

Xiaoyan Li

List of Publications by Citations

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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.

87

papers

4,929

citations

38

h-index

69

g-index

89

ext. papers

6,240

ext. citations

11.7

avg, IF

6.13

L-index

#	Paper	IF	Citations
87	Dislocation nucleation governed softening and maximum strength in nano-twinned metals. <i>Nature</i> , 2010 , 464, 877-80	50.4	779
86	Deformation mechanisms in nanotwinned metal nanopillars. <i>Nature Nanotechnology</i> , 2012 , 7, 594-601	28.7	331
85	High-content ductile coherent nanoprecipitates achieve ultrastrong high-entropy alloys. <i>Nature Communications</i> , 2018 , 9, 4063	17.4	218
84	Plastic anisotropy and associated deformation mechanisms in nanotwinned metals. <i>Acta Materialia</i> , 2013 , 61, 217-227	8.4	206
83	Flaw insensitive fracture in nanocrystalline graphene. <i>Nano Letters</i> , 2012 , 12, 4605-10	11.5	187
82	Modeling grain size dependent optimal twin spacing for achieving ultimate high strength and related high ductility in nanotwinned metals. <i>Acta Materialia</i> , 2011 , 59, 5544-5557	8.4	159
81	Mechanical properties and scaling laws of nanoporous gold. <i>Journal of Applied Physics</i> , 2013 , 113, 023505	5.5	137
80	Mechanical properties and deformation mechanisms of gradient nanostructured metals and alloys. <i>Nature Reviews Materials</i> , 2020 , 5, 706-723	73.3	126
79	Ultralight, scalable, and high-temperature-resilient ceramic nanofiber sponges. <i>Science Advances</i> , 2017 , 3, e1603170	14.3	123
78	Recoverable plasticity in penta-twinned metallic nanowires governed by dislocation nucleation and retraction. <i>Nature Communications</i> , 2015 , 6, 5983	17.4	114
77	Gradient plasticity in gradient nano-grained metals. <i>Extreme Mechanics Letters</i> , 2016 , 8, 213-219	3.9	111
76	Love waves in functionally graded piezoelectric materials. <i>International Journal of Solids and Structures</i> , 2004 , 41, 7309-7328	3.1	109
75	Fracture of graphene: a review. <i>International Journal of Fracture</i> , 2015 , 196, 1-31	2.3	108
74	Competing grain-boundary- and dislocation-mediated mechanisms in plastic strain recovery in nanocrystalline aluminum. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 16108-13	11.5	102
73	Defects controlled wrinkling and topological design in graphene. <i>Journal of the Mechanics and Physics of Solids</i> , 2014 , 67, 2-13	5	100
72	Perovskite Quantum Dots Glasses Based Backlit Displays. <i>ACS Energy Letters</i> , 2021 , 6, 519-528	20.1	100
71	The Failure of Solid Electrolyte Interphase on Li Metal Anode: Structural Uniformity or Mechanical Strength?. <i>Advanced Energy Materials</i> , 2020 , 10, 1903645	21.8	98

70	Nanotwin-governed toughening mechanism in hierarchically structured biological materials. <i>Nature Communications</i> , 2016 , 7, 10772	17.4	88
69	Mechanical metamaterials: Smaller and stronger. <i>Nature Materials</i> , 2016 , 15, 373-4	27	82
68	Lightweight, flaw-tolerant, and ultrastrong nanoarchitected carbon. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 6665-6672	11.5	80
67	Designing graphene structures with controlled distributions of topological defects: A case study of toughness enhancement in graphene ruga. <i>Extreme Mechanics Letters</i> , 2014 , 1, 3-8	3.9	79
66	Electrospinning-Based Strategies for Battery Materials. <i>Advanced Energy Materials</i> , 2021 , 11, 2000845	21.8	78
65	A jogged dislocation governed strengthening mechanism in nanotwinned metals. <i>Nano Letters</i> , 2014 , 14, 5075-80	11.5	74
64	Three-Dimensional High-Entropy Alloy-Polymer Composite Nanolattices That Overcome the Strength-Recoverability Trade-off. <i>Nano Letters</i> , 2018 , 18, 4247-4256	11.5	65
63	In situ observations of crack arrest and bridging by nanoscale twins in copper thin films. <i>Acta Materialia</i> , 2012 , 60, 2959-2972	8.4	65
62	Is stress concentration relevant for nanocrystalline metals?. <i>Nano Letters</i> , 2011 , 11, 2510-6	11.5	63
61	Flowering time control in ornamental gloxinia (<i>Sinningia speciosa</i>) by manipulation of miR159 expression. <i>Annals of Botany</i> , 2013 , 111, 791-9	4.1	56
60	Scalable Synthesis of 2D Si Nanosheets. <i>Advanced Materials</i> , 2017 , 29, 1701777	24	54
59	Bending induced rippling and twisting of multiwalled carbon nanotubes. <i>Physical Review Letters</i> , 2007 , 98, 205502	7.4	49
58	Ultrahigh specific strength in a magnesium alloy strengthened by spinodal decomposition. <i>Science Advances</i> , 2021 , 7,	14.3	49
57	Size effects on tensile and compressive strengths in metallic glass nanowires. <i>Journal of the Mechanics and Physics of Solids</i> , 2015 , 84, 130-144	5	48
56	Fracture in a thin film of nanotwinned copper. <i>Acta Materialia</i> , 2015 , 98, 313-317	8.4	47
55	Regain Strain-Hardening in High-Strength Metals by Nanofiller Incorporation at Grain Boundaries. <i>Nano Letters</i> , 2018 , 18, 6255-6264	11.5	46
54	Theoretical strength and rubber-like behaviour in micro-sized pyrolytic carbon. <i>Nature Nanotechnology</i> , 2019 , 14, 762-769	28.7	44
53	Brittle versus ductile fracture mechanism transition in amorphous lithiated silicon: From intrinsic nanoscale cavitation to shear banding. <i>Nano Energy</i> , 2015 , 18, 89-96	17.1	42

