Xiaoyan Li

List of Publications by Year in Descending Order

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	Size effects and plastic deformation mechanisms in single-crystalline CoCrFeNi micro/nanopillars. *Journal of the Mechanics and Physics of Solids*, **2022**, 162, 104853	5	0
86	Built from connected nested tubes. *Nature Materials*, **2021**, 20, 1453-1454	27	1
85	Anomalous strain effect on the thermal conductivity of low-buckled two-dimensional silicene. *National Science Review*, **2021**, 8, nwaa220	10.8	4
84	Continuous Roll-to-Roll Production of Carbon Nanoparticles from Candle Soot. *Nano Letters*, **2021**, 21, 3198-3204	11.5	16
83	Structural Defects, Mechanical Behaviors, and Properties of Two-Dimensional Materials. *Materials*, **2021**, 14,	3.5	7
82	Deformation Mechanisms and Remarkable Strain Hardening in Single-Crystalline High-Entropy-Alloy Micropillars/Nanopillars. *Nano Letters*, **2021**, 21, 3671-3679	11.5	11
81	Analytical Models for Predicting the Nonlinear Stress–Strain Relationships and Behaviors of Two-Dimensional Carbon Materials. *Journal of Applied Mechanics, Transactions ASME*, **2021**, 88,	2.7	1
80	Atomistic simulations of high-temperature creep in nanotwinned TiAl alloys. *Extreme Mechanics Letters*, **2021**, 44, 101253	3.9	3
79	Ultrahigh specific strength in a magnesium alloy strengthened by spinodal decomposition. *Science Advances*, **2021**, 7,	14.3	49
78	Intrinsic toughening and stable crack propagation in hexagonal boron nitride. *Nature*, **2021**, 594, 57-61	50.4	25
77	Electrospinning-Based Strategies for Battery Materials. *Advanced Energy Materials*, **2021**, 11, 2000845	21.8	78
76	Dynamic recrystallization-induced temperature insensitivity of yield stress in single-crystal Al1.2CrFeCoNi micropillars. *Science China Technological Sciences*, **2021**, 64, 11-22	3.5	11
75	Perovskite Quantum Dots Glasses Based Backlit Displays. *ACS Energy Letters*, **2021**, 6, 519-528	20.1	100
74	Influence of load orientations with respect to twin boundaries on the deformation behaviors of high-entropy alloy nanocrystals. *MRS Bulletin*, **2021**, 46, 205-216	3.2	3
73	Toughening and Crack Healing Mechanisms in Nanotwinned Diamond Composites with Various Polytypes. *Physical Review Letters*, **2021**, 127, 066101	7.4	2
72	Electrospinning Techniques: Electrospinning-Based Strategies for Battery Materials (Adv. Energy Mater. 2/2021). *Advanced Energy Materials*, **2021**, 11, 2170010	21.8	7
71	Atomistic mechanism of nucleation and growth of a face-centered orthogonal phase in small-sized single-crystalline Mo. *Materials Research Letters*, **2020**, 8, 348-355	7.4	8

