Carlos C GonzÃ¡lez

List of Publications by Year
in descending order

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122 papers	6,702 citations	47 h-index	79 g-index
		47006	64796
128 all docs	128 docs citations	128 times ranked	4237 citing authors

#	Article	IF	Citations
1	Mechanical behavior of unidirectional fiber-reinforced polymers under transverse compression: Microscopic mechanisms and modeling. Composites Science and Technology, 2007, 67, 2795-2806.	7.8	454
2	Multiscale Modeling of Composite Materials: a Roadmap Towards Virtual Testing. Advanced Materials, 2011, 23, 5130-5147.	21.0	298
3	A numerical investigation of the effect of particle clustering on the mechanical properties of composites. Acta Materialia, 2003, 51, 2355-2369.	7.9	284
4	Effect of fiber, matrix and interface properties on the in-plane shear deformation of carbon-fiber reinforced composites. Composites Science and Technology, 2010, 70, 970-980.	7.8	244
5	Structural composites for multifunctional applications: Current challenges and future trends. Progress in Materials Science, 2017, 89, 194-251.	32.8	205
6	Microstructural factors controlling the strength and ductility of particle-reinforced metal-matrix composites. Journal of the Mechanics and Physics of Solids, 1998, 46, 1-28.	4.8	160
7	Failure locus of fiber-reinforced composites under transverse compression and out-of-plane shear. Composites Science and Technology, 2008, 68, 829-839.	7.8	159
8	Computational micromechanics of the transverse and shear behavior of unidirectional fiber reinforced polymers including environmental effects. Composites Part A: Applied Science and Manufacturing, 2017, 92, 146-157.	7.6	157
9	Intraply fracture of fiber-reinforced composites: Microscopic mechanisms and modeling. Composites Science and Technology, 2012, 72, 1223-1232.	7.8	133
10	Effect of curing cycle on void distribution and interlaminar shear strength in polymer-matrix composites. Composites Science and Technology, 2011, 71, 1331-1341.	7.8	131
11	Prediction of the failure locus of C/PEEK composites under transverse compression and longitudinal shear through computational micromechanics. Composites Science and Technology, 2008, 68, 3128-3136.	7.8	125
12	Micromechanics of elasto-plastic materials reinforced with ellipsoidal inclusions. International Journal of Solids and Structures, 2007, 44, 6945-6962.	2.7	123
13	Numerical simulation of elasto-plastic deformation of composites: evolution of stress microfields and implications for homogenization models. Journal of the Mechanics and Physics of Solids, 2004, 52, 1573-1593.	4.8	121
14	X-ray microtomography analysis of the damage micromechanisms in 3D woven composites under low-velocity impact. Composites Part A: Applied Science and Manufacturing, 2013, 45, 49-60.	7.6	120
15	Transverse cracking of cross-ply laminates: A computational micromechanics perspective. Composites Science and Technology, 2015, 110, 196-204.	7.8	120
16	Interlaminar toughening in structural carbon fiber/epoxy composites interleaved with carbon nanotube veils. Composites Part A: Applied Science and Manufacturing, 2019, 124, 105477.	7.6	117
17	A methodology to measure the interface shear strength by means of the fiber push-in test. Composites Science and Technology, 2012, 72, 1924-1932.	7.8	115
18	Multiscale modeling of fracture in fiber-reinforced composites. Acta Materialia, 2006, 54, 4171-4181.	7.9	105

