Albert C To

List of Publications by Year in Descending Order

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	Homogenization timing effect on microstructure and precipitation strengthening of 17-4PH stainless steel fabricated by laser powder bed fusion. *Additive Manufacturing*, **2022**, 52, 102672	6.1	0
129	CAD-integrated topology optimization method with dynamic extrusion feature evolution for multi-axis machining. *Computer Methods in Applied Mechanics and Engineering*, **2022**, 390, 114456	5.7	0
128	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		0
127	Optimally variable density lattice to reduce warping thermal distortion of laser powder bed fusion. *Additive Manufacturing*, **2021**, 102422	6.1	3
126	An enhanced layer lumping method for accelerating simulation of metal components produced by laser powder bed fusion. *Additive Manufacturing*, **2021**, 39, 101881	6.1	1
125	A Parametric Level Set Method for Topology Optimization Based on Deep Neural Network. *Journal of Mechanical Design, Transactions of the ASME*, **2021**, 143,	3	7
124	Reverse shape compensation via a gradient-based moving particle optimization method. *Computer Methods in Applied Mechanics and Engineering*, **2021**, 377, 113658	5.7	1
123	Topology optimization of phononic-like structures using experimental material interpolation model for additive manufactured lattice infills. *Computer Methods in Applied Mechanics and Engineering*, **2021**, 377, 113717	5.7	6
122	Projection-Based Implicit Modeling Method (PIMM) for Functionally Graded Lattice Optimization. *Jom*, **2021**, 73, 2012-2021	2.1	0
121	Elucidating the effect of preheating temperature on melt pool morphology variation in Inconel 718 laser powder bed fusion via simulation and experiment. *Additive Manufacturing*, **2021**, 37, 101642	6.1	6
120	Part-scale thermal process modeling for laser powder bed fusion with matrix-free method and GPU computing. *Additive Manufacturing*, **2021**, 37, 101732	6.1	1
119	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	0
118	On incorporating scanning strategy effects into the modified inherent strain modeling framework for laser powder bed fusion. *Additive Manufacturing*, **2021**, 37, 101648	6.1	5
117	Integrating Geometric Data into Topology Optimization via Neural Style Transfer. *Materials*, **2021**, 14,	3.5	3
116	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. *Additive Manufacturing*, **2021**, 102345	6.1	2
115	Island scanning pattern optimization for residual deformation mitigation in laser powder bed fusion via sequential inherent strain method and sensitivity analysis. *Additive Manufacturing*, **2021**, 46, 102116	6.1	3
114	A review of multi-scale and multi-physics simulations of metal additive manufacturing processes with focus on modeling strategies. *Additive Manufacturing*, **2021**, 47, 102278	6.1	8

113	A process-microstructure finite element simulation framework for predicting phase transformations and microhardness for directed energy deposition of Ti6Al4V. *Additive Manufacturing*, **2020**, 35, 101252	6.1	7
112	Topology optimization based on deep representation learning (DRL) for compliance and stress-constrained design. *Computational Mechanics*, **2020**, 66, 449-469	4	10
111	Linear and nonlinear topology optimization design with projection-based ground structure method (P-GSM). *International Journal for Numerical Methods in Engineering*, **2020**, 121, 2437-2461	2.4	10
110	Computer-Aided Design-Based Topology Optimization System With Dynamic Feature Shape and Modeling History Evolution. *Journal of Mechanical Design, Transactions of the ASME*, **2020**, 142,	3	2
109	Topology optimization design of stretchable metamaterials with B□ier skeleton explicit density (BSED) representation algorithm. *Computer Methods in Applied Mechanics and Engineering*, **2020**, 366, 113093	5.7	12
108	A new method for predicting cracking at the interface between solid and lattice support during laser powder bed fusion additive manufacturing. *Additive Manufacturing*, **2020**, 32, 101050	6.1	8
107	A level-set based continuous scanning path optimization method for reducing residual stress and deformation in metal additive manufacturing. *Computer Methods in Applied Mechanics and Engineering*, **2020**, 360, 112719	5.7	10
106	Invited review: Machine learning for materials developments in metals additive manufacturing. *Additive Manufacturing*, **2020**, 36, 101641	6.1	19
105	A Discrete Dendrite Dynamics Model for Epitaxial Columnar Grain Growth in Metal Additive Manufacturing with Application to Inconel. *Additive Manufacturing*, **2020**, 36, 101611	6.1	6
104	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. *Additive Manufacturing*, **2020**, 36, 101590	6.1	2
103	Inherent strain homogenization for fast residual deformation simulation of thin-walled lattice support structures built by laser powder bed fusion additive manufacturing. *Additive Manufacturing* , **2020**, 32, 101091	6.1	11
102	Sensitivity analysis and lattice density optimization for sequential inherent strain method used in additive manufacturing process. *Computer Methods in Applied Mechanics and Engineering*, **2020**, 370, 113231	5.7	15
101	A Digital Twin Approach to Study Additive Manufacturing Processing Using Embedded Optical Fiber Sensors and Numerical Modeling. *Journal of Lightwave Technology*, **2020**, 38, 6402-6411	4	6
100	Residual Stress Modeling with Phase Transformation for Wire Arc Additive Manufacturing of B91 Steel. *Jom*, **2020**, 72, 4178-4186	2.1	6
99	Support Thickness, Pitch, and Applied Bias Effects on the Carbide Formation, Surface Roughness, and Material Removal of Additively Manufactured 316 L Stainless Steel. *Jom*, **2020**, 72, 4254-4263	2.1	1
98	Topology optimization for energy dissipation design of lattice structures through snap-through behavior. *Computer Methods in Applied Mechanics and Engineering*, **2020**, 358, 112641	5.7	24
97	An inherent strain based multiscale modeling framework for simulating part-scale residual deformation for direct metal laser sintering. *Additive Manufacturing*, **2019**, 28, 406-418	6.1	62
96	On utilizing topology optimization to design support structure to prevent residual stress induced build failure in laser powder bed metal additive manufacturing. *Additive Manufacturing*, **2019**, 27, 290-304	6.1	45