70	Towards understanding the structure–property relationships of heterogeneous-structured materials. *Scripta Materialia*, **2020**, 186, 304-311	5.6	36
69	Bulk nanolaminated graphene (reduced graphene oxide)–aluminum composite tolerant of radiation damage. *Acta Materialia*, **2020**, 196, 17-29	8.4	20
68	Mechanical properties and deformation mechanisms of gradient nanostructured metals and alloys. *Nature Reviews Materials*, **2020**, 5, 706-723	73.3	126
67	Atomistic simulations of the tensile behavior of graphene fibers. *Extreme Mechanics Letters*, **2020**, 37, 100699	3.9	5
66	Atomistic Simulations of Fracture and Fatigue in Nanotwinned and Amorphous Materials **2020**, 1845-1868		2
65	Design, Fabrication, and Mechanics of 3D Micro-/Nanolattices. *Small*, **2020**, 16, e1902842	11	29
64	Metal Nanoparticle Harvesting by Continuous Rotating Electrodeposition and Separation. *Matter*, **2020**, 3, 1294-1307	12.7	8
63	The Failure of Solid Electrolyte Interphase on Li Metal Anode: Structural Uniformity or Mechanical Strength?. *Advanced Energy Materials*, **2020**, 10, 1903645	21.8	98
62	Lightweight, flaw-tolerant, and ultrastrong nanoarchitected carbon. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 6665-6672	11.5	80
61	Differential Geometry in Edge Detection: Accurate Estimation of Position, Orientation and Curvature. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, **2019**, 41, 1573-1586	13.3	7
60	Low-angle grain boundary structures and size effects of nickel nanolaminated structures. *Journal of the Mechanics and Physics of Solids*, **2019**, 130, 280-296	5	10
59	Theoretical strength and rubber-like behaviour in micro-sized pyrolytic carbon. *Nature Nanotechnology*, **2019**, 14, 762-769	28.7	44
58	The extreme mechanics of micro- and nanoarchitected materials. *MRS Bulletin*, **2019**, 44, 758-765	3.2	27
57	Topological Design of Graphene **2019**, 1-44		2
56	Watching Dynamic Self-Assembly of Web Buckles in Strained MoS Thin Films. *ACS Nano*, **2019**, 13, 3106-3116	16.7	17
55	Large-scale blow spinning of carbon microfiber sponge as efficient and recyclable oil sorbent. *Chemical Engineering Journal*, **2018**, 343, 638-644	14.7	29
54	Ultralight and resilient Al2O3 nanotube aerogels with low thermal conductivity. *Journal of the American Ceramic Society*, **2018**, 101, 1677-1683	3.8	31
53	Atomistic simulations of superplasticity and amorphization of nanocrystalline anatase TiO2. *Extreme Mechanics Letters*, **2018**, 22, 131-137	3.9	5

52	Three-Dimensional High-Entropy Alloy-Polymer Composite Nanolattices That Overcome the Strength-Recoverability Trade-off. *Nano Letters*, **2018**, 18, 4247-4256	11.5	65
51	High-content ductile coherent nanoprecipitates achieve ultrastrong high-entropy alloys. *Nature Communications*, **2018**, 9, 4063	17.4	218
50	Microstructure- and concentration-dependence of lithium diffusion in the silicon anode: Kinetic Monte Carlo simulations and complex network analysis. *Applied Physics Letters*, **2018**, 113, 121904	3.4	10
49	Atomistic Simulations of Fracture and Fatigue in Nanotwinned and Amorphous Materials **2018**, 1-24		1
48	Regain Strain-Hardening in High-Strength Metals by Nanofiller Incorporation at Grain Boundaries. *Nano Letters*, **2018**, 18, 6255-6264	11.5	46
47	Hardening and toughening mechanisms in nanotwinned ceramics. *Scripta Materialia*, **2017**, 133, 105-112	5.6	24
46	Size and strain rate effects in tensile strength of penta-twinned Ag nanowires. *Acta Mechanica Sinica/Lixue Xuebao*, **2017**, 33, 792-800	2	9
45	Stress effects on lithiation in silicon. *Nano Energy*, **2017**, 38, 486-493	17.1	39
44	Scalable Synthesis of 2D Si Nanosheets. *Advanced Materials*, **2017**, 29, 1701777	24	54
43	Ultralight, scalable, and high-temperature-resilient ceramic nanofiber sponges. *Science Advances*, **2017**, 3, e1603170	14.3	123
42	An Eccentric Ellipse Failure Criterion for Amorphous Materials. *Journal of Applied Mechanics, Transactions ASME*, **2017**, 84,	2.7	6
41	Lithiation-enhanced charge transfer and sliding strength at the silicon-graphene interface: A first-principles study. *Acta Mechanica Solida Sinica*, **2017**, 30, 254-262	2	4
40	Atomistic simulation for deforming complex alloys with application toward TWIP steel and associated physical insights. *Journal of the Mechanics and Physics of Solids*, **2017**, 98, 290-308	5	29
39	Mechanical metamaterials: Smaller and stronger. *Nature Materials*, **2016**, 15, 373-4	27	82
38	Nanotwin-governed toughening mechanism in hierarchically structured biological materials. *Nature Communications*, **2016**, 7, 10772	17.4	88
37	Gradient plasticity in gradient nano-grained metals. *Extreme Mechanics Letters*, **2016**, 8, 213-219	3.9	111
36	Fracture, fatigue, and creep of nanotwinned metals. *MRS Bulletin*, **2016**, 41, 298-304	3.2	42
35	Cycling of a Lithium-Ion Battery with a Silicon Anode Drives Large Mechanical Actuation. *Advanced Materials*, **2016**, 28, 10236-10243	24	33

