

Albert C To

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

130
papers

3,294
citations

31
h-index

53
g-index

138
ext. papers

4,100
ext. citations

4.2
avg. IF

6.05
L-index

#	Paper	IF	Citations
130	Current and future trends in topology optimization for additive manufacturing. <i>Structural and Multidisciplinary Optimization</i> , 2018 , 57, 2457-2483	3.6	305
129	Interplay between phononic bandgaps and piezoelectric microstructures for energy harvesting. <i>Journal of the Mechanics and Physics of Solids</i> , 2009 , 57, 621-633	5	144
128	Efficient Design-Optimization of Variable-Density Hexagonal Cellular Structure by Additive Manufacturing: Theory and Validation. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2015 , 137,	3.3	140
127	Functionally graded lattice structure topology optimization for the design of additive manufactured components with stress constraints. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019 , 344, 334-359	5.7	125
126	Efficient design optimization of variable-density cellular structures for additive manufacturing: theory and experimental validation. <i>Rapid Prototyping Journal</i> , 2017 , 23, 660-677	3.8	124
125	Finite element modeling and validation of thermomechanical behavior of Ti-6Al-4V in directed energy deposition additive manufacturing. <i>Additive Manufacturing</i> , 2016 , 12, 169-177	6.1	107
124	Perfectly matched multiscale simulations. <i>Physical Review B</i> , 2005 , 72,	3.3	97
123	Statistical volume element method for predicting microstructure constitutive property relations. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2008 , 197, 3516-3529	5.7	93
122	Role of anisotropic properties on topology optimization of additive manufactured load bearing structures. <i>Scripta Materialia</i> , 2017 , 135, 148-152	5.6	90
121	Biomimetic staggered composites with highly enhanced energy dissipation: Modeling, 3D printing, and testing. <i>Journal of the Mechanics and Physics of Solids</i> , 2015 , 83, 285-300	5	82
120	Coupling lattice structure topology optimization with design-dependent feature evolution for additive manufactured heat conduction design. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018 , 332, 408-439	5.7	82
119	Broadband wave filtering of bioinspired hierarchical phononic crystal. <i>Applied Physics Letters</i> , 2013 , 102, 121910	3.4	69
118	Wavelet denoising techniques with applications to experimental geophysical data. <i>Signal Processing</i> , 2009 , 89, 144-160	4.4	65
117	A modified method for estimating inherent strains from detailed process simulation for fast residual distortion prediction of single-walled structures fabricated by directed energy deposition. <i>Additive Manufacturing</i> , 2018 , 23, 471-486	6.1	64
116	An inherent strain based multiscale modeling framework for simulating part-scale residual deformation for direct metal laser sintering. <i>Additive Manufacturing</i> , 2019 , 28, 406-418	6.1	62
115	Variation of hardness, microstructure, and Laves phase distribution in direct laser deposited alloy 718 cuboids. <i>Materials and Design</i> , 2017 , 119, 188-198	8.1	61
114	Deposition path planning-integrated structural topology optimization for 3D additive manufacturing subject to self-support constraint. <i>CAD Computer Aided Design</i> , 2017 , 91, 27-45	2.9	57

