied Science and Manufacturing</i> , 2017, 92, 146-157.	3.8	157
9	Intraply fracture of fiber-reinforced composites: Microscopic mechanisms and modeling. <i>Composites Science and Technology</i> , 2012, 72, 1223-1232.	3.8	133
10	Effect of curing cycle on void distribution and interlaminar shear strength in polymer-matrix composites. <i>Composites Science and Technology</i> , 2011, 71, 1331-1341.	3.8	131
11	Prediction of the failure locus of C/PEEK composites under transverse compression and longitudinal shear through computational micromechanics. <i>Composites Science and Technology</i> , 2008, 68, 3128-3136.	3.8	125
12	Micromechanics of elasto-plastic materials reinforced with ellipsoidal inclusions. <i>International Journal of Solids and Structures</i> , 2007, 44, 6945-6962.	1.3	123
13	Numerical simulation of elasto-plastic deformation of composites: evolution of stress microfields and implications for homogenization models. <i>Journal of the Mechanics and Physics of Solids</i> , 2004, 52, 1573-1593.	2.3	121
14	X-ray microtomography analysis of the damage micromechanisms in 3D woven composites under low-velocity impact. <i>Composites Part A: Applied Science and Manufacturing</i> , 2013, 45, 49-60.	3.8	120
15	Transverse cracking of cross-ply laminates: A computational micromechanics perspective. <i>Composites Science and Technology</i> , 2015, 110, 196-204.	3.8	120
16	Interlaminar toughening in structural carbon fiber/epoxy composites interleaved with carbon nanotube veils. <i>Composites Part A: Applied Science and Manufacturing</i> , 2019, 124, 105477.	3.8	117
17	A methodology to measure the interface shear strength by means of the fiber push-in test. <i>Composites Science and Technology</i> , 2012, 72, 1924-1932.	3.8	115
18	Multiscale modeling of fracture in fiber-reinforced composites. <i>Acta Materialia</i> , 2006, 54, 4171-4181.	3.8	105

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19	Recovery of carbon fibres by the thermolysis and gasification of waste prepreg. <i>Journal of Analytical and Applied Pyrolysis</i> , 2013, 104, 675-683.	2.6	105
20	A numerical study of the influence of microvoids in the transverse mechanical response of unidirectional composites. <i>Composites Science and Technology</i> , 2014, 97, 46-54.	3.8	102
21	Computational micromechanics of fiber kinking in unidirectional FRP under different environmental conditions. <i>Composites Science and Technology</i> , 2017, 144, 26-35.	3.8	102
22	Optimization of curing cycle in carbon fiber-reinforced laminates: Void distribution and mechanical properties. <i>Composites Science and Technology</i> , 2013, 85, 73-82.	3.8	101
23	Roadmap on multiscale materials modeling. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2020, 28, 043001.	0.8	100
24	Physically-sound simulation of low-velocity impact on fiber reinforced laminates. <i>International Journal of Impact Engineering</i> , 2016, 92, 3-17.	2.4	95
25	Determination of the mechanical properties of amorphous materials through instrumented nanoindentation. <i>Acta Materialia</i> , 2012, 60, 3953-3964.	3.8	92
26	The role of interfacial properties on the intralaminar and interlaminar damage behaviour of unidirectional composite laminates: Experimental characterization and multiscale modelling. <i>Composites Part B: Engineering</i> , 2018, 138, 206-221.	5.9	90
27	A self-consistent approach to the elasto-plastic behaviour of two-phase materials including damage. <i>Journal of the Mechanics and Physics of Solids</i> , 2000, 48, 675-692.	2.3	89
28	Micromechanisms of deformation and fracture of polypropylene nonwoven fabrics. <i>International Journal of Solids and Structures</i> , 2011, 48, 153-162.	1.3	89
29	Application of digital image correlation at the microscale in fiber-reinforced composites. <i>Composites Part A: Applied Science and Manufacturing</i> , 2012, 43, 1630-1638.	3.8	89
30	Energy storage in structural composites by introducing CNT fiber/polymer electrolyte interleaves. <i>Scientific Reports</i> , 2018, 8, 3407.	1.6	83
