Tim Osswald

List of Publications by Year
in descending order

112	1,791	304368	414034
papers	citations	22 h-index	32 g-index

119	119	119	1553
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Polymer Processing. , 2006, , .		124
2	Fused filament fabrication melting model. Additive Manufacturing, 2018, 22, 51-59.	1.7	83
3	Modeling the vulcanization reaction of silicone rubber. Polymer Engineering and Science, 2007, 47, 675-683.	1.5	74
4	A thermo-viscoelastic approach for the characterization and modeling of the bending behavior of thermoplastic composites. Composites Part A: Applied Science and Manufacturing, 2016, 90, 22-32.	3.8	67
5	Effects of raster angle on the mechanical properties of PLA and Al/PLA composite part produced by fused deposition modeling. Polymers for Advanced Technologies, 2019, 30, 2122-2135.	1.6	63
6	Nozzle clogging factors during fused filament fabrication of spherical particle filled polymers. Additive Manufacturing, 2018, 23, 206-214.	1.7	51
7	Incorporation of Mg particles into PDLLA regulates mesenchymal stem cell and macrophage responses. Journal of Biomedical Materials Research - Part A, 2016, 104, 866-878.	2.1	50
8	Laser polishing of Cu/PLA composite parts fabricated by fused deposition modeling: Analysis of surface finish and mechanical properties. Polymer Composites, 2020, 41, 1356-1368.	2.3	40
9	Characterization of mechanical properties and fracture mode of PLA and copper/PLA composite part manufactured by fused deposition modeling. SN Applied Sciences, 2019, 1, 1.	1.5	38
10	Fiber Orientation Predictionsâ€"A Review of Existing Models. Journal of Composites Science, 2020, 4, 69.	1.4	37
11	A boundary element simulation of compression mold filling. Polymer Engineering and Science, 1988, 28, 413-420.	1.5	36
12	Process-Induced Fiber Orientation in Fused Filament Fabrication. Journal of Composites Science, 2018, 2, 45.	1.4	36
13	Fiber-Reinforced Composite Sandwich Structures by Co-Curing with Additive Manufactured Epoxy Lattices. Journal of Composites Science, 2019, 3, 53.	1.4	35
14	Failure criterion for PA12 SLS additive manufactured parts. Additive Manufacturing, 2018, 21, 619-627.	1.7	28
15	Measuring fibre orientation in sisal fibre-reinforced, injection moulded polypropylene â€“ Pros and cons of the experimental methods to validate injection moulding simulation. Composites Part A: Applied Science and Manufacturing, 2017, 95, 54-64.	3.8	27
16	A novel fiber length measurement technique for discontinuous fiberâ€reinforced composites: A comparative study with existing methods. Polymer Composites, 2018, 39, 4058-4070.	2.3	27
17	Grooved feed single screw extruders?improving productivity and reducing viscous heating effects. Polymer Engineering and Science, 1998, 38, 1199-1204.	1.5	26
18	Experimental and Numerical Analysis of Fiber Matrix Separation during Compression Molding of Long Fiber Reinforced Thermoplastics. Journal of Composites Science, 2017, 1, 2.	1.4	26