113	Immersed electrokinetic finite element method. <i>International Journal for Numerical Methods in Engineering</i> , 2007 , 71, 379-405	2.4	51
112	Perfectly matched multiscale simulations for discrete lattice systems: Extension to multiple dimensions. <i>Physical Review B</i> , 2006 , 74,	3.3	49
111	Ultra-low Thermal Conductivity in Si/Ge Hierarchical Superlattice Nanowire. <i>Scientific Reports</i> , 2015 , 5, 16697	4.9	48
110	Quantitative texture prediction of epitaxial columnar grains in additive manufacturing using selective laser melting. <i>Additive Manufacturing</i> , 2017 , 16, 58-64	6.1	46
109	On utilizing topology optimization to design support structure to prevent residual stress induced build failure in laser powder bed metal additive manufacturing. <i>Additive Manufacturing</i> , 2019 , 27, 290-304	6.1	45
108	Transversely isotropic hyperelastic-viscoplastic model for glassy polymers with application to additive manufactured photopolymers. <i>International Journal of Plasticity</i> , 2016 , 80, 56-74	7.6	45
107	Proportional Topology Optimization: A New Non-Sensitivity Method for Solving Stress Constrained and Minimum Compliance Problems and Its Implementation in MATLAB. <i>PLoS ONE</i> , 2015 , 10, e0145041	3.7	43
106	Heats of vaporization of room temperature ionic liquids by tunable vacuum ultraviolet photoionization. <i>Journal of Physical Chemistry B</i> , 2010 , 114, 1361-7	3.4	43
105	Part-scale build orientation optimization for minimizing residual stress and support volume for metal additive manufacturing: Theory and experimental validation. <i>CAD Computer Aided Design</i> , 2019 , 113, 1-23	2.9	42
104	Predicting Microstructure Evolution During Directed Energy Deposition Additive Manufacturing of Ti-6Al-4V. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2018 , 140,	3.3	39
103	Natural Frequency Optimization of Variable-Density Additive Manufactured Lattice Structure: Theory and Experimental Validation. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2018 , 140,	3.3	39
102	Natural frequency optimization of 3D printed variable-density honeycomb structure via a homogenization-based approach. <i>Additive Manufacturing</i> , 2018 , 20, 189-198	6.1	38
101	Modified inherent strain method for efficient prediction of residual deformation in direct metal laser sintered components. <i>Computational Mechanics</i> , 2019 , 64, 1719-1733	4	35
100	Vibration promotes heat welding of single-walled carbon nanotubes. <i>Chemical Physics Letters</i> , 2011 , 502, 231-234	2.5	33
99	Concurrent lattice infill with feature evolution optimization for additive manufactured heat conduction design. <i>Structural and Multidisciplinary Optimization</i> , 2018 , 58, 511-535	3.6	31
98	Anomalous heat conduction behavior in thin finite-size silicon nanowires. <i>Nanotechnology</i> , 2010 , 21, 155304	3.4	31
97	Hydrogen storage in heat welded random CNT network structures. <i>International Journal of Hydrogen Energy</i> , 2015 , 40, 403-411	6.7	30
96	Topology optimization for hybrid additive-subtractive manufacturing. <i>Structural and Multidisciplinary Optimization</i> , 2017 , 55, 1281-1299	3.6	30

95	Ultrahigh Thermal Rectification in Pillared Graphene Structure with Carbon Nanotube-Graphene Intramolecular Junctions. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 29-35	9.5	29
94	Multiresolution molecular mechanics: Statics. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2013 , 258, 26-38	5.7	29
93	Highly Enhanced Damping Figure of Merit in Biomimetic Hierarchical Staggered Composites. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2014 , 81,	2.7	25
92	Topology optimization for energy dissipation design of lattice structures through snap-through behavior. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020 , 358, 112641	5.7	24
91	Design, testing, and mechanical behavior of additively manufactured casing with optimized lattice structure. <i>Additive Manufacturing</i> , 2018 , 22, 462-471	6.1	23
90	An analytical model of the melt pool and single track in coaxial laser direct metal deposition (LDMD) additive manufacturing. <i>Journal of Micromechanics and Molecular Physics</i> , 2017 , 02, 1750013	1.4	22
89	Materials integrity in microsystems: a framework for a petascale predictive-science-based multiscale modeling and simulation system. <i>Computational Mechanics</i> , 2008 , 42, 485-510	4	20
88	Invited review: Machine learning for materials developments in metals additive manufacturing. <i>Additive Manufacturing</i> , 2020 , 36, 101641	6.1	19
87	Multiresolution molecular mechanics: A unified and consistent framework for general finite element shape functions. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015 , 283, 384-418	5.7	18
86	Surface effects on stacking fault and twin formation in fcc nanofilms: A first-principles study. <i>Computational Materials Science</i> , 2011 , 50, 3342-3345	3.2	18
85	Mean-field polycrystal plasticity modeling with grain size and shape effects for laser additive manufactured FCC metals. <i>International Journal of Solids and Structures</i> , 2017 , 112, 35-42	3.1	17
84	Tensile behavior of heat welded CNT network structures. <i>Computational Materials Science</i> , 2014 , 88, 14-21	3.2	17
83	Heat welding of non-orthogonal X-junction of single-walled carbon nanotubes. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2012 , 46, 30-32	3	17
82	Effects of welding on thermal conductivity of randomly oriented carbon nanotube networks. <i>International Journal of Heat and Mass Transfer</i> , 2014 , 70, 803-810	4.9	16
81	Full waveform inversion of a 3-D source inside an artificial rock. <i>Journal of Sound and Vibration</i> , 2005 , 285, 835-857	3.9	15
80	Sensitivity analysis and lattice density optimization for sequential inherent strain method used in additive manufacturing process. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020 , 370, 113231	5.7	15
79	Manufacturing cost constrained topology optimization for additive manufacturing. <i>Frontiers of Mechanical Engineering</i> , 2019 , 14, 213-221	3.3	14
78	Carbon nanotube-fullerene hybrid nanostructures by C bombardment: formation and mechanical behavior. <i>Physical Chemistry Chemical Physics</i> , 2014 , 16, 21615-9	3.6	14