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19	Recovery of carbon fibres by the thermolysis and gasification of waste prepreg. Journal of Analytical and Applied Pyrolysis, 2013, 104, 675-683.	5.5	105
20	A numerical study of the influence of microvoids in the transverse mechanical response of unidirectional composites. Composites Science and Technology, 2014, 97, 46-54.	7.8	102
21	Computational micromechanics of fiber kinking in unidirectional FRP under different environmental conditions. Composites Science and Technology, 2017, 144, 26-35.	7.8	102
22	Optimization of curing cycle in carbon fiber-reinforced laminates: Void distribution and mechanical properties. Composites Science and Technology, 2013, 85, 73-82.	7.8	101
23	Roadmap on multiscale materials modeling. Modelling and Simulation in Materials Science and Engineering, 2020, 28, 043001.	2.0	100
24	Physically-sound simulation of low-velocity impact on fiber reinforced laminates. International Journal of Impact Engineering, 2016, 92, 3-17.	5.0	95
25	Determination of the mechanical properties of amorphous materials through instrumented nanoindentation. Acta Materialia, 2012, 60, 3953-3964.	7.9	92
26	The role of interfacial properties on the intralaminar and interlaminar damage behaviour of unidirectional composite laminates: Experimental characterization and multiscale modelling. Composites Part B: Engineering, 2018, 138, 206-221.	12.0	90
27	A self-consistent approach to the elasto-plastic behaviour of two-phase materials including damage. Journal of the Mechanics and Physics of Solids, 2000, 48, 675-692.	4.8	89
28	Micromechanisms of deformation and fracture of polypropylene nonwoven fabrics. International Journal of Solids and Structures, 2011, 48, 153-162.	2.7	89
29	Application of digital image correlation at the microscale in fiber-reinforced composites. Composites Part A: Applied Science and Manufacturing, 2012, 43, 1630-1638.	7.6	89
30	Energy storage in structural composites by introducing CNT fiber/polymer electrolyte interleaves. Scientific Reports, 2018, 8, 3407.	3.3	83
31	Damage micromechanisms and notch sensitivity of glass-fiber non-woven felts: An experimental and numerical study. Journal of the Mechanics and Physics of Solids, 2010, 58, 1628-1645.	4.8	82
32	On the accuracy of mean-field approaches to simulate the plastic deformation of composites. Scripta Materialia, 2002, 46, 525-529.	5.2	80
33	Modeling Lightning Impact Thermo-Mechanical Damage on Composite Materials. Applied Composite Materials, 2014, 21, 149-164.	2.5	80
34	Computational micromechanics evaluation of the effect of fibre shape on the transverse strength of unidirectional composites: An approach to virtual materials design. Composites Part A: Applied Science and Manufacturing, 2016, 91, 484-492.	7.6	77
35	Ballistic performance of hybrid 3D woven composites: Experiments and simulations. Composite Structures, 2015, 127, 141-151.	5.8	72
36	Effect of Glass Fiber Hybridization on the Behavior Under Impact of Woven Carbon Fiber/Epoxy Laminates. Journal of Composite Materials, 2010, 44, 3051-3068.	2.4	71