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19	Surface roughness of polyamide 12 parts manufactured using selective laser sintering. Polymer Testing, 2019, 80, 106094.	2.3	26
20	Prediction of Shrinkage and Warpage of Fiber Reinforced Thermoset Composite Parts. Journal of Reinforced Plastics and Composites, 1994, 13, 698-721.	1.6	25
21	Vulcanization of EPDM rubber compounds with and without blowing agents: Identification of reaction events and TTT-diagram using DSC data. Polymer Engineering and Science, 2015, 55, 2073-2088.	1.5	24
22	Fabrication of hybrid composite T-joints by co-curing with 3D printed dual cure epoxy. Composites Part B: Engineering, 2020, 183, 107728.	5.9	24
23	The effects of e-beam irradiation induced cross linking on the friction and wear of polyamide 66 in sliding contact. Wear, 2010, 268, 905-910.	1.5	23
24	Process-induced fiber matrix separation in long fiber-reinforced thermoplastics. Composites Part A: Applied Science and Manufacturing, 2018, 105, 321-333.	3.8	23
25	CAE method for compression molding of carbon fiber-reinforced thermoplastic composite using bulk materials. Composites Part A: Applied Science and Manufacturing, 2018, 114, 388-397.	3.8	22
26	Micro-injection molded, poly(vinyl alcohol)-calcium salt templates for precise customization of 3D hydrogel internal architecture. Acta Biomaterialia, 2019, 95, 258-268.	4.1	22
27	On the use of computational multi-body dynamics analysis in SLS-based 3D printing. Additive Manufacturing, 2016, 12, 291-295.	1.7	21
28	Boundary integral equations for analyzing the flow of a chopped fiber reinforced polymer compound in compression molding. Journal of Non-Newtonian Fluid Mechanics, 1987, 26, 185-206.	1.0	20
29	The History of Tomorrow's Materials: Proteinâ€Based Biopolymers. Plastics Engineering, 2008, 64, 36-40.	0.1	20
30	The effect of micromechanics models on mechanical property predictions for short fiber composites. Composite Structures, 2020, 244, 112229.	3.1	20
31	Modeling processing of silicone rubber: Liquid versus hard silicone rubbers. Journal of Applied Polymer Science, 2011, 119, 1864-1871.	1.3	19
32	Method for timeâ€“temperatureâ€“transformation diagrams using DSC data: Linseed aliphatic epoxy resin. Journal of Applied Polymer Science, 2014, 131, .	1.3	18
33	Failure surface development for ABS fused filament fabrication parts. Additive Manufacturing, 2019, 28, 169-175.	1.7	18
34	Mechanism of fiberâ€“matrix separation in ribbed compression molded parts. Polymer Composites, 2007, 28, 451-457.	2.3	17
35	Simulative Prediction of Fiber-Matrix Separation in Rib Filling During Compression Molding Using a Direct Fiber Simulation. Journal of Composites Science, 2018, 2, 2.	1.4	17
36	Numerical simulation of three-dimensional viscoelastic planar contraction flow using the software OpenFOAM. Computers and Chemical Engineering, 2012, 37, 64-73.	2.0	16

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37	A thermo-viscoelastic approach for the characterization and modeling of the bending behavior of thermoplastic composites â€“ Part II. Composites Part A: Applied Science and Manufacturing, 2017, 96, 67-76.	3.8	16
38	Degree of cure of epoxy/acrylic photopolymers: Characterization with raman spectroscopy and a modified phenomenological model. Polymer Engineering and Science, 2018, 58, 228-237.	1.5	16
39	Evaluation of Single-Lap and Block Shear Test Methods in Adhesively Bonded Composite Joints. Journal of Composites Science, 2021, 5, 27.	1.4	16
40	Processing and rheological behavior of <scp>crossâ€linked</scp> polyethylene containing disulfide bonds. SPE Polymers, 2022, 3, 25-40.	1.4	16
41	Method to account for the fiber orientation of the initial charge on the fiber orientation of finished part in compression molding simulation. Composites Part A: Applied Science and Manufacturing, 2017, 100, 244-254.	3.8	15
42	Neural network feature and architecture optimization for injection molding surface defect prediction of model polypropylene. Polymer Engineering and Science, 2021, 61, 2376-2387.	1.5	15
43	Fibre Length Reduction in Natural Fibre-Reinforced Polymers during Compounding and Injection Mouldingâ€”Experiments Versus Numerical Prediction of Fibre Breakage. Journal of Composites Science, 2018, 2, 20.	1.4	14
44	Thermal curing kinetics optimization of epoxy resin in Digital Light Synthesis. Additive Manufacturing, 2020, 32, 101018.	1.7	14
45	WLF model for the pressure dependence of zero shear viscosity of polycarbonate. Rheologica Acta, 2016, 55, 673-681.	1.1	13
46	A novel extrusion process for the production of polymer micropellets. Polymer Engineering and Science, 2018, 58, 2264-2275.	1.5	13
47	A strength tensor based failure criterion with stress interactions. Polymer Composites, 2018, 39, 2826-2834.	2.3	13
48	Macroscopic fiber orientation model evaluation for concentrated short fiber reinforced polymers in comparison to experimental data. Polymer Composites, 2020, 41, 2542-2556.	2.3	13
49	An integrated model for statistical and vision monitoring in manufacturing transitions. Quality and Reliability Engineering International, 2003, 19, 461-476.	1.4	12
50	Direct Fiber Simulation of a Compression Molded Ribbed Structure Made of a Sheet Molding Compound with Randomly Oriented Carbon/Epoxy Prepreg Strandsâ€”A Comparison of Predicted Fiber Orientations with Computed Tomography Analyses. Journal of Composites Science, 2020, 4, 164.	1.4	12
51	A Finite Element Analysis of the Thermomechanical Behavior of Fiber Reinforced Composites. Journal of Thermoplastic Composite Materials, 1991, 4, 173-189.	2.6	11
52	The dual-reciprocity method for heat transfer in polymer processing. Engineering Analysis With Boundary Elements, 1994, 13, 249-261.	2.0	11
53	Predicting shrinkage and warpage of fiber-reinforced composite parts. Polymer Composites, 1994, 15, 270-277.	2.3	10
54	Chemorheological timeâ€temperatureâ€transformationâ€viscosity diagram: Foamed EPDM rubber compound. Journal of Applied Polymer Science, 2016, 133, .	1.3	10

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55	Quasiâ€isothermal <scp>DSC</scp> testing of epoxy adhesives using initial fast heating rates. Journal of Applied Polymer Science, 2017, 134, 45425.	1.3	10
56	Nozzle flow behavior of aluminum/polycarbonate composites in the material extrusion printing process. Journal of Applied Polymer Science, 2019, 136, 47252.	1.3	10
57	Experimental study of particle migration in polymer processing. Polymer Composites, 2019, 40, 2165-2177.	2.3	10
58	Investigation of the influence of exposure time on the dual-curing reaction of RPU 70 during the DLS process and the resulting mechanical part properties. Additive Manufacturing, 2020, 32, 101002.	1.7	10
59	A Flow-Dependent Fiber Orientation Model. Journal of Composites Science, 2020, 4, 96.	1.4	10
60	Polymer composites: Additive manufacturing of composites. Polymer Composites, 2022, 43, 3496-3497.	2.3	10
61	Predicting the effect of viscosity ratios on the mixing of polymer blends using the boundary element method. Polymer Engineering and Science, 1996, 36, 979-984.	1.5	9
62	Monitoring epoxy and unsaturated polyester reactions under pressureâ€"Reaction rates and mechanical properties. Polymer Engineering and Science, 2009, 49, 2099-2108.	1.5	9
63	Analysis of fiber damage mechanisms during processing of reinforced polymer melts. Engineering Analysis With Boundary Elements, 2002, 26, 621-628.	2.0	8
64	Vibration joining of fiberâ€reinforced thermosets. Polymer Composites, 2010, 31, 1205-1212.	2.3	8
65	<scp>TTT</scp>â€diagram for epoxy film adhesives using quasiâ€isothermal scans with initial fast ramps. Journal of Applied Polymer Science, 2018, 135, 45791.	1.3	8
66	Numerical analysis of mixing in blockâ€head mixing screws. Polymer Engineering and Science, 2019, 59, E88.	1.5	8
67	Experimental Validation of a Direct Fiber Model for Orientation Prediction. Journal of Composites Science, 2020, 4, 59.	1.4	8
68	Cavity vat photopolymerisation for additive manufacturing of polymer-composite 3D objects. Communications Materials, 2021, 2, .	2.9	8
69	Natural Rubber Blend Optimization via Data-Driven Modeling: The Implementation for Reverse Engineering. Polymers, 2022, 14, 2262.	2.0	8
70	Modeling viscoelastic secondary flows in threeâ€dimensional noncircular ducts. Polymer Engineering and Science, 2012, 52, 1715-1723.	1.5	7
71	Progress on the Characterization of the Processâ€Induced Fiber Microstructure of Long Glass Fiberâ€Reinforced Thermoplastics. Plastics Engineering, 2017, 73, 46-47.	0.1	7
72	A Novel CAE Method for Compression Molding Simulation of Carbon Fiber-Reinforced Thermoplastic Composite Sheet Materials. Journal of Composites Science, 2018, 2, 33.	1.4	7