77	A stochastic algorithm for modeling heat welded random carbon nanotube network. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2013 , 259, 1-9	5.7	14
76	A finite temperature continuum theory based on interatomic potential in crystalline solids. <i>Computational Mechanics</i> , 2008 , 42, 531-541	4	14
75	Propagation of a mode-III interfacial conductive crack along a conductive interface between two piezoelectric materials. <i>Wave Motion</i> , 2006 , 43, 368-386	1.8	14
74	Effects of lithium doping on hydrogen storage properties of heat welded random CNT network structures. <i>International Journal of Hydrogen Energy</i> , 2016 , 41, 8246-8255	6.7	13
73	Multiresolution Molecular Mechanics: Dynamics. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2014 , 274, 42-55	5.7	13
72	Arbitrary void feature control in level set topology optimization. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2017 , 324, 595-618	5.7	13
71	Surface structure and properties of functionalized nanodiamonds: a first-principles study. <i>Nanotechnology</i> , 2011 , 22, 065706	3.4	12
70	Conforming local meshfree method. <i>International Journal for Numerical Methods in Engineering</i> , 2011 , 86, 335-357	2.4	12
69	Topology optimization design of stretchable metamaterials with B ζ zier skeleton explicit density (BSED) representation algorithm. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020 , 366, 113093	5.7	12
68	Compressive Behavior and Deformation Mechanism of Nanoporous Open-Cell Foam with Ultrathin Ligaments. <i>Journal of Nanomechanics & Micromechanics</i> , 2014 , 4,		11
67	Mechanical properties of SWNT X-Junctions through molecular dynamics simulation. <i>International Journal of Smart and Nano Materials</i> , 2012 , 3, 33-46	3.6	11
66	Inherent strain homogenization for fast residual deformation simulation of thin-walled lattice support structures built by laser powder bed fusion additive manufacturing. <i>Additive Manufacturing</i> , 2020 , 32, 101091	6.1	11
65	Distortion energy-based topology optimization design of hyperelastic materials. <i>Structural and Multidisciplinary Optimization</i> , 2019 , 59, 1895-1913	3.6	11
64	Topology optimization based on deep representation learning (DRL) for compliance and stress-constrained design. <i>Computational Mechanics</i> , 2020 , 66, 449-469	4	10
63	Linear and nonlinear topology optimization design with projection-based ground structure method (P-GSM). <i>International Journal for Numerical Methods in Engineering</i> , 2020 , 121, 2437-2461	2.4	10
62	Spurious heat conduction behavior of finite-size graphene nanoribbon under extreme uniaxial strain caused by the AIREBO potential. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2018 , 96, 46-53	3	10
61	A level-set based continuous scanning path optimization method for reducing residual stress and deformation in metal additive manufacturing. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020 , 360, 112719	5.7	10
60	Length and temperature dependence of the mechanical properties of finite-size carbyne. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2017 , 93, 124-131	3	9