95	Part-scale build orientation optimization for minimizing residual stress and support volume for metal additive manufacturing: Theory and experimental validation. *CAD Computer Aided Design*, **2019**, 113, 1-23	2.9	42
94	Manufacturing cost constrained topology optimization for additive manufacturing. *Frontiers of Mechanical Engineering*, **2019**, 14, 213-221	3.3	14
93	Modified inherent strain method for efficient prediction of residual deformation in direct metal laser sintered components. *Computational Mechanics*, **2019**, 64, 1719-1733	4	35
92	Functionally graded lattice structure topology optimization for the design of additive manufactured components with stress constraints. *Computer Methods in Applied Mechanics and Engineering*, **2019**, 344, 334-359	5.7	125
91	Distortion energy-based topology optimization design of hyperelastic materials. *Structural and Multidisciplinary Optimization*, **2019**, 59, 1895-1913	3.6	11
90	Concurrent lattice infill with feature evolution optimization for additive manufactured heat conduction design. *Structural and Multidisciplinary Optimization*, **2018**, 58, 511-535	3.6	31
89	Coupling lattice structure topology optimization with design-dependent feature evolution for additive manufactured heat conduction design. *Computer Methods in Applied Mechanics and Engineering*, **2018**, 332, 408-439	5.7	82
88	Predicting Microstructure Evolution During Directed Energy Deposition Additive Manufacturing of Ti-6Al-4V. *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, **2018**, 140,	3.3	39
87	Natural frequency optimization of 3D printed variable-density honeycomb structure via a homogenization-based approach. *Additive Manufacturing*, **2018**, 20, 189-198	6.1	38
86	Spurious heat conduction behavior of finite-size graphene nanoribbon under extreme uniaxial strain caused by the AIREBO potential. *Physica E: Low-Dimensional Systems and Nanostructures*, **2018**, 96, 46-53	3	10
85	Porous structure design through Blinn transformation-based level set method. *Structural and Multidisciplinary Optimization*, **2018**, 57, 849-864	3.6	7
84	Natural Frequency Optimization of Variable-Density Additive Manufactured Lattice Structure: Theory and Experimental Validation. *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, **2018**, 140,	3.3	39
83	Current and future trends in topology optimization for additive manufacturing. *Structural and Multidisciplinary Optimization*, **2018**, 57, 2457-2483	3.6	305
82	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. *Additive Manufacturing*, **2018**, 23, 471-486	6.1	64
81	Quantitative Texture Prediction of Epitaxial Columnar Grains in Alloy 718 Processed by Additive Manufacturing. *Minerals, Metals and Materials Series*, **2018**, 749-755	0.3	
80	Design, testing, and mechanical behavior of additively manufactured casing with optimized lattice structure. *Additive Manufacturing*, **2018**, 22, 462-471	6.1	23
79	Variation of hardness, microstructure, and Laves phase distribution in direct laser deposited alloy 718 cuboids. *Materials and Design*, **2017**, 119, 188-198	8.1	61
78	Mean-field polycrystal plasticity modeling with grain size and shape effects for laser additive manufactured FCC metals. *International Journal of Solids and Structures*, **2017**, 112, 35-42	3.1	17