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73	Viscoelastic properties of fused filament fabrication parts. Additive Manufacturing, 2019, 28, 704-710.	1.7	7
74	Dimensional analysis and scaling in mechanical mixing for fabrication of metal matrix nanocomposites. Journal of Manufacturing Processes, 2012, 14, 388-392.	2.8	6
75	Application of thermotropic liquid crystalline polymer reinforced acrylonitrile butadiene styrene in fused filament fabrication. Additive Manufacturing, 2019, 29, 100813.	1.7	6
76	Implementation of shear thinning behavior in the fused filament fabrication melting model: Analytical solution and experimental validation. Additive Manufacturing, 2021, 37, 101687.	1.7	6
77	Comparative study of rhomboidal mixing sections using the boundary element method. Engineering Analysis With Boundary Elements, 2000, 24, 89-94.	2.0	5
78	Theoretical analysis of fiber motion and loads during flow. Polymer Composites, 2004, 25, 1-11.	2.3	5
79	Validating a Failure Surface Developed for ABS Fused Filament Fabrication Parts through Complex Loading Experiments. Journal of Composites Science, 2019, 3, 49.	1.4	5
80	Moduli development of epoxy adhesives during cure. Polymer Testing, 2019, 77, 105863.	2.3	5
81	Effect of gas pressure on the microstructure of parts foamed with the novel microcellular injection molding technology <scp>Kuâ€Fizzâ„¢</scp>. SPE Polymers, 2021, 2, 311-324.	1.4	5
82	Novel modeling approach for fiber breakage during molding of long fiber-reinforced thermoplastics. Physics of Fluids, 2021, 33, .	1.6	5
83	High-force dynamic mechanical analysis of composite sandwich panels for aerospace structures. Composites Part C: Open Access, 2021, 5, 100136.	1.5	5
84	Cell morphologies, mechanical properties, and fiber orientation of glass fiber-reinforced polyamide composites: Influence of subcritical gas-laden pellet injection molding foaming technology. Physics of Fluids, 2022, 34, .	1.6	5
85	Melt Conveying in Single-Screw Extruders: Modeling and Simulation. Polymers, 2022, 14, 875.	2.0	5
86	Three-Dimensional Printed Planar Polymer Photonic Topological Insulator Waveguides and Their Robustness to Lattice Defects. ACS Photonics, 2022, 9, 1793-1802.	3.2	5
87	Conjugated Polymer Photovoltaic Solar Cells: Manufacturing and Increasing Performance. Plastics Engineering, 2010, 66, 26-32.	0.1	4
88	Measuring Fiber Length in the Core and Shell Regions of Injection Molded Long Fiber-Reinforced Thermoplastic Plaques. Journal of Composites Science, 2020, 4, 104.	1.4	4
89	Trends in force and print speed in Material Extrusion. Additive Manufacturing, 2021, 46, 102141.	1.7	4
90	A model for modulus development of dualâ€cure resin systems. Polymer Engineering and Science, 2021, 61, 830-835.	1.5	4

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91	Compounding a High-Permittivity Thermoplastic Material and Its Applicability in Manufacturing of Microwave Photonic Crystals. Materials, 2022, 15, 2492.	1.3	4
92	Prediction of vortex height from mechanical mixing in metal matrix nanocomposite processing by means of dimensional analysis and scaling. Journal of Manufacturing Processes, 2014, 16, 212-217.	2.8	3
93	Validation of Fiber Breakage in Simple Shear Flow with Direct Fiber Simulation. Journal of Composites Science, 2020, 4, 134.	1.4	3
94	Significance of Model Parameter Variations in the pARD-RSC Model. Journal of Composites Science, 2020, 4, 109.	1.4	3
95	Efficient parameter identification for macroscopic fiber orientation models with experimental data and a mechanistic fiber simulation. AIP Conference Proceedings, 2020, , .	0.3	3
96	Modeling and Simulation of High Reynolds' Number Flows During Reaction Injection Mold Filling. International Polymer Processing, 1994, 9, 279-285.	0.3	3
97	Comparative Analysis of the Impact of Additively Manufactured Polymer Tools on the Fiber Configuration of Injection Molded Long-Fiber-Reinforced Thermoplastics. Journal of Composites Science, 2020, 4, 136.	1.4	2
98	Foam Injection Molding of Polypropylene/Zinc Oxide Nanocomposite with Chemical Foaming Agent: Mechanical Properties and Morphology. Journal of Testing and Evaluation, 2019, 47, 998-1008.	0.4	2
99	Understanding softening of amorphous materials for FFF applications. International Polymer Processing, 2022, 37, 120-138.	0.3	2
100	Underwater ultrasonic topological waveguides by metal additive manufacturing. Applied Physics Letters, 2022, 120, .	1.5	2
101	Simulating the Non-Isothermal Mixing of Polymer Blends Using the Boundary Element Method. Journal of Reinforced Plastics and Composites, 1993, 12, 787-799.	1.6	1
102	Influence of selected process parameters on changes of the fiber orientation in unidirectional reinforced thermoplastics during a hot pressing process. Polymer Composites, 2018, 39, 2241-2249.	2.3	1
103	Influence of plantation climate and storage time on thermal and viscoelastic properties of natural rubber. AIMS Bioengineering, 2021, 8, 95-111.	0.6	1
104	Editorial for the Special Issue on Discontinuous Fiber Composites, Volume II. Journal of Composites Science, 2021, 5, 71.	1.4	1
105	Data enriched lubrication force modeling for a mechanistic fiber simulation of short fiber-reinforced thermoplastics. Physics of Fluids, 2021, 33, 053107.	1.6	1
106	Experimental Investigation of In-Plane Shear Behaviour of Thermoplastic Fibre-Reinforced Composites under Thermoforming Process Conditions. Journal of Composites Science, 2021, 5, 248.	1.4	1
107	Targeted Temperature Manipulation and Analysis of the Influence on Mechanical Properties in Large-Scale Extrusion Additive Manufacturing. Applied Sciences (Switzerland), 2022, 12, 2998.	1.3	1
108	Simulating the flow of multi-domain polymer blends during mixing using BEM. Engineering Analysis With Boundary Elements, 1995, 16, 197-202.	2.0	0

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109	Novel BEM Simulation of Mixing in Polymer Flows Including Non-Linear Effects. Journal of Reinforced Plastics and Composites, 2000, 19, 1474-1482.	1.6	0
110	Modeling of Fiber Jamming Phenomena during Processing of Fiber Reinforced Composite Parts. Key Engineering Materials, 2010, 425, 31-44.	0.4	0
111	Editorial for the Special Issue on Discontinuous Fiber Composites. Journal of Composites Science, 2018, 2, 63.	1.4	0
112	Application of the stress interaction failure criterion in platelet composite compression molded parts. Polymer Composites, 2021, 42, 3632-3643.	2.3	0