Lorenzo Valdevit

List of Publications by Year
in descending order

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68	4,478	147801 31	128289 60
papers	citations	h-index	g-index

73	73	73	4377
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Ultralight Metallic Microlattices. Science, 2011, 334, 962-965.	12.6	1,389
2	Nanolattices: An Emerging Class of Mechanical Metamaterials. Advanced Materials, 2017, 29, 1701850.	21.0	356
3	Multistable Shapeâ€Reconfigurable Architected Materials. Advanced Materials, 2016, 28, 7915-7920.	21.0	292
4	Active cooling by metallic sandwich structures with periodic cores. Progress in Materials Science, 2005, 50, 789-815.	32.8	211
5	Characterization of nickel-based microlattice materials with structural hierarchy from the nanometer to the millimeter scale. Acta Materialia, 2012, 60, 3511-3523.	7.9	182
6	Protocols for the Optimal Design of Multiâ€Functional Cellular Structures: From Hypersonics to Microâ€Architected Materials. Journal of the American Ceramic Society, 2011, 94, s15.	3.8	113
7	Structural performance of near-optimal sandwich panels with corrugated cores. International Journal of Solids and Structures, 2006, 43, 4888-4905.	2.7	105
8	Compressive strength of hollow microlattices: Experimental characterization, modeling, and optimal design. Journal of Materials Research, 2013, 28, 2461-2473.	2.6	96
9	Optimal active cooling performance of metallic sandwich panels with prismatic cores. International Journal of Heat and Mass Transfer, 2006, 49, 3819-3830.	4.8	91
10	The mechanical response of cellular materials with spinodal topologies. Journal of the Mechanics and Physics of Solids, 2019, 125, 401-419.	4.8	86
11	Plate-nanolattices at the theoretical limit of stiffness and strength. Nature Communications, 2020, 11, 1579.	12.8	85
12	Mechanical characterizations of cast Poly(3,4-ethylenedioxythiophene):Poly(styrenesulfonate)/Polyvinyl Alcohol thin films. Synthetic Metals, 2011, 161, 2259-2267.	3.9	78
13	Concentration Independent Modulation of Local Micromechanics in a Fibrin Gel. PLoS ONE, 2011, 6, e20201.	2.5	76
14	Energy dissipation mechanisms in hollow metallic microlattices. Journal of Materials Research, 2014, 29, 1755-1770.	2.6	73
15	Push-to-pull tensile testing of ultra-strong nanoscale ceramicâ€“polymer composites made by additive manufacturing. Extreme Mechanics Letters, 2015, 3, 105-112.	4.1	69
16	Microlattices as architected thin films: Analysis of mechanical properties and high strain elastic recovery. APL Materials, 2013, 1, .	5.1	68
17	Programmable Mechanical Properties of Twoâ€Photon Polymerized Materials: From Nanowires to Bulk. Advanced Materials Technologies, 2019, 4, 1900146.	5.8	65
18	Additive Manufacturing of Ductile, Ultrastrong Polymer-Derived Nanoceramics. Matter, 2019, 1, 1547-1556.	10.0	58

#	Article	IF	Citations
19	Elastic architected materials with extreme damping capacity. Extreme Mechanics Letters, 2017, 17, 56-61.	4.1	57
20	Mechanical performance of 3D printed interpenetrating phase composites with spinodal topologies. Composite Structures, 2021, 263, 113693.	5.8	57
21	Incorporating fabrication cost into topology optimization of discrete structures and lattices. Structural and Multidisciplinary Optimization, 2015, 51, 385-396.	3.5	52
22	Fabrication and Deformation of Metallic Glass Microâ€Lattices. Advanced Engineering Materials, 2014, 16, 889-896.	3.5	50
23	A Materials Selection Protocol for Lightweight Actively Cooled Panels. Journal of Applied Mechanics, Transactions ASME, 2008, 75, .	2.2	47
24	Feasibility of Metallic Structural Heat Pipes as Sharp Leading Edges for Hypersonic Vehicles. Journal of Applied Mechanics, Transactions ASME, 2009, 76, .	2.2	44
25	Optimal design of a cellular material encompassing negative stiffness elements for unique combinations of stiffness and elastic hysteresis. Materials and Design, 2017, 135, 37-50.	7.0	42
26	Multiscale modeling and optimization of the mechanics of hierarchical metamaterials. MRS Bulletin, 2019, 44, 773-781.	3.5	40
27	Pressure-Induced Amorphization in Silicon Caused by the Impact of Electrosprayed Nanodroplets. Physical Review Letters, 2010, 105, 145701.	7.8	38
28	Ultrahigh Energy Absorption Multifunctional Spinodal Nanoarchitectures. Small, 2019, 15, e1903834.	10.0	38
29	Topology optimization of multiphase architected materials for energy dissipation. Computer Methods in Applied Mechanics and Engineering, 2017, 325, 314-329.	6.6	37
30	Tensegrity Metamaterials: Toward Failureâ€Resistant Engineering Systems through Delocalized Deformation. Advanced Materials, 2021, 33, e2005647.	21.0	37
31	Catastrophic vs Gradual Collapse of Thin-Walled Nanocrystalline Ni Hollow Cylinders As Building Blocks of Microlattice Structures. Nano Letters, 2011, 11, 4118-4125.	9.1	34
32	Topology optimization of lightweight periodic lattices under simultaneous compressive and shear stiffness constraints. International Journal of Solids and Structures, 2015, 60-61, 1-16.	2.7	33
33	Architected implant designs for long bones: Advantages of minimal surface-based topologies. Materials and Design, 2021, 207, 109838.	7.0	33
34	Surface oxide and hydroxide effects on aluminum microparticle impact bonding. Acta Materialia, 2020, 197, 28-39.	7.9	32
35	Magnetoelastic Metamaterials for Energy Dissipation and Wave Filtering. Advanced Engineering Materials, 2020, 22, 1901019.	3.5	23
36	A versatile numerical approach for calculating the fracture toughness and R-curves of cellular materials. Journal of the Mechanics and Physics of Solids, 2020, 138, 103925.	4.8	23