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37	Microstructure and physical properties of some oxide eutectic composites processed by directional solidification. Acta Materialia, 2000, 48, 4683-4689.	7.9	70
38	Phase Distribution and Residual Stresses in Meltâ€Grown Al₂O₃â€ZrO₂(Y₂O₃) Eutectics. Journal of the American Ceramic Society, 2002, 85, 2025-2032.	3.8	68
39	Piezospectroscopic Study of Residual Stresses in Al₂O₃â€“ZrO₂ Directionally Solidified Eutectics. Journal of the American Ceramic Society, 2000, 83, 2745-2752.	3.8	68
40	Automatic quantification of matrix cracking and fiber rotation by X-ray computed tomography in shear-deformed carbon fiber-reinforced laminates. Composites Science and Technology, 2014, 90, 129-138.	7.8	67
41	Micromechanical modelling of deformation and failure in Tiâ€“6Alâ€“4V/SiC composites. Acta Materialia, 2001, 49, 3505-3519.	7.9	63
42	Mechanisms of shear deformation in fiber-reinforced polymers: experiments and simulations. International Journal of Fracture, 2009, 158, 197-209.	2.2	58
43	Comparison of push-in and push-out tests for measuring interfacial shear strength in nano-reinforced composite materials. Journal of Composite Materials, 2016, 50, 1651-1659.	2.4	54
44	A constitutive model for the in-plane mechanical behavior of nonwoven fabrics. International Journal of Solids and Structures, 2012, 49, 2215-2229.	2.7	53
45	Mechanical behavior and failure micromechanisms of hybrid 3D woven composites in tension. Composites Part A: Applied Science and Manufacturing, 2014, 59, 93-104.	7.6	53
46	Synergistic Effect of Carbon Nanotube and Polyethersulfone on Flame Retardancy of Carbon Fiber Reinforced Epoxy Composites. Industrial & Engineering Chemistry Research, 2014, 53, 1040-1047.	3.7	53
47	Understanding interlaminar toughening of unidirectional CFRP laminates with carbon nanotube veils. Composites Part B: Engineering, 2020, 201, 108372.	12.0	51
48	Influence of the loading path on the strength of fiber-reinforced composites subjected to transverse compression and shear. International Journal of Solids and Structures, 2008, 45, 1663-1675.	2.7	48
49	Prediction of the tensile stress-strain curve and ductility in Al/SiC composites. Scripta Materialia, 1996, 35, 91-97.	5.2	47
50	Determination of damage micromechanisms and fracture resistance of glass fiber/epoxy cross-ply laminate by means of X-ray computed microtomography. Composites Science and Technology, 2012, 72, 350-359.	7.8	46
51	Deformation and energy dissipation mechanisms of needle-punched nonwoven fabrics: A multiscale experimental analysis. International Journal of Solids and Structures, 2015, 64-65, 120-131.	2.7	44
52	An in situ investigation of microscopic infusion and void transport during vacuum-assisted infiltration by means of X-ray computed tomography. Composites Science and Technology, 2015, 119, 12-19.	7.8	43
53	Multiscale Modeling of Composites: Toward Virtual Testing â€¦ and Beyond. Jom, 2013, 65, 215-225.	1.9	41
54	An experimental and numerical study of the influence of local effects on the application of the fibre push-in test. Philosophical Magazine, 2011, 91, 1293-1307.	1.6	40

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55	Inverse notch sensitivity: Cracks can make nonwoven fabrics stronger. Journal of the Mechanics and Physics of Solids, 2015, 77, 61-69.	4.8	37
56	Multiscale virtual testing: the roadmap to efficient design of composites for damage resistance and tolerance. CEAS Aeronautical Journal, 2016, 7, 607-619.	1.7	36
57	Mechanical behavior and deformation micromechanisms of polypropylene nonwoven fabrics as a function of temperature and strain rate. Mechanics of Materials, 2014, 74, 14-25.	3.2	34
58	Stiffness of a curved beam subjected to axial load and large displacements. International Journal of Solids and Structures, 2005, 42, 1537-1545.	2.7	32
59	A Composite Fabrication Sensor Based on Electrochemical Doping of Carbon Nanotube Yarns. Advanced Functional Materials, 2016, 26, 7139-7147.	14.9	32
60	Strength and toughness of structural fibres for composite material reinforcement. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150274.	3.4	32
61	Ballistic performance of hybrid nonwoven/woven polyethylene fabric shields. International Journal of Impact Engineering, 2018, 111, 55-65.	5.0	31
62	Virtual fracture testing of composites: A computational micromechanics approach. Engineering Fracture Mechanics, 2007, 74, 1126-1138.	4.3	29
63	Optimization of microstructures and mechanical properties of composite oriented strand board from reused prepreg. Composite Structures, 2017, 174, 389-398.	5.8	27
64	Interface Characterization in Fiber-Reinforced Polymerâ€“Matrix Composites. Jom, 2017, 69, 13-21.	1.9	27
65	A numerical framework to analyze fracture in composite materials: From R-curves to homogenized softening laws. International Journal of Solids and Structures, 2018, 134, 216-228.	2.7	27
66	Special-purpose elements to impose Periodic Boundary Conditions for multiscale computational homogenization of composite materials with the explicit Finite Element Method. Composite Structures, 2019, 208, 434-441.	5.8	26
67	Numerical analysis of pin on disc tests on Alâ€“Li/SiC composites. Wear, 2005, 259, 609-612.	3.1	25
68	X-ray computed tomography analysis of damage evolution in open hole carbon fiber-reinforced laminates subjected to in-plane shear. Composites Science and Technology, 2016, 133, 40-50.	7.8	23
69	Computational micromechanics model for the analysis of fiber kinking in unidirectional fiber-reinforced polymers. Mechanics of Materials, 2020, 142, 103299.	3.2	23
70	Energy dissipation during delamination in composite materials â€“ An experimental assessment of the cohesive law and the stress-strain field ahead of a crack tip. Composites Science and Technology, 2016, 134, 115-124.	7.8	22
71	A multiscale micromechanical model of needlepunched nonwoven fabrics. International Journal of Solids and Structures, 2016, 96, 81-91.	2.7	22
72	Multiscale modelling of thermoplastic woven fabric composites: From micromechanics to mesomechanics. Composite Structures, 2019, 228, 111340.	5.8	22