31	Damage micromechanisms and notch sensitivity of glass-fiber non-woven felts: An experimental and numerical study. <i>Journal of the Mechanics and Physics of Solids</i> , 2010, 58, 1628-1645.	2.3	82
32	On the accuracy of mean-field approaches to simulate the plastic deformation of composites. <i>Scripta Materialia</i> , 2002, 46, 525-529.	2.6	80
33	Modeling Lightning Impact Thermo-Mechanical Damage on Composite Materials. <i>Applied Composite Materials</i> , 2014, 21, 149-164.	1.3	80
34	Computational micromechanics evaluation of the effect of fibre shape on the transverse strength of unidirectional composites: An approach to virtual materials design. <i>Composites Part A: Applied Science and Manufacturing</i> , 2016, 91, 484-492.	3.8	77
35	Ballistic performance of hybrid 3D woven composites: Experiments and simulations. <i>Composite Structures</i> , 2015, 127, 141-151.	3.1	72
36	Effect of Glass Fiber Hybridization on the Behavior Under Impact of Woven Carbon Fiber/Epoxy Laminates. <i>Journal of Composite Materials</i> , 2010, 44, 3051-3068.	1.2	71

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37	Microstructure and physical properties of some oxide eutectic composites processed by directional solidification. <i>Acta Materialia</i> , 2000, 48, 4683-4689.	3.8	70
38	Phase Distribution and Residual Stresses in Melt-Grown $\text{Al}_2\text{O}_3\text{-ZrO}_2\text{(Y}_2\text{O}_3)$ Eutectics. <i>Journal of the American Ceramic Society</i> , 2002, 85, 2025-2032.	1.9	68
39	Piezospectroscopic Study of Residual Stresses in $\text{Al}_2\text{O}_3\text{-ZrO}_2$ Directionally Solidified Eutectics. <i>Journal of the American Ceramic Society</i> , 2000, 83, 2745-2752.	1.9	68
40	Automatic quantification of matrix cracking and fiber rotation by X-ray computed tomography in shear-deformed carbon fiber-reinforced laminates. <i>Composites Science and Technology</i> , 2014, 90, 129-138.	3.8	67
41	Micromechanical modelling of deformation and failure in $\text{Ti}_6\text{Al}_4\text{V/SiC}$ composites. <i>Acta Materialia</i> , 2001, 49, 3505-3519.	3.8	63
42	Mechanisms of shear deformation in fiber-reinforced polymers: experiments and simulations. <i>International Journal of Fracture</i> , 2009, 158, 197-209.	1.1	58
43	Comparison of push-in and push-out tests for measuring interfacial shear strength in nano-reinforced composite materials. <i>Journal of Composite Materials</i> , 2016, 50, 1651-1659.	1.2	54
44	A constitutive model for the in-plane mechanical behavior of nonwoven fabrics. <i>International Journal of Solids and Structures</i> , 2012, 49, 2215-2229.	1.3	53
45	Mechanical behavior and failure micromechanisms of hybrid 3D woven composites in tension. <i>Composites Part A: Applied Science and Manufacturing</i> , 2014, 59, 93-104.	3.8	53
46	Synergistic Effect of Carbon Nanotube and Polyethersulfone on Flame Retardancy of Carbon Fiber Reinforced Epoxy Composites. <i>Industrial & Engineering Chemistry Research</i> , 2014, 53, 1040-1047.	1.8	53
47	Understanding interlaminar toughening of unidirectional CFRP laminates with carbon nanotube veils. <i>Composites Part B: Engineering</i> , 2020, 201, 108372.	5.9	51
48	Influence of the loading path on the strength of fiber-reinforced composites subjected to transverse compression and shear. <i>International Journal of Solids and Structures</i> , 2008, 45, 1663-1675.	1.3	48
49	Prediction of the tensile stress-strain curve and ductility in Al/SiC composites. <i>Scripta Materialia</i> , 1996, 35, 91-97.	2.6	47
50	Determination of damage micromechanisms and fracture resistance of glass fiber/epoxy cross-ply laminate by means of X-ray computed microtomography. <i>Composites Science and Technology</i> , 2012, 72, 350-359.	3.8	46
51	Deformation and energy dissipation mechanisms of needle-punched nonwoven fabrics: A multiscale experimental analysis. <i>International Journal of Solids and Structures</i> , 2015, 64-65, 120-131.	1.3	44