77	Multiresolution molecular mechanics: Surface effects in nanoscale materials. *Journal of Computational Physics*, **2017**, 336, 212-234	4.1	2
76	Quantitative texture prediction of epitaxial columnar grains in additive manufacturing using selective laser melting. *Additive Manufacturing*, **2017**, 16, 58-64	6.1	46
75	Deposition path planning-integrated structural topology optimization for 3D additive manufacturing subject to self-support constraint. *CAD Computer Aided Design*, **2017**, 91, 27-45	2.9	57
74	Length and temperature dependence of the mechanical properties of finite-size carbyne. *Physica E: Low-Dimensional Systems and Nanostructures*, **2017**, 93, 124-131	3	9
73	Efficient design optimization of variable-density cellular structures for additive manufacturing: theory and experimental validation. *Rapid Prototyping Journal*, **2017**, 23, 660-677	3.8	124
72	Ultrahigh Thermal Rectification in Pillared Graphene Structure with Carbon Nanotube-Graphene Intramolecular Junctions. *ACS Applied Materials & Interfaces*, **2017**, 9, 29-35	9.5	29
71	Arbitrary void feature control in level set topology optimization. *Computer Methods in Applied Mechanics and Engineering*, **2017**, 324, 595-618	5.7	13
70	Role of anisotropic properties on topology optimization of additive manufactured load bearing structures. *Scripta Materialia*, **2017**, 135, 148-152	5.6	90
69	Topology optimization for hybrid additive-subtractive manufacturing. *Structural and Multidisciplinary Optimization*, **2017**, 55, 1281-1299	3.6	30
68	Multiresolution molecular mechanics: Implementation and efficiency. *Journal of Computational Physics*, **2017**, 328, 27-45	4.1	7
67	An analytical model of the melt pool and single track in coaxial laser direct metal deposition (LDMD) additive manufacturing. *Journal of Micromechanics and Molecular Physics*, **2017**, 02, 1750013	1.4	22
66	Optical Fiber Sensor-Fused Additive Manufacturing and Its Applications in Residual Stress Measurements **2017**,		1
65	Mechanics of CNT Network Materials **2016**, 29-70		1
64	Homogenization of additive manufactured polymeric foams with spherical cells. *Additive Manufacturing*, **2016**, 12, 274-281	6.1	8
63	Finite element modeling and validation of thermomechanical behavior of Ti-6Al-4V in directed energy deposition additive manufacturing. *Additive Manufacturing*, **2016**, 12, 169-177	6.1	107
62	Multiresolution molecular mechanics: Adaptive analysis. *Computer Methods in Applied Mechanics and Engineering*, **2016**, 305, 682-702	5.7	5
61	Transversely isotropic hyperelastic-viscoplastic model for glassy polymers with application to additive manufactured photopolymers. *International Journal of Plasticity*, **2016**, 80, 56-74	7.6	45
60	Effects of lithium doping on hydrogen storage properties of heat welded random CNT network structures. *International Journal of Hydrogen Energy*, **2016**, 41, 8246-8255	6.7	13

59	Formation of single carbon chain bridging two SWCNTs via tensile deformation of nanobud junction. *Materials and Design*, **2016**, 97, 86-92	8.1	3
58	Optical Fiber Sensor-Fused Additive Manufacturing and Its Applications in Residual Stress Measurements in Titanium Parts **2016**,		1
57	Biomimetic staggered composites with highly enhanced energy dissipation: Modeling, 3D printing, and testing. *Journal of the Mechanics and Physics of Solids*, **2015**, 83, 285-300	5	82
56	Effects of nanobuds and heat welded nanobuds chains on mechanical behavior of carbon nanotubes. *Computational Materials Science*, **2015**, 109, 49-55	3.2	9
55	Hydrogen storage in heat welded random CNT network structures. *International Journal of Hydrogen Energy*, **2015**, 40, 403-411	6.7	30
54	Point group symmetry and deformation-induced symmetry breaking of superlattice materials. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2015**, 471, 20150125	2.4	9
53	Ultra-low Thermal Conductivity in Si/Ge Hierarchical Superlattice Nanowire. *Scientific Reports*, **2015**, 5, 16697	4.9	48
52	Proportional Topology Optimization: A New Non-Sensitivity Method for Solving Stress Constrained and Minimum Compliance Problems and Its Implementation in MATLAB. *PLoS ONE*, **2015**, 10, e0145041	3.7	43
51	Efficient Design-Optimization of Variable-Density Hexagonal Cellular Structure by Additive Manufacturing: Theory and Validation. *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, **2015**, 137,	3.3	140
50	Multiresolution molecular mechanics: A unified and consistent framework for general finite element shape functions. *Computer Methods in Applied Mechanics and Engineering*, **2015**, 283, 384-418	5.7	18
49	Tensile behavior of heat welded CNT network structures. *Computational Materials Science*, **2014**, 88, 14-21	3.2	17
48	Multiresolution Molecular Mechanics: Dynamics. *Computer Methods in Applied Mechanics and Engineering*, **2014**, 274, 42-55	5.7	13
47	A modification to Hardy's thermomechanical theory for conserving fundamental properties more accurately: tensile and shear failures in iron. *Modelling and Simulation in Materials Science and Engineering*, **2014**, 22, 015010	2	2
46	Effects of welding on thermal conductivity of randomly oriented carbon nanotube networks. *International Journal of Heat and Mass Transfer*, **2014**, 70, 803-810	4.9	16
45	Carbon nanotube-fullerene hybrid nanostructures by C_{60}^{+} bombardment: formation and mechanical behavior. *Physical Chemistry Chemical Physics*, **2014**, 16, 21615-9	3.6	14
44	Heat conduction in extended X-junctions of single-walled carbon nanotubes. *Journal of Physics and Chemistry of Solids*, **2014**, 75, 123-129	3.9	8
43	Highly Enhanced Damping Figure of Merit in Biomimetic Hierarchical Staggered Composites. *Journal of Applied Mechanics, Transactions ASME*, **2014**, 81,	2.7	25
42	Compressive Behavior and Deformation Mechanism of Nanoporous Open-Cell Foam with Ultrathin Ligaments. *Journal of Nanomechanics & Micromechanics*, **2014**, 4,		11

41	Nanobuds promote heat welding of carbon nanotubes at experimentally-relevant temperatures. *RSC Advances*, **2014**, 4, 56313-56317	3.7	5
40	Multiresolution molecular mechanics: Convergence and error structure analysis. *Computer Methods in Applied Mechanics and Engineering*, **2014**, 269, 20-45	5.7	8
39	Interactions of Fullerene (C60) and its Hydroxyl Derivatives with Lipid Bilayer: A Coarse-Grained Molecular Dynamics Simulation. *Brazilian Journal of Physics*, **2014**, 44, 1-7	1.2	1
38	A stochastic algorithm for modeling heat welded random carbon nanotube network. *Computer Methods in Applied Mechanics and Engineering*, **2013**, 259, 1-9	5.7	14
37	Multiresolution molecular mechanics: Statics. *Computer Methods in Applied Mechanics and Engineering*, **2013**, 258, 26-38	5.7	29
36	Broadband wave filtering of bioinspired hierarchical phononic crystal. *Applied Physics Letters*, **2013**, 102, 121910	3.4	69
35	A fast method for generating atomistic models of arbitrarily-shaped carbon graphitic nanostructures. *RSC Advances*, **2013**, 3, 1359-1362	3.7	8
34	Coalescence of parallel finite length single-walled carbon nanotubes by heat treatment. *Journal of Physics and Chemistry of Solids*, **2013**, 74, 436-440	3.9	6
33	A modification to Hardy's thermomechanical theory that conserves fundamental properties more accurately. *Journal of Applied Physics*, **2013**, 113, 233505	2.5	7
32	On the evaluation of Hardy's thermomechanical quantities using ensemble and time averaging. *Modelling and Simulation in Materials Science and Engineering*, **2013**, 21, 055015	2	3
31	Heat welding of non-orthogonal X-junction of single-walled carbon nanotubes. *Physica E: Low-Dimensional Systems and Nanostructures*, **2012**, 46, 30-32	3	17
30	Transformation of non-orthogonal X-junction of single-walled carbon nanotubes into parallel junction by heating. *Chemical Physics Letters*, **2012**, 547, 42-46	2.5	6
29	Atom collocation method. *Computer Methods in Applied Mechanics and Engineering*, **2012**, 237-240, 67-77	5.7	9
28	Mechanical properties of SWNT X-Junctions through molecular dynamics simulation. *International Journal of Smart and Nano Materials*, **2012**, 3, 33-46	3.6	11
27	Surface structure and properties of functionalized nanodiamonds: a first-principles study. *Nanotechnology*, **2011**, 22, 065706	3.4	12
26	Surface effects on stacking fault and twin formation in fcc nanofilms: A first-principles study. *Computational Materials Science*, **2011**, 50, 3342-3345	3.2	18
25	Thermal conductivity of periodic array of intermolecular junctions of silicon nanowires. *Physica E: Low-Dimensional Systems and Nanostructures*, **2011**, 44, 141-145	3	5
24	Conforming local meshfree method. *International Journal for Numerical Methods in Engineering*, **2011**, 86, 335-357	2.4	12