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37	Negative-Stiffness Inclusions as a Platform for Real-Time Tunable Phononic Metamaterials. Physical Review Applied, 2019, 11, .	3.8	20
38	Thermal post-curing as an efficient strategy to eliminate process parameter sensitivity in the mechanical properties of two-photon polymerized materials. Optics Express, 2020, 28, 20362.	3.4	20
39	Minisurf â€“ A minimal surface generator for finite element modeling and additive manufacturing. Software Impacts, 2020, 6, 100026.	1.4	19
40	The effect of manufacturing defects on compressive strength of ultralight hollow microlattices: A data-driven study. Additive Manufacturing, 2018, 19, 51-61.	3.0	17
41	Scalable synthesis of gyroid-inspired freestanding three-dimensional graphene architectures. Nanoscale Advances, 2019, 1, 3870-3882.	4.6	17
42	Thermal transport in hollow metallic microlattices. APL Materials, 2019, 7, .	5.1	16
43	Architected Materials: Multistable Shape-Reconfigurable Architected Materials (Adv. Mater. 36/2016). Advanced Materials, 2016, 28, 8065-8065.	21.0	15
44	Implications of shakedown for design of actively cooled thermostructural panels. Journal of Mechanics of Materials and Structures, 2011, 6, 1313-1327.	0.6	14
45	Ultrahigh-Dynamic-Range Resonant MEMS Load Cells for Micromechanical Test Frames. Journal of Microelectromechanical Systems, 2012, 21, 1519-1529.	2.5	14
46	Emergence of film-thickness- and grain-size-dependent elastic properties in nanocrystalline thin films. Scripta Materialia, 2013, 68, 261-264.	5.2	14
47	Accurate Stiffness Measurement of Ultralight Hollow Metallic Microlattices by Laser Vibrometry. Experimental Mechanics, 2014, 54, 1491-1495.	2.0	11
48	Alleviating expansion-induced mechanical degradation in lithium-ion battery silicon anodes via morphological design. Extreme Mechanics Letters, 2022, 54, 101746.	4.1	9
49	Novel insights from 3D models: the pivotal role of physical symmetry in epithelial organization. Scientific Reports, 2015, 5, 15153.	3.3	8
50	Fabrication of 3D Micro-Architected/Nano-Architected Materials. , 2016, , 345-373.		8
51	A Tri-Leaflet Nitinol Mesh Scaffold for Engineering Heart Valves. Annals of Biomedical Engineering, 2017, 45, 413-426.	2.5	8
52	Damping of selectively bonded 3D woven lattice materials. Scientific Reports, 2018, 8, 14572.	3.3	7
53	Minimal Surfaceâ€Based Materials for Topological Elastic Wave Guiding. Advanced Functional Materials, 2022, 32, .	14.9	7
54	Mechanically Compliant Thermal Interfaces Using Biporous Copperâ€Polydimethylsiloxane Interpenetrating Phase Composite. Advanced Materials Interfaces, 2021, 8, .	3.7	5

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55	Metallic Structural Heat Pipes as Sharp Leading Edges for Mach 7 Vehicles. , 2007, , .		3
56	A Novel Modeling Platform for Characterization and Optimal Design of Micro-Architected Materials. , 2012, , .		3
57	Glass-blown Pyrex resonator with compensating Ti coating for reduction of TCF. , 2014, , .		3
58	Nanoscale investigation of two-photon polymerized microstructures with tip-enhanced Raman spectroscopy. JPhys Photonics, 2021, 3, 024001.	4.6	3
59	3D manufacturing of micro and nano-architected materials. , 2016, , .		2
60	Fabrication of 3D micro-/nanoarchitected materials. , 2020, , 541-576.		2
61	Thickness-Dependent Microstructure in Additively Manufactured Stainless Steel. Journal of Materials Engineering and Performance, 2021, 30, 6606-6617.	2.5	2
62	Damage tolerance in additively manufactured ceramic architected materials. Journal of the European Ceramic Society, 2022, 42, 5893-5903.	5.7	2
63	Design and Implementation of Actively Cooled Panels for Scramjets. , 2007, , 191.		1
64	In-situ monitoring and quality control for in-space additive manufacturing using laser acoustical resonance spectroscopy. , 2019, , .		1
65	The Design Space of Superalloy-Based Actively Cooled Combustor Walls for H2-Powered Hypersonic Vehicles. , 2007, , 199.		0
66	Macroscopic strain controlled ion current in an elastomeric microchannel. Journal of Applied Physics, 2015, 117, 174904.	2.5	0
67	Thermal Conductivity Measurement of Mesoscale Lattices Using Steady-State Infrared Thermography. , 2019, , .		0
68	Tensegrity Metamaterials: Tensegrity Metamaterials: Toward Failureâ€Resistant Engineering Systems through Delocalized Deformation (Adv. Mater. 10/2021). Advanced Materials, 2021, 33, 2170077.	21.0	0