34	Atomistic mechanisms of fatigue in nanotwinned metals. *Acta Materialia*, **2015**, 99, 77-86	8.4	40
33	Fracture in a thin film of nanotwinned copper. *Acta Materialia*, **2015**, 98, 313-317	8.4	47
32	Size effects on tensile and compressive strengths in metallic glass nanowires. *Journal of the Mechanics and Physics of Solids*, **2015**, 84, 130-144	5	48
31	Torsional Detwinning Domino in Nanotwinned One-Dimensional Nanostructures. *Nano Letters*, **2015**, 15, 6082-7	11.5	15
30	Brittle versus ductile fracture mechanism transition in amorphous lithiated silicon: From intrinsic nanoscale cavitation to shear banding. *Nano Energy*, **2015**, 18, 89-96	17.1	42
29	Fracture of graphene: a review. *International Journal of Fracture*, **2015**, 196, 1-31	2.3	108
28	Buckled Tin Oxide Nanobelt Webs as Highly Stretchable and Transparent Photosensors. *Small*, **2015** , 11, 5712-8	11	34
27	Atomistic modelling of deformation and failure mechanisms in nanostructured materials. *National Science Review*, **2015**, 2, 133-136	10.8	6
26	Recoverable plasticity in penta-twinned metallic nanowires governed by dislocation nucleation and retraction. *Nature Communications*, **2015**, 6, 5983	17.4	114
25	Defects controlled wrinkling and topological design in graphene. *Journal of the Mechanics and Physics of Solids*, **2014**, 67, 2-13	5	100
24	A jogged dislocation governed strengthening mechanism in nanotwinned metals. *Nano Letters*, **2014**, 14, 5075-80	11.5	74
23	Designing graphene structures with controlled distributions of topological defects: A case study of toughness enhancement in graphene ruga. *Extreme Mechanics Letters*, **2014**, 1, 3-8	3.9	79
22	Plastic anisotropy and associated deformation mechanisms in nanotwinned metals. *Acta Materialia*, **2013**, 61, 217-227	8.4	206
21	Flowering time control in ornamental gloxinia (Sinningia speciosa) by manipulation of miR159 expression. *Annals of Botany*, **2013**, 111, 791-9	4.1	56
20	Mechanical properties and scaling laws of nanoporous gold. *Journal of Applied Physics*, **2013**, 113, 023505	2.5	137
19	Mechanics of Nanotwinned Hierarchical Metals **2012**, 129-162		
18	Flaw insensitive fracture in nanocrystalline graphene. *Nano Letters*, **2012**, 12, 4605-10	11.5	187
17	Deformation mechanisms in nanotwinned metal nanopillars. *Nature Nanotechnology*, **2012**, 7, 594-601	28.7	331

16	In situ observations of crack arrest and bridging by nanoscale twins in copper thin films. *Acta Materialia*, **2012**, 60, 2959-2972	8.4	65
15	Modeling grain size dependent optimal twin spacing for achieving ultimate high strength and related high ductility in nanotwinned metals. *Acta Materialia*, **2011**, 59, 5544-5557	8.4	159
14	Is stress concentration relevant for nanocrystalline metals?. *Nano Letters*, **2011**, 11, 2510-6	11.5	63
13	Dislocation nucleation governed softening and maