Christopher J Tuck

List of Publications by Year
in descending order

136 papers	11,186 citations	50276 46 h-index	30922 102 g-index
142 all docs	142 docs citations	142 times ranked	8737 citing authors

#	Article	IF	Citations
1	3D printing of Aluminium alloys: Additive Manufacturing of Aluminium alloys using selective laser melting. Progress in Materials Science, 2019, 106, 100578.	32.8	872
2	Effect of the build orientation on the mechanical properties and fracture modes of SLM Tiâ€“6Alâ€“4V. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 616, 1-11.	5.6	702
3	Laser sintering of polyamides and other polymers. Progress in Materials Science, 2012, 57, 229-267.	32.8	623
4	Reducing porosity in AlSi10Mg parts processed by selective laser melting. Additive Manufacturing, 2014, 1-4, 77-86.	3.0	608
5	The microstructure and mechanical properties of selectively laser melted AlSi10Mg: The effect of a conventional T6-like heat treatment. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 667, 139-146.	5.6	478
6	A mechanical property evaluation of graded density Al-Si10-Mg lattice structures manufactured by selective laser melting. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 670, 264-274.	5.6	461
7	The cost of additive manufacturing: machine productivity, economies of scale and technology-push. Technological Forecasting and Social Change, 2016, 102, 193-201.	11.6	432
8	Insights into the mechanical properties of several triply periodic minimal surface lattice structures made by polymer additive manufacturing. Polymer, 2018, 152, 62-71.	3.8	371
9	On the Texture Formation of Selective Laser Melted Ti-6Al-4V. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 2863-2872.	2.2	264
10	Compressive failure modes and energy absorption in additively manufactured double gyroid lattices. Additive Manufacturing, 2017, 16, 24-29.	3.0	258
11	A Study on the Laser Spatter and the Oxidation Reactions During Selective Laser Melting of 316L Stainless Steel, Al-Si10-Mg, and Ti-6Al-4V. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 3842-3851.	2.2	253
12	Quantification and characterisation of porosity in selectively laser melted Alâ€“Si10â€“Mg using X-ray computed tomography. Materials Characterization, 2016, 111, 193-204.	4.4	249
13	On the formation of AlSi10Mg single tracks and layers in selective laser melting: Microstructure and nano-mechanical properties. Journal of Materials Processing Technology, 2016, 230, 88-98.	6.3	248
14	Cost estimation for rapid manufacturing - laser sintering production for low to medium volumes. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2006, 220, 1417-1427.	2.4	242
15	Effective design and simulation of surface-based lattice structures featuring volume fraction and cell type grading. Materials and Design, 2018, 155, 220-232.	7.0	241
16	Improving the fatigue behaviour of a selectively laser melted aluminium alloy: Influence of heat treatment and surface quality. Materials and Design, 2016, 104, 174-182.	7.0	240
17	On the Precipitation Hardening of Selective Laser Melted AlSi10Mg. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 3337-3341.	2.2	220
18	An investigation into reinforced and functionally graded lattice structures. Journal of Cellular Plastics, 2017, 53, 151-165.	2.4	205