52	Fracture, fatigue, and creep of nanotwinned metals. <i>MRS Bulletin</i> , 2016 , 41, 298-304	3.2	42
51	Atomistic mechanisms of fatigue in nanotwinned metals. <i>Acta Materialia</i> , 2015 , 99, 77-86	8.4	40
50	Stress effects on lithiation in silicon. <i>Nano Energy</i> , 2017 , 38, 486-493	17.1	39
49	Towards understanding the structure-property relationships of heterogeneous-structured materials. <i>Scripta Materialia</i> , 2020 , 186, 304-311	5.6	36
48	Buckled Tin Oxide Nanobelt Webs as Highly Stretchable and Transparent Photosensors. <i>Small</i> , 2015 , 11, 5712-8	11	34
47	Cycling of a Lithium-Ion Battery with a Silicon Anode Drives Large Mechanical Actuation. <i>Advanced Materials</i> , 2016 , 28, 10236-10243	24	33
46	An investigation of the combined size and rate effects on the mechanical responses of FCC metals. <i>International Journal of Solids and Structures</i> , 2007 , 44, 1180-1195	3.1	32
45	Ultralight and resilient Al ₂ O ₃ nanotube aerogels with low thermal conductivity. <i>Journal of the American Ceramic Society</i> , 2018 , 101, 1677-1683	3.8	31
44	Large-scale blow spinning of carbon microfiber sponge as efficient and recyclable oil sorbent. <i>Chemical Engineering Journal</i> , 2018 , 343, 638-644	14.7	29
43	Atomistic simulation for deforming complex alloys with application toward TWIP steel and associated physical insights. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 98, 290-308	5	29
42	Design, Fabrication, and Mechanics of 3D Micro-/Nanolattices. <i>Small</i> , 2020 , 16, e1902842	11	29
41	The extreme mechanics of micro- and nanoarchitected materials. <i>MRS Bulletin</i> , 2019 , 44, 758-765	3.2	27
40	Intrinsic toughening and stable crack propagation in hexagonal boron nitride. <i>Nature</i> , 2021 , 594, 57-61	50.4	25
39	Hardening and toughening mechanisms in nanotwinned ceramics. <i>Scripta Materialia</i> , 2017 , 133, 105-112	5.6	24
38	Bulk nanolaminated graphene (reduced graphene oxide)–aluminum composite tolerant of radiation damage. <i>Acta Materialia</i> , 2020 , 196, 17-29	8.4	20
37	Fullerene Coalescence into Metallic Heterostructures in Boron Nitride Nanotubes: A Molecular Dynamics Study. <i>Nano Letters</i> , 2007 , 7, 3709-3715	11.5	18
36	Watching Dynamic Self-Assembly of Web Buckles in Strained MoS ₂ Thin Films. <i>ACS Nano</i> , 2019 , 13, 3106-3116	11.6	17
35	Continuous Roll-to-Roll Production of Carbon Nanoparticles from Candle Soot. <i>Nano Letters</i> , 2021 , 21, 3198-3204	11.5	16