52	An in situ investigation of microscopic infusion and void transport during vacuum-assisted infiltration by means of X-ray computed tomography. <i>Composites Science and Technology</i> , 2015, 119, 12-19.	3.8	43
53	Multiscale Modeling of Composites: Toward Virtual Testing and Beyond. <i>Jom</i> , 2013, 65, 215-225.	0.9	41
54	An experimental and numerical study of the influence of local effects on the application of the fibre push-in test. <i>Philosophical Magazine</i> , 2011, 91, 1293-1307.	0.7	40

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55	Inverse notch sensitivity: Cracks can make nonwoven fabrics stronger. <i>Journal of the Mechanics and Physics of Solids</i> , 2015, 77, 61-69.	2.3	37
56	Multiscale virtual testing: the roadmap to efficient design of composites for damage resistance and tolerance. <i>CEAS Aeronautical Journal</i> , 2016, 7, 607-619.	0.9	36
57	Mechanical behavior and deformation micromechanisms of polypropylene nonwoven fabrics as a function of temperature and strain rate. <i>Mechanics of Materials</i> , 2014, 74, 14-25.	1.7	34
58	Stiffness of a curved beam subjected to axial load and large displacements. <i>International Journal of Solids and Structures</i> , 2005, 42, 1537-1545.	1.3	32
59	A Composite Fabrication Sensor Based on Electrochemical Doping of Carbon Nanotube Yarns. <i>Advanced Functional Materials</i> , 2016, 26, 7139-7147.	7.8	32
60	Strength and toughness of structural fibres for composite material reinforcement. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2016, 374, 20150274.	1.6	32
61	Ballistic performance of hybrid nonwoven/woven polyethylene fabric shields. <i>International Journal of Impact Engineering</i> , 2018, 111, 55-65.	2.4	31
62	Virtual fracture testing of composites: A computational micromechanics approach. <i>Engineering Fracture Mechanics</i> , 2007, 74, 1126-1138.	2.0	29
63	Optimization of microstructures and mechanical properties of composite oriented strand board from reused prepreg. <i>Composite Structures</i> , 2017, 174, 389-398.	3.1	27
64	Interface Characterization in Fiber-Reinforced Polymer-Matrix Composites. <i>Jom</i> , 2017, 69, 13-21.	0.9	27
65	A numerical framework to analyze fracture in composite materials: From R-curves to homogenized softening laws. <i>International Journal of Solids and Structures</i> , 2018, 134, 216-228.	1.3	27
66	Special-purpose elements to impose Periodic Boundary Conditions for multiscale computational homogenization of composite materials with the explicit Finite Element Method. <i>Composite Structures</i> , 2019, 208, 434-441.	3.1	26
67	Numerical analysis of pin on disc tests on Al-Li/SiC composites. <i>Wear</i> , 2005, 259, 609-612.	1.5	25
68	X-ray computed tomography analysis of damage evolution in open hole carbon fiber-reinforced laminates subjected to in-plane shear. <i>Composites Science and Technology</i> , 2016, 133, 40-50.	3.8	23
69	Computational micromechanics model for the analysis of fiber kinking in unidirectional fiber-reinforced polymers. <i>Mechanics of Materials</i> , 2020, 142, 103299.	1.7	23
70	Energy dissipation during delamination in composite materials - An experimental assessment of the cohesive law and the stress-strain field ahead of a crack tip. <i>Composites Science and Technology</i> , 2016, 134, 115-124.	3.8	22
71	A multiscale micromechanical model of needlepunched nonwoven fabrics. <i>International Journal of Solids and Structures</i> , 2016, 96, 81-91.	1.3	22
72	Multiscale modelling of thermoplastic woven fabric composites: From micromechanics to mesomechanics. <i>Composite Structures</i> , 2019, 228, 111340.	3.1	22

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73	An analysis of void formation mechanisms in out-of-autoclave prepregs by means of X-ray computed tomography. <i>Composites Part A: Applied Science and Manufacturing</i> , 2019, 117, 230-242.	3.8	22
74	Influence of fiber orientation on the ballistic performance of needlepunched nonwoven fabrics. <i>Mechanics of Materials</i> , 2016, 94, 106-116.	1.7	20
75	Notch effect in failure of fiberglass non-woven materials. <i>International Journal of Solids and Structures</i> , 2016, 96, 254-264.	1.3	19
76	A level set approach for the analysis of flow and compaction during resin infusion in composite materials. <i>Composites Part A: Applied Science and Manufacturing</i> , 2014, 67, 299-307.	3.8	18
77	Fabric compaction and infiltration during vacuum-assisted resin infusion with and without distribution medium. <i>Journal of Composite Materials</i> , 2017, 51, 687-703.	1.2	18
78	A microstructures generation tool for virtual ply property screening of hybrid composites with high volume fractions of non-circular fibers " VIPER. <i>Composites Part A: Applied Science and Manufacturing</i> , 2020, 129, 105691.	3.8	16
79	A Machine Learning Model to Detect Flow Disturbances during Manufacturing of Composites by Liquid Moulding. <i>Journal of Composites Science</i> , 2020, 4, 71.	1.4	16
80	Fracture behaviour of triaxial braided composites and its simulation using a multi-material shell modelling approach. <i>Engineering Fracture Mechanics</i> , 2018, 188, 268-286.	2.0	15
81	Damage-tolerant, laminated structural supercapacitor composites enabled by integration of carbon nanotube fibres. <i>Multifunctional Materials</i> , 2020, 3, 015001.	2.4	15
82	A stable XFEM in cohesive transition from closed to open crack. <i>International Journal for Numerical Methods in Engineering</i> , 2015, 101, 540-570.	1.5	14
83	Effect of temperature on the fracture mechanisms of 8090 Al-Li alloy and 8090 Al-Li/SiC composite. <i>Scripta Materialia</i> , 2004, 51, 1111-1115.	2.6	13
84	Numerical Simulation of the Fracture Behavior of Ti/SiC Composites between 20 °C and 400 °C. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2007, 38, 169-179.	1.1	13
85	Influence of plasma surface treatments on kink band formation in PBO fibers during compression. <i>Journal of Applied Polymer Science</i> , 2012, 123, 2052-2063.	1.3	13
86	Mechanisms of in-plane shear deformation in hybrid three-dimensional woven composites. <i>Journal of Composite Materials</i> , 2015, 49, 3755-3763.	1.2	13
87	The effect of strain rate on the tensile deformation of Ti-6Al-4V/SiC composites. <i>Scripta Materialia</i> , 2001, 44, 2667-2671.	2.6	12
88	Quantitative multi-scale characterization of single basalt fibres: Insights into strength loss mechanisms after thermal conditioning. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 797, 139963.	2.6	12
89	Strength, corrosion resistance and cellular response of interfaces in bioresorbable poly-lactic acid/Mg fiber composites for orthopedic applications. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021, 123, 104781.	1.5	12
90	Influence of hybridisation on energy absorption of 3D woven composites under low-velocity impact loading. Modelling and experimental validation. <i>International Journal of Impact Engineering</i> , 2022, 165, 104229.	2.4	12

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91	Failure locus of polypropylene nonwoven fabrics under in-plane biaxial deformation. <i>Comptes Rendus - Mecanique</i> , 2012, 340, 307-319.	2.1	11
92	Dynamic characterisation of interlaminar fracture toughness in carbon fibre epoxy composite laminates. <i>Composites Part A: Applied Science and Manufacturing</i> , 2019, 126, 105597.	3.8	11
93	Numerical simulation of the ballistic response of needle-punched nonwoven fabrics. <i>International Journal of Solids and Structures</i> , 2017, 106-107, 56-67.	1.3	10
94	Relations between intralaminar micromechanisms and translaminar fracture behavior of unidirectional FRP supported by experimental micromechanics. <i>Composites Part B: Engineering</i> , 2019, 174, 107000.	5.9	10
95	3D-printed resistive carbon-fiber-reinforced sensors for monitoring the resin frontal flow during composite manufacturing. <i>Sensors and Actuators A: Physical</i> , 2021, 317, 112422.	2.0	10
96	Simulation of corrosion and mechanical degradation of additively manufactured Mg scaffolds in simulated body fluid. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2022, 126, 104881.	1.5	10