59	Effects of nanobuds and heat welded nanobuds chains on mechanical behavior of carbon nanotubes. <i>Computational Materials Science</i> , 2015 , 109, 49-55	3.2	9
58	Point group symmetry and deformation-induced symmetry breaking of superlattice materials. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015 , 471, 20150125 ²⁻⁴		9
57	Atom collocation method. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2012 , 237-240, 67-77;7		9
56	On scattering in dissimilar piezoelectric materials by a semi-infinite interfacial crack. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 2005 , 58, 309-331	1	9
55	Homogenization of additive manufactured polymeric foams with spherical cells. <i>Additive Manufacturing</i> , 2016 , 12, 274-281	6.1	8
54	Heat conduction in extended X-junctions of single-walled carbon nanotubes. <i>Journal of Physics and Chemistry of Solids</i> , 2014 , 75, 123-129	3.9	8
53	Multiresolution molecular mechanics: Convergence and error structure analysis. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2014 , 269, 20-45	5.7	8
52	A fast method for generating atomistic models of arbitrarily-shaped carbon graphitic nanostructures. <i>RSC Advances</i> , 2013 , 3, 1359-1362	3.7	8
51	A new method for predicting cracking at the interface between solid and lattice support during laser powder bed fusion additive manufacturing. <i>Additive Manufacturing</i> , 2020 , 32, 101050	6.1	8
50	A review of multi-scale and multi-physics simulations of metal additive manufacturing processes with focus on modeling strategies. <i>Additive Manufacturing</i> , 2021 , 47, 102278	6.1	8
49	A process-microstructure finite element simulation framework for predicting phase transformations and microhardness for directed energy deposition of Ti6Al4V. <i>Additive Manufacturing</i> , 2020 , 35, 101252	6.1	7
48	Porous structure design through Blinn transformation-based level set method. <i>Structural and Multidisciplinary Optimization</i> , 2018 , 57, 849-864	3.6	7
47	Multiresolution molecular mechanics: Implementation and efficiency. <i>Journal of Computational Physics</i> , 2017 , 328, 27-45	4.1	7
46	A modification to Hardy's thermomechanical theory that conserves fundamental properties more accurately. <i>Journal of Applied Physics</i> , 2013 , 113, 233505	2.5	7
45	The controlled growth of single metallic and conducting polymer nanowires via gate-assisted electrochemical deposition. <i>Nanotechnology</i> , 2009 , 20, 285605	3.4	7
44	A Parametric Level Set Method for Topology Optimization Based on Deep Neural Network. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2021 , 143,	3	7
43	Transformation of non-orthogonal X-junction of single-walled carbon nanotubes into parallel junction by heating. <i>Chemical Physics Letters</i> , 2012 , 547, 42-46	2.5	6
42	Coalescence of parallel finite length single-walled carbon nanotubes by heat treatment. <i>Journal of Physics and Chemistry of Solids</i> , 2013 , 74, 436-440	3.9	6

41	On Scattering in a Piezoelectric Medium by a Conducting Crack. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2005 , 72, 943	2.7	6
40	Microseismic source deconvolution: Wiener filter versus minimax, Fourier versus wavelets, and linear versus nonlinear. <i>Journal of the Acoustical Society of America</i> , 2004 , 115, 3048-3058	2.2	6
39	A Discrete Dendrite Dynamics Model for Epitaxial Columnar Grain Growth in Metal Additive Manufacturing with Application to Inconel. <i>Additive Manufacturing</i> , 2020 , 36, 101611	6.1	6
38	A Digital Twin Approach to Study Additive Manufacturing Processing Using Embedded Optical Fiber Sensors and Numerical Modeling. <i>Journal of Lightwave Technology</i> , 2020 , 38, 6402-6411	4	6
37	Residual Stress Modeling with Phase Transformation for Wire Arc Additive Manufacturing of B91 Steel. <i>Jom</i> , 2020 , 72, 4178-4186	2.1	6
36	Topology optimization of phononic-like structures using experimental material interpolation model for additive manufactured lattice infills. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021 , 377, 113717	5.7	6
35	Elucidating the effect of preheating temperature on melt pool morphology variation in Inconel 718 laser powder bed fusion via simulation and experiment. <i>Additive Manufacturing</i> , 2021 , 37, 101642	6.1	6
34	Multiresolution molecular mechanics: Adaptive analysis. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016 , 305, 682-702	5.7	5
33	Nanobuds promote heat welding of carbon nanotubes at experimentally-relevant temperatures. <i>RSC Advances</i> , 2014 , 4, 56313-56317	3.7	5
32	Thermal conductivity of periodic array of intermolecular junctions of silicon nanowires. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2011 , 44, 141-145	3	5
31	On incorporating scanning strategy effects into the modified inherent strain modeling framework for laser powder bed fusion. <i>Additive Manufacturing</i> , 2021 , 37, 101648	6.1	5
30	An efficient 146-line 3D sensitivity analysis code of stress-based topology optimization written in MATLAB. <i>Optimization and Engineering</i> , 1	2.1	5
29	Formation of single carbon chain bridging two SWCNTs via tensile deformation of nanobud junction. <i>Materials and Design</i> , 2016 , 97, 86-92	8.1	3
28	On the evaluation of Hardy's thermomechanical quantities using ensemble and time averaging. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2013 , 21, 055015	2	3
27	On determining the thermal state of individual atoms in molecular dynamics simulations of nonequilibrium processes in solids. <i>Chemical Physics Letters</i> , 2011 , 506, 290-297	2.5	3
26	Lateral Load Capacity of Drilled Shafts in Jointed Rock. <i>Journal of Geotechnical and Geoenvironmental Engineering - ASCE</i> , 2003 , 129, 711-726	3.4	3
25	Optimally variable density lattice to reduce warping thermal distortion of laser powder bed fusion. <i>Additive Manufacturing</i> , 2021 , 102422	6.1	3
24	Integrating Geometric Data into Topology Optimization via Neural Style Transfer. <i>Materials</i> , 2021 , 14,	3.5	3

23	Island scanning pattern optimization for residual deformation mitigation in laser powder bed fusion via sequential inherent strain method and sensitivity analysis. <i>Additive Manufacturing</i> , 2021 , 46, 102116	6.1	3
22	Multiresolution molecular mechanics: Surface effects in nanoscale materials. <i>Journal of Computational Physics</i> , 2017 , 336, 212-234	4.1	2
21	A modification to Hardy's thermomechanical theory for conserving fundamental properties more accurately: tensile and shear failures in iron. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014 , 22, 015010	2	2
20	Denosing methods for thermomechanical decomposition for quasi-equilibrium molecular dynamics simulations. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2011 , 200, 1979-1992	5.7	2
19	Computer-Aided Design-Based Topology Optimization System With Dynamic Feature Shape and Modeling History Evolution. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2020 , 142,	3	2
18	Efficient prediction of cracking at solid-lattice support interface during laser powder bed fusion via global-local J-integral analysis based on modified inherent strain method and lattice support homogenization. <i>Additive Manufacturing</i> , 2020 , 36, 101590	6.1	2
17	A new procedure for implementing the modified inherent strain method with improved accuracy in predicting both residual stress and deformation for laser powder bed fusion. <i>Additive Manufacturing</i> , 2021 , 102345	6.1	2
16	Mechanics of CNT Network Materials 2016 , 29-70		1
15	Interactions of Fullerene (C60) and its Hydroxyl Derivatives with Lipid Bilayer: A Coarse-Grained Molecular Dynamics Simulation. <i>Brazilian Journal of Physics</i> , 2014 , 44, 1-7	1.2	1
14	Optical Fiber Sensor-Fused Additive Manufacturing and Its Applications in Residual Stress Measurements in Titanium Parts 2016 ,		1
13	Optical Fiber Sensor-Fused Additive Manufacturing and Its Applications in Residual Stress Measurements 2017 ,		1
12	Support Thickness, Pitch, and Applied Bias Effects on the Carbide Formation, Surface Roughness, and Material Removal of Additively Manufactured 316 L Stainless Steel. <i>Jom</i> , 2020 , 72, 4254-4263	2.1	1
11	An enhanced layer lumping method for accelerating simulation of metal components produced by laser powder bed fusion. <i>Additive Manufacturing</i> , 2021 , 39, 101881	6.1	1
10	Reverse shape compensation via a gradient-based moving particle optimization method. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021 , 377, 113658	5.7	1
9	Part-scale thermal process modeling for laser powder bed fusion with matrix-free method and GPU computing. <i>Additive Manufacturing</i> , 2021 , 37, 101732	6.1	1
8	Homogenization timing effect on microstructure and precipitation strengthening of 17 Φ PH stainless steel fabricated by laser powder bed fusion. <i>Additive Manufacturing</i> , 2022 , 52, 102672	6.1	0
7	CAD-integrated topology optimization method with dynamic extrusion feature evolution for multi-axis machining. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022 , 390, 114456	5.7	0
6	Projection-Based Implicit Modeling Method (PIMM) for Functionally Graded Lattice Optimization. <i>Jom</i> , 2021 , 73, 2012-2021	2.1	0

- 5 A density-based boundary evolving method for buckling-induced design under large deformation. *International Journal for Numerical Methods in Engineering*, **2021**, 122, 1770-1796 2.4 ○
- 4 Enabling Part-Scale Scanwise process simulation for predicting melt pool variation in LPBF by combining GPU-based Matrix-free FEM and adaptive Remeshing. *Additive Manufacturing Letters*, **2022**, 3, 100051 ○
- 3 Multifunctional One-Dimensional Phononic Crystal Structures Exploiting Interfacial Acoustic Waves. *Materials Research Society Symposia Proceedings*, **2009**, 1188, 145
- 2 Application of Many-Realization Molecular Dynamics Method to Understand the Physics of Nonequilibrium Processes in Solids59-76
- 1 Quantitative Texture Prediction of Epitaxial Columnar Grains in Alloy 718 Processed by Additive Manufacturing. *Minerals, Metals and Materials Series*, **2018**, 749-755 0.3