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73	An analysis of void formation mechanisms in out-of-autoclave prepregs by means of X-ray computed tomography. Composites Part A: Applied Science and Manufacturing, 2019, 117, 230-242.	7.6	22
74	Influence of fiber orientation on the ballistic performance of needlepunched nonwoven fabrics. Mechanics of Materials, 2016, 94, 106-116.	3.2	20
75	Notch effect in failure of fiberglass non-woven materials. International Journal of Solids and Structures, 2016, 96, 254-264.	2.7	19
76	A level set approach for the analysis of flow and compaction during resin infusion in composite materials. Composites Part A: Applied Science and Manufacturing, 2014, 67, 299-307.	7.6	18
77	Fabric compaction and infiltration during vacuum-assisted resin infusion with and without distribution medium. Journal of Composite Materials, 2017, 51, 687-703.	2.4	18
78	A microstructures generation tool for virtual ply property screening of hybrid composites with high volume fractions of non-circular fibers â€“ VIPER. Composites Part A: Applied Science and Manufacturing, 2020, 129, 105691.	7.6	16
79	A Machine Learning Model to Detect Flow Disturbances during Manufacturing of Composites by Liquid Moulding. Journal of Composites Science, 2020, 4, 71.	3.0	16
80	Fracture behaviour of triaxial braided composites and its simulation using a multi-material shell modelling approach. Engineering Fracture Mechanics, 2018, 188, 268-286.	4.3	15
81	Damage-tolerant, laminated structural supercapacitor composites enabled by integration of carbon nanotube fibres. Multifunctional Materials, 2020, 3, 015001.	3.7	15
82	A stable Xâ€FEM in cohesive transition from closed to open crack. International Journal for Numerical Methods in Engineering, 2015, 101, 540-570.	2.8	14
83	Effect of temperature on the fracture mechanisms of 8090 Alâ€“Li alloy and 8090 Alâ€“Li/SiC composite. Scripta Materialia, 2004, 51, 1111-1115.	5.2	13
84	Numerical Simulation of the Fracture Behavior of Ti/SiC Composites between 20 Â°C and 400 Â°C. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2007, 38, 169-179.	2.2	13
85	Influence of plasma surface treatments on kink band formation in PBO fibers during compression. Journal of Applied Polymer Science, 2012, 123, 2052-2063.	2.6	13
86	Mechanisms of in-plane shear deformation in hybrid three-dimensional woven composites. Journal of Composite Materials, 2015, 49, 3755-3763.	2.4	13
87	The effect of strain rate on the tensile deformation of Ti-6Al-4V/SiC composites. Scripta Materialia, 2001, 44, 2667-2671.	5.2	12
88	Quantitative multi-scale characterization of single basalt fibres: Insights into strength loss mechanisms after thermal conditioning. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 797, 139963.	5.6	12
89	Strength, corrosion resistance and cellular response of interfaces in bioresorbable poly-lactic acid/Mg fiber composites for orthopedic applications. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 123, 104781.	3.1	12
90	Influence of hybridisation on energy absorption of 3D woven composites under low-velocity impact loading. Modelling and experimental validation. International Journal of Impact Engineering, 2022, 165, 104229.	5.0	12