34	Torsional Detwinning Domino in Nanotwinned One-Dimensional Nanostructures. <i>Nano Letters</i> , 2015 , 15, 6082-7	11.5	15
33	Atomistic simulations for the evolution of a U-shaped dislocation in fcc Al. <i>Physical Review B</i> , 2006 , 74,	3.3	13
32	Simulating fullerene ball bearings of ultra-low friction. <i>Nanotechnology</i> , 2007 , 18, 115718	3.4	12
31	Deformation Mechanisms and Remarkable Strain Hardening in Single-Crystalline High-Entropy-Alloy Micropillars/Nanopillars. <i>Nano Letters</i> , 2021 , 21, 3671-3679	11.5	11
30	Dynamic recrystallization-induced temperature insensitivity of yield stress in single-crystal Al _{1.2} CrFeCoNi micropillars. <i>Science China Technological Sciences</i> , 2021 , 64, 11-22	3.5	11
29	Low-angle grain boundary structures and size effects of nickel nanolaminated structures. <i>Journal of the Mechanics and Physics of Solids</i> , 2019 , 130, 280-296	5	10
28	Microstructure- and concentration-dependence of lithium diffusion in the silicon anode: Kinetic Monte Carlo simulations and complex network analysis. <i>Applied Physics Letters</i> , 2018 , 113, 121904	3.4	10
27	Size and strain rate effects in tensile strength of penta-twinned Ag nanowires. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2017 , 33, 792-800	2	9
26	Atomistic mechanism of nucleation and growth of a face-centered orthogonal phase in small-sized single-crystalline Mo. <i>Materials Research Letters</i> , 2020 , 8, 348-355	7.4	8
25	Metal Nanoparticle Harvesting by Continuous Rotating Electrodeposition and Separation. <i>Matter</i> , 2020 , 3, 1294-1307	12.7	8
24	Electrospinning Engineering Enables High-Performance Sodium-Ion Batteries. <i>Advanced Fiber Materials</i> , ¹	10.9	8
23	Differential Geometry in Edge Detection: Accurate Estimation of Position, Orientation and Curvature. <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> , 2019 , 41, 1573-1586	13.3	7
22	Structural Defects, Mechanical Behaviors, and Properties of Two-Dimensional Materials. <i>Materials</i> , 2021 , 14,	3.5	7
21	Electrospinning Techniques: Electrospinning-Based Strategies for Battery Materials (Adv. Energy Mater. 2/2021). <i>Advanced Energy Materials</i> , 2021 , 11, 2170010	21.8	7
20	An Eccentric Ellipse Failure Criterion for Amorphous Materials. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2017 , 84,	2.7	6
19	Atomistic modelling of deformation and failure mechanisms in nanostructured materials. <i>National Science Review</i> , 2015 , 2, 133-136	10.8	6
18	Atomistic simulations of the tensile behavior of graphene fibers. <i>Extreme Mechanics Letters</i> , 2020 , 37, 100699	3.9	5
17	Atomistic simulations of superplasticity and amorphization of nanocrystalline anatase TiO ₂ . <i>Extreme Mechanics Letters</i> , 2018 , 22, 131-137	3.9	5

16	Lithiation-enhanced charge transfer and sliding strength at the silicon-graphene interface: A first-principles study. <i>Acta Mechanica Solida Sinica</i> , 2017 , 30, 254-262	2	4
15	Multiple time step molecular dynamics simulation for interaction between dislocations and grain boundaries. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2005 , 21, 371-379	2	4
14	Anomalous strain effect on the thermal conductivity of low-buckled two-dimensional silicene. <i>National Science Review</i> , 2021 , 8, nwaa220	10.8	4
13	Size Dependence of Dislocation-Mediated Plasticity in Ni Single Crystals: Molecular Dynamics Simulations. <i>Journal of Nanomaterials</i> , 2009 , 2009, 1-10	3.2	3
12	Atomistic simulations of high-temperature creep in nanotwinned TiAl alloys. <i>Extreme Mechanics Letters</i> , 2021 , 44, 101253	3.9	3
11	Influence of load orientations with respect to twin boundaries on the deformation behaviors of high-entropy alloy nanocrystals. <i>MRS Bulletin</i> , 2021 , 46, 205-216	3.2	3
10	Topological Design of Graphene 2019 , 1-44		2
9	Atomistic Simulations of Fracture and Fatigue in Nanotwinned and Amorphous Materials 2020 , 1845-1868		2
8	Toughening and Crack Healing Mechanisms in Nanotwinned Diamond Composites with Various Polytypes. <i>Physical Review Letters</i> , 2021 , 127, 066101	7.4	2
7	Recent Progress on Zeolitic Imidazolate Frameworks and Their Derivatives in Alkali Metal-Chalcogen Batteries. <i>Advanced Energy Materials</i> , 2103152	21.8	1
6	Built from connected nested tubes. <i>Nature Materials</i> , 2021 , 20, 1453-1454	27	1
5	Analytical Models for Predicting the Nonlinear Stress-Strain Relationships and Behaviors of Two-Dimensional Carbon Materials. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2021 , 88,	2.7	1
4	Atomistic Simulations of Fracture and Fatigue in Nanotwinned and Amorphous Materials 2018 , 1-24		1
3	Size effects and plastic deformation mechanisms in single-crystalline CoCrFeNi micro/nanopillars. <i>Journal of the Mechanics and Physics of Solids</i> , 2022 , 162, 104853	5	0
2	Mechanics of Nanotwinned Hierarchical Metals 2012 , 129-162		
1	Influence of load orientations with respect to twin boundaries on the deformation behaviors of high-entropy alloy nanocrystals. <i>MRS Bulletin</i> , 1-12	3.2	