23	Denoising methods for thermomechanical decomposition for quasi-equilibrium molecular dynamics simulations. *Computer Methods in Applied Mechanics and Engineering*, **2011**, 200, 1979-1992	5.7	2
22	Vibration promotes heat welding of single-walled carbon nanotubes. *Chemical Physics Letters*, **2011**, 502, 231-234	2.5	33
21	On determining the thermal state of individual atoms in molecular dynamics simulations of nonequilibrium processes in solids. *Chemical Physics Letters*, **2011**, 506, 290-297	2.5	3
20	Anomalous heat conduction behavior in thin finite-size silicon nanowires. *Nanotechnology*, **2010**, 21, 155704	3.4	31
19	Heats of vaporization of room temperature ionic liquids by tunable vacuum ultraviolet photoionization. *Journal of Physical Chemistry B*, **2010**, 114, 1361-7	3.4	43
18	Multifunctional One-Dimensional Phononic Crystal Structures Exploiting Interfacial Acoustic Waves. *Materials Research Society Symposia Proceedings*, **2009**, 1188, 145		
17	The controlled growth of single metallic and conducting polymer nanowires via gate-assisted electrochemical deposition. *Nanotechnology*, **2009**, 20, 285605	3.4	7
16	Interplay between phononic bandgaps and piezoelectric microstructures for energy harvesting. *Journal of the Mechanics and Physics of Solids*, **2009**, 57, 621-633	5	144
15	Wavelet denoising techniques with applications to experimental geophysical data. *Signal Processing*, **2009**, 89, 144-160	4.4	65
14	A finite temperature continuum theory based on interatomic potential in crystalline solids. *Computational Mechanics*, **2008**, 42, 531-541	4	14
13	Materials integrity in microsystems: a framework for a petascale predictive-science-based multiscale modeling and simulation system. *Computational Mechanics*, **2008**, 42, 485-510	4	20
12	Statistical volume element method for predicting microstructure-constitutive property relations. *Computer Methods in Applied Mechanics and Engineering*, **2008**, 197, 3516-3529	5.7	93
11	Immersed electrokinetic finite element method. *International Journal for Numerical Methods in Engineering*, **2007**, 71, 379-405	2.4	51
10	Perfectly matched multiscale simulations for discrete lattice systems: Extension to multiple dimensions. *Physical Review B*, **2006**, 74,	3.3	49
9	Propagation of a mode-III interfacial conductive crack along a conductive interface between two piezoelectric materials. *Wave Motion*, **2006**, 43, 368-386	1.8	14
8	Perfectly matched multiscale simulations. *Physical Review B*, **2005**, 72,	3.3	97
7	On Scattering in a Piezoelectric Medium by a Conducting Crack. *Journal of Applied Mechanics, Transactions ASME*, **2005**, 72, 943	2.7	6
6	Full waveform inversion of a 3-D source inside an artificial rock. *Journal of Sound and Vibration*, **2005**, 285, 835-857	3.9	15

5	On scattering in dissimilar piezoelectric materials by a semi-infinite interfacial crack. *Quarterly Journal of Mechanics and Applied Mathematics*, **2005**, 58, 309-331	1	9
4	Microseismic source deconvolution: Wiener filter versus minimax, Fourier versus wavelets, and linear versus nonlinear. *Journal of the Acoustical Society of America*, **2004**, 115, 3048-3058	2.2	6
3	Lateral Load Capacity of Drilled Shafts in Jointed Rock. *Journal of Geotechnical and Geoenvironmental Engineering - ASCE*, **2003**, 129, 711-726	3.4	3
2	Application of Many-Realization Molecular Dynamics Method to Understand the Physics of Nonequilibrium Processes in Solids59-76		
1	An efficient 146-line 3D sensitivity analysis code of stress-based topology optimization written in MATLAB. *Optimization and Engineering*,1	2.1	5