97	Interlaminar and Intralaminar Fracture Behavior of Carbon Fiber Reinforced Polymer Composites. <i>Key Engineering Materials</i> , 0, 713, 325-328.	0.4	9
98	Toughness of fiber-reinforced titanium as a function of temperature: experimental results and micromechanical modeling. <i>Acta Materialia</i> , 2004, 52, 3929-3939.	3.8	8
99	Virtual testing of impact in fiber reinforced laminates. , 2015, , 247-270.		8
100	Thermal oxidation of PEPA-terminated polyimide. <i>High Performance Polymers</i> , 2019, 31, 707-718.	0.8	8
101	DAMAGE LOCALIZATION AND FAILURE LOCUS UNDER BIAXIAL LOADING IN GLASS-FIBER NONWOVEN FELTS. <i>International Journal for Multiscale Computational Engineering</i> , 2012, 10, 425-440.	0.8	7
102	Chemical Regeneration of Thermally Conditioned Basalt Fibres. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 6674.	1.3	7
103	Strength and toughness of cellular SiC at elevated temperature. <i>Engineering Failure Analysis</i> , 2009, 16, 2598-2603.	1.8	6
104	Novel experimental procedure and determination of full displacement fields of delaminating composite layer interfaces for evaluation of the mode II cohesive law. <i>Engineering Fracture Mechanics</i> , 2015, 149, 326-337.	2.0	6
105	A Multi Material Shell Model for the Mechanical Analysis of Triaxial Braided Composites. <i>Applied Composite Materials</i> , 2017, 24, 1425-1445.	1.3	6
106	Characterization of Carbon Fibers Recovered by Pyrolysis of Cured Prepregs and Their Reuse in New Composites. , 2018, , .		6
107	Mechanical Properties of Sigma 1140+ Sic Fibres Prior and after Composite Processing. <i>Advanced Composites Letters</i> , 2000, 9, 096369350000900.	1.3	5
108	An analysis of the effect of hydrostatic pressure on the tensile deformation of aluminum-matrix composites. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2003, 341, 256-263.	2.6	5

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109	S-XCT experimental determination of local contact angle and meniscus shape in liquid moulding of composites. <i>Composites Science and Technology</i> , 2020, 199, 108362.	3.8	5
110	A numerical model to simulate the deformation and fracture of polyethylene fibres. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2003, 11, 349-364.	0.8	4
111	Computational micromechanics strategies for the analysis of failure in unidirectional composites. , 2015, , 411-433.		4
112	A Machine Learning Strategy for Race-Tracking Detection During Manufacturing of Composites by Liquid Moulding. <i>Integrating Materials and Manufacturing Innovation</i> , 2022, 11, 296-311.	1.2	4
113	Finite element and homogenization modelling of materials. , 2007, , 121-147.		3
114	Development of a Mesoscale Finite Element Constitutive Model for Fiber Kinking. , 2018, , .		3
115	8.12 Multiscale FE Modelling and Design of Composite Laminates Under Impact. , 2018, , 219-238.		3
116	Dynamic Tensile Testing of Needle-Punched Nonwoven Fabrics. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 5081.	1.3	3
117	In situ local imaging and analysis of impregnation during liquid moulding of composite materials using synchrotron radiation computed laminography. <i>Composites Science and Technology</i> , 2021, 215, 108999.	3.8	3
118	An X-ray computed tomography analysis of damage induced by thermal cycling in non-crimp fabric composites. <i>Composites Part A: Applied Science and Manufacturing</i> , 2022, 152, 106699.	3.8	3
119	Assessment of stress transfer in laminated structural power composites produced with mechanically-connected electric double-layer capacitors. <i>Composites Science and Technology</i> , 2022, 218, 109128.	3.8	3
120	Ballistic response of needlepunched nonwovens. , 2022, , 241-261.		1
121	Micromechanical analysis of two-phase materials including plasticity and damage. , 2001, , 211-213.		0
122	Modelling Deformation and Damage in Particle-Reinforced Composites: The Effect of Superposed Hydrostatic Pressure. <i>Solid Mechanics and Its Applications</i> , 2002, , 417-426.	0.1	0