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19	Processing of a Polyamide-12/carbon nanofibre composite by laser sintering. Polymer Testing, 2011, 30, 94-100.	4.8	195
20	3D printing of tablets using inkjet with UV photoinitiation. International Journal of Pharmaceutics, 2017, 529, 523-530.	5.2	157
21	Sustainability of additive manufacturing: measuring the energy consumption of the laser sintering process. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2011, 225, 2228-2239.	2.4	135
22	Rapid manufacturing facilitated customization. International Journal of Computer Integrated Manufacturing, 2008, 21, 245-258.	4.6	132
23	Transparency Builtâ€in. Journal of Industrial Ecology, 2013, 17, 418-431.	5.5	131
24	A voxel-based method of constructing and skinning conformal and functionally graded lattice structures suitable for additive manufacturing. Additive Manufacturing, 2017, 13, 1-13.	3.0	125
25	Additive manufacturing of metamaterials: A review. Additive Manufacturing, 2020, 36, 101562.	3.0	125
26	An experimental study into the effects of bulk and flow behaviour of laser sintering polymer powders on resulting part properties. Journal of Materials Processing Technology, 2015, 215, 239-250.	6.3	119
27	Fractal scan strategies for selective laser melting of â€˜unweldableâ€™ nickel superalloys. Additive Manufacturing, 2017, 15, 113-122.	3.0	104
28	The formation of Î± + Î² microstructure in as-fabricated selective laser melting of Tiâ€“6Alâ€“4V. Journal of Materials Research, 2014, 29, 2028-2035.	2.6	98
29	Design and characterisation of food grade powders and inks for microstructure control using 3D printing. Journal of Food Engineering, 2018, 220, 12-19.	5.2	97
30	Mechanical Properties of Ti-6Al-4V Selectively Laser Melted Parts with Body-Centred-Cubic Lattices of Varying cell size. Experimental Mechanics, 2015, 55, 1261-1272.	2.0	91
31	Rapid manufacturing: impact on supply chain methodologies and practice. International Journal of Services and Operations Management, 2007, 3, 1.	0.2	88
32	Selective laser melting of aluminum alloys. MRS Bulletin, 2017, 42, 311-319.	3.5	88
33	A comparison of Ti-6Al-4V in-situ alloying in Selective Laser Melting using simply-mixed and satellited powder blend feedstocks. Materials Characterization, 2018, 143, 118-126.	4.4	88
34	Shape Complexity and Process Energy Consumption in Electron Beam Melting: A Case of Something for Nothing in Additive Manufacturing?. Journal of Industrial Ecology, 2017, 21, S157.	5.5	85
35	An empirical study into laser sintering of ultra-high molecular weight polyethylene (UHMWPE). Journal of Materials Processing Technology, 2010, 210, 72-80.	6.3	82
36	Make or buy analysis for rapid manufacturing. Rapid Prototyping Journal, 2007, 13, 23-29.	3.2	76

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37	Free-Radical Polymerization in Ionic Liquids: The Case for a Protected Radical. Macromolecules, 2008, 41, 2814-2820.	4.8	68
38	Universal mobility characteristics of graphene originating from charge scattering by ionised impurities. Communications Physics, 2021, 4, .	5.3	65
39	Water-based 3D inkjet printing of an oral pharmaceutical dosage form. International Journal of Pharmaceutics, 2019, 564, 359-368.	5.2	62
40	Inkjet printing of polyimide insulators for the 3<scp>D</scp> printing of dielectric materials for microelectronic applications. Journal of Applied Polymer Science, 2016, 133, .	2.6	61
41	3D inkjet-printed UV-curable inks for multi-functional electromagnetic applications. Additive Manufacturing, 2017, 13, 143-148.	3.0	59
42	Creep behaviour of inconel 718 processed by laser powder bed fusion. Journal of Materials Processing Technology, 2018, 256, 13-24.	6.3	58
43	Porous ceramics prepared from aqueous foams. Journal of Materials Science Letters, 1999, 18, 1003-1005.	0.5	52
44	Effect of long-term ageing on the tensile properties of a polyamide 12 laser sintering material. Polymer Testing, 2010, 29, 483-493.	4.8	50
45	3D Inkjet Printing of Electronics Using UV Conversion. Advanced Materials Technologies, 2017, 2, 1700134.	5.8	50
46	Additive Manufacturing for Mass Customization. Springer Series in Advanced Manufacturing, 2011, , 275-289.	0.5	48
47	A new photocrosslinkable polycaprolactoneâ€based ink for threeâ€dimensional inkjet printing. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2017, 105, 1645-1657.	3.4	48
48	Three dimensional ink-jet printing of biomaterials using ionic liquids and co-solvents. Faraday Discussions, 2016, 190, 509-523.	3.2	47
49	3D reactive inkjet printing of polydimethylsiloxane. Journal of Materials Chemistry C, 2017, 5, 9733-9743.	5.5	47
50	Empirical laser sintering time estimator for Duraform PA. International Journal of Production Research, 2006, 44, 5131-5146.	7.5	46
51	Calorimetric study and microstructure analysis of the order-disorder phase transformation in silicon steel built by SLM. Journal of Alloys and Compounds, 2017, 722, 293-301.	5.5	46
52	Additive manufacture of complex 3D Au-containing nanocomposites by simultaneous two-photon polymerisation and photoreduction. Scientific Reports, 2017, 7, 17150.	3.3	46
53	Identification of Novel â€œInksâ€•for 3D Printing Using High-Throughput Screening: Bioresorbable Photocurable Polymers for Controlled Drug Delivery. ACS Applied Materials & Interfaces, 2018, 10, 6841-6848.	8.0	44
54	Using Laser Ultrasound to Detect Subsurface Defects in Metal Laser Powder Bed Fusion Components. Jom, 2018, 70, 378-383.	1.9	44

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55	Selective recrystallization of cellulose composite powders and microstructure creation through 3D binder jetting. Carbohydrate Polymers, 2018, 200, 229-238.	10.2	43
56	Printability of elastomer latex for additive manufacturing or 3D printing. Journal of Applied Polymer Science, 2016, 133, .	2.6	42
57	The Effects of Feature Sizes in Selectively Laser Melted Ti-6Al-4V Parts on the Validity of Optimised Process Parameters. Materials, 2020, 13, 117.	2.9	41
58	The pivotal role of rapid manufacturing in the production of cost-effective customised products. International Journal of Mass Customisation, 2006, 1, 360.	1.2	39
59	Microstructure of Ti-6Al-4V produced by selective laser melting. Journal of Physics: Conference Series, 2012, 371, 012084.	0.4	39
60	An Investigation of the Behavior of Solvent based Polycaprolactone ink for Material Jetting. Scientific Reports, 2016, 6, 20852.	3.3	39
61	On the thermal conductivity of AlSi10Mg and lattice structures made by laser powder bed fusion. Additive Manufacturing, 2020, 34, 101214.	3.0	39
62	Combined Inkjet Printing and Infrared Sintering of Silver Nanoparticles using a Swathe-by-Swathe and Layer-by-Layer Approach for 3-Dimensional Structures. ACS Applied Materials & Interfaces, 2017, 9, 6560-6570.	8.0	38
63	3-Dimensional inkjet printing of macro structures from silver nanoparticles. Materials and Design, 2018, 139, 81-88.	7.0	38
64	Rapid manufactured textiles. International Journal of Computer Integrated Manufacturing, 2007, 20, 96-105.	4.6	37
65	Towards digital metal additive manufacturing via high-temperature drop-on-demand jetting. Additive Manufacturing, 2019, 30, 100930.	3.0	36
66	Rheological Tunability of Perovskite Precursor Solutions: From Spin Coating to Inkjet Printing Process. Nanomaterials, 2019, 9, 582.	4.1	31
67	Aging behavior of thermoplastic elastomers in the laser sintering process. Journal of Materials Research, 2014, 29, 1841-1851.	2.6	30
68	The effects of bidirectional evolutionary structural optimization parameters on an industrial designed component for additive manufacture. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2013, 227, 794-807.	2.4	27
69	Surface microstructuring to modify wettability for 3D printing of nano-filled inks. Chemical Engineering Research and Design, 2016, 109, 414-420.	5.6	27
70	Multiplexed optical fibre Fabry-Perot sensors for strain metrology. Smart Materials and Structures, 1999, 8, 549-553.	3.5	26
71	Multifunctional Bioinstructive 3D Architectures to Modulate Cellular Behavior. Advanced Functional Materials, 2019, 29, 1902016.	14.9	25
72	Interâ€Flake Quantum Transport of Electrons and Holes in Inkjetâ€Printed Graphene Devices. Advanced Functional Materials, 2021, 31, 2007478.	14.9	25