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91	Failure locus of polypropylene nonwoven fabrics under in-plane biaxial deformation. Comptes Rendus - Mecanique, 2012, 340, 307-319.	2.1	11
92	Dynamic characterisation of interlaminar fracture toughness in carbon fibre epoxy composite laminates. Composites Part A: Applied Science and Manufacturing, 2019, 126, 105597.	7.6	11
93	Numerical simulation of the ballistic response of needle-punched nonwoven fabrics. International Journal of Solids and Structures, 2017, 106-107, 56-67.	2.7	10
94	Relations between intralaminar micromechanisms and translaminar fracture behavior of unidirectional FRP supported by experimental micromechanics. Composites Part B: Engineering, 2019, 174, 107000.	12.0	10
95	3D-printed resistive carbon-fiber-reinforced sensors for monitoring the resin frontal flow during composite manufacturing. Sensors and Actuators A: Physical, 2021, 317, 112422.	4.1	10
96	Simulation of corrosion and mechanical degradation of additively manufactured Mg scaffolds in simulated body fluid. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 126, 104881.	3.1	10
97	Interlaminar and Intralaminar Fracture Behavior of Carbon Fiber Reinforced Polymer Composites. Key Engineering Materials, 0, 713, 325-328.	0.4	9
98	Toughness of fiber-reinforced titanium as a function of temperature: experimental results and micromechanical modeling. Acta Materialia, 2004, 52, 3929-3939.	7.9	8
99	Virtual testing of impact in fiber reinforced laminates. , 2015, , 247-270.		8
100	Thermal oxidation of PEPA-terminated polyimide. High Performance Polymers, 2019, 31, 707-718.	1.8	8
101	DAMAGE LOCALIZATION AND FAILURE LOCUS UNDER BIAXIAL LOADING IN GLASS-FIBER NONWOVEN FELTS. International Journal for Multiscale Computational Engineering, 2012, 10, 425-440.	1.2	7
102	Chemical Regeneration of Thermally Conditioned Basalt Fibres. Applied Sciences (Switzerland), 2020, 10, 6674.	2.5	7
103	Strength and toughness of cellular SiC at elevated temperature. Engineering Failure Analysis, 2009, 16, 2598-2603.	4.0	6
104	Novel experimental procedure and determination of full displacement fields of delaminating composite layer interfaces for evaluation of the mode II cohesive law. Engineering Fracture Mechanics, 2015, 149, 326-337.	4.3	6
105	A Multi Material Shell Model for the Mechanical Analysis of Triaxial Braided Composites. Applied Composite Materials, 2017, 24, 1425-1445.	2.5	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. Advanced Composites Letters, 2000, 9, 096369350000900.	1.3	5
108	An analysis of the effect of hydrostatic pressure on the tensile deformation of aluminum-matrix composites. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 341, 256-263.	5.6	5

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109	S-XCT experimental determination of local contact angle and meniscus shape in liquid moulding of composites. Composites Science and Technology, 2020, 199, 108362.	7.8	5
110	A numerical model to simulate the deformation and fracture of polyethylene fibres. Modelling and Simulation in Materials Science and Engineering, 2003, 11, 349-364.	2.0	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. Integrating Materials and Manufacturing Innovation, 2022, 11, 296-311.	2.6	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. Applied Sciences (Switzerland), 2020, 10, 5081.	2.5	3
117	In situ local imaging and analysis of impregnation during liquid moulding of composite materials using synchrotron radiation computed laminography. Composites Science and Technology, 2021, 215, 108999.	7.8	3
118	An X-ray computed tomography analysis of damage induced by thermal cycling in non-crimp fabric composites. Composites Part A: Applied Science and Manufacturing, 2022, 152, 106699.	7.6	3
119	Assessment of stress transfer in laminated structural power composites produced with mechanically-connected electric double-layer capacitors. Composites Science and Technology, 2022, 218, 109128.	7.8	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. Solid Mechanics and Its Applications, 2002, , 417-426.	0.2	0