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73	Additive Manufacture of Three Dimensional Nanocomposite Based Objects through Multiphoton Fabrication. Polymers, 2016, 8, 325.	4.5	24
74	Band gap behaviour of optimal one-dimensional composite structures with an additive manufactured stiffener. Composites Part B: Engineering, 2018, 153, 26-35.	12.0	24
75	Evolution of carbon nanotubes and their metallurgical reactions in Al-based composites in response to laser irradiation during selective laser melting. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 765, 138307.	5.6	23
76	Scanning photocurrent microscopy of 3D printed light trapping structures in dye-sensitized solar cells. Solar Energy Materials and Solar Cells, 2018, 180, 103-109.	6.2	22
77	Dynamics of water evaporation from porous asphalt. Construction and Building Materials, 2019, 202, 406-414.	7.2	22
78	A Tripropylene Glycol Diacrylate-based Polymeric Support Ink for Material Jetting. Additive Manufacturing, 2017, 16, 153-161.	3.0	21
79	A combined inverse finite element â€“ elastoplastic modelling method to simulate the size-effect in nanoindentation and characterise materials from the nano to micro-scale. International Journal of Solids and Structures, 2017, 104-105, 25-34.	2.7	21
80	Reactive material jetting of polyimide insulators for complex circuit board design. Additive Manufacturing, 2019, 25, 477-484.	3.0	21
81	The Impact of Additive Manufacturing on the Flexibility of a Manufacturing Supply Chain. Applied Sciences (Switzerland), 2021, 11, 3707.	2.5	21
82	Staged thermomechanical testing of nickel superalloys produced by selective laser melting. Materials and Design, 2017, 133, 520-527.	7.0	20
83	Low cost optical fibre based Fabryâ€“Perot strain sensor production. Measurement Science and Technology, 2006, 17, 2206-2212.	2.6	19
84	Evaluation of laser ultrasonic testing for inspection of metal additive manufacturing. Proceedings of SPIE, 2015, , .	0.8	19
85	The influence of printing parameters on multi-material two-photon polymerisation based micro additive manufacturing. Additive Manufacturing, 2022, 51, 102575.	3.0	19
86	Development, printability and post-curing studies of formulations of materials resistant to microbial attachment for use in inkjet based 3D printing. Rapid Prototyping Journal, 2016, 22, 835-841.	3.2	18
87	An investigation into the depth and time dependent behavior of UV cured 3D ink jet printed objects. Journal of Materials Research, 2017, 32, 1407-1420.	2.6	17
88	Spreading of the nanofluid triple line in ink jet printed electronics tracks. Additive Manufacturing, 2016, 11, 77-84.	3.0	16
89	3D-printed components for quantum devices. Scientific Reports, 2018, 8, 8368.	3.3	16
90	High-throughput characterization of fluid properties to predict droplet ejection for three-dimensional inkjet printing formulations. Additive Manufacturing, 2019, 29, 100792.	3.0	16

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91	Creation of Food Structures Through Binder Jetting. , 2019, , 257-288.		16
92	Nanoindentation Shows Uniform Local Mechanical Properties Across Melt Pools And Layers Produced By Selective Laser Melting Of AlSi 10Mg Alloy. Advanced Materials Letters, 2016, 7, 13-16.	0.6	15
93	Residual polymer stabiliser causes anisotropic electrical conductivity during inkjet printing of metal nanoparticles. Communications Materials, 2021, 2, .	6.9	14
94	Fluid Gels: a New Feedstock for High Viscosity Jetting. Food Biophysics, 2018, 13, 175-185.	3.0	12
95	Laser calorimetry for assessment of melting behaviour in multi-walled carbon nanotube decorated aluminium by laser powder bed fusion. CIRP Annals - Manufacturing Technology, 2020, 69, 197-200.	3.6	12
96	Fracture Mechanisms in High-Cycle Fatigue of Selective Laser Melted Ti-6Al-4V. Key Engineering Materials, 0, 627, 125-128.	0.4	11
97	A Reactive Prodrug Ink Formulation Strategy for Inkjet 3D Printing of Controlled Release Dosage Forms and Implants. Advanced Therapeutics, 2020, 3, 1900187.	3.2	11
98	Direct ink writing of boron carbide monoliths. Journal of the European Ceramic Society, 2021, 41, 76-92.	5.7	11
99	Development of Conductive Gelatine-Methacrylate Inks for Two-Photon Polymerisation. Polymers, 2021, 13, 1038.	4.5	10
100	UV-curable silicone materials with tuneable mechanical properties for 3D printing. Materials and Design, 2021, 205, 109681.	7.0	10
101	An imidazolium-based supramolecular gelator enhancing interlayer adhesion in 3D printed dual network hydrogels. Materials and Design, 2021, 206, 109792.	7.0	10
102	The effects of new technology adoption on employee skills in the prosthetics profession. International Journal of Production Research, 2008, 46, 6461-6478.	7.5	9
103	Realised levels of geometric complexity in additive manufacturing. International Journal of Product Development, 2011, 13, 222.	0.2	9
104	Optimisation of Substrate Angles for Multi-material and Multi-functional Inkjet Printing. Scientific Reports, 2018, 8, 9030.	3.3	9
105	Functionalized Gold Nanoparticles with a Cohesion Enhancer for Robust Flexible Electrodes. ACS Applied Nano Materials, 2022, 5, 6708-6716.	5.0	9
106	An inverse method for determining the spatially resolved properties of viscoelasticâ€“viscoplastic three-dimensional printed materials. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150477.	2.1	8
107	Dispersion and stability of colloidal boron carbide suspensions. Ceramics International, 2020, 46, 27957-27966.	4.8	8
108	Ink-jet 3D printing as a strategy for developing bespoke non-eluting biofilm resistant medical devices. Biomaterials, 2022, 281, 121350.	11.4	8

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109	Exploiting Generative Design for 3D Printing of Bacterial Biofilm Resistant Composite Devices. Advanced Science, 2021, 8, e2100249.	11.2	7
110	<title>Multifunctional fiber optic sensors for cure and temperature monitoring</title>. , 1999, , .		6
111	Bespoke 3D-Printed Polydrug Implants Created via Microstructural Control of Oligomers. ACS Applied Materials & Interfaces, 2021, 13, 38969-38978.	8.0	6
112	Reactive Jetting of High Viscosity Nanocomposites for Dielectric Elastomer Actuation. Advanced Materials Technologies, 0, , 2101111.	5.8	6
113	Nano-hardness and microstructure of selective laser melted AlSi10Mg scan tracks. Proceedings of SPIE, 2015, , .	0.8	5
114	The Use of Laser Ultrasound to Detect Defects in Laser Melted Parts. Minerals, Metals and Materials Series, 2017, , 105-116.	0.4	5
115	Design and optical characterisation of an efficient light trapping structure for dye-sensitized solar cell integrated windows. Building Simulation, 2019, 12, 41-49.	5.6	5
116	Reducing production losses in additive manufacturing using overall equipment effectiveness. Additive Manufacturing, 2022, 56, 102904.	3.0	5
117	Application of Nanoparticles in Manufacturing. , 2015, , 1-53.		4
118	Antimicrobial â€˜inksâ€™ for 3D printing: block copolymer-silver nanoparticle composites synthesised using supercritical CO₂. Polymer Chemistry, 0, , .	3.9	4
119	Management and Implementation of Rapid Manufacturing. , 2006, , 159-173.		3
120	Body-fitting customisation of motorcycle seats: an investigation of consumer requirements. International Journal of Mass Customisation, 2008, 2, 375.	1.2	3
121	A Novel Approach to Design Lesion-Specific Stents for Minimum Recoil. Journal of Medical Devices, Transactions of the ASME, 2017, 11, .	0.7	3
122	Multi-branched benzylidene ketone based photoinitiators for multiphoton fabrication. Additive Manufacturing, 2017, 16, 206-212.	3.0	3
123	Developing an Understanding of the Cost of Additive Manufacturing. , 2019, , 67-83.		3
124	Application of Nanoparticles in Manufacturing. , 2016, , 1219-1278.		3
125	Effects of Net and Solid Skins on Self-Supporting Lattice Structures. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 83-89.	0.5	3
126	Laser micromachined and acid-etched Fabry-Perot cavities in silica fibres. , 2005, , .		2

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127	Special issue collection on additive manufacturing (AM). Surface Topography: Metrology and Properties, 2016, 4, 020201.	1.6	2
128	Additive Manufacturing of a Terahertz Back-to-Back Horn Antenna for Use in Life Sciences. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2022, 12, 595-601.	2.5	2
129	3D reactive inkjet printing of bisphenol A-polycarbonate. Additive Manufacturing, 2022, 54, 102745.	3.0	2
130	<title>Multiplexed optical fiber Fabry-Perot sensors for strain metrology</title>. , 1999, , .		1
131	Modulating Two-Photon Polymerisation Fabrication Parameters towards the Production of Gradient Index Optics. , 2019, , .		1
132	Stochastic design for additive manufacture of true biomimetic populations. Additive Manufacturing, 2022, 55, 102739.	3.0	1
133	<title>New techniques for manufacturing optical-fiber-based fiber Fabry-Perot sensors</title>. , 2002, 4694, 43.		0
134	Extreme Customization: Rapid Manufacturing Products that Enhance the Consumer. , 2009, , 537-554.		0
135	Multimaterial Manufacture Through Combining Optical Tweezers with Multiphoton Fabrication. Journal of Laser Micro Nanoengineering, 0, , .	0.1	0
136	Analytical Design of Additively Manufactured Focusing Metamaterial. , 2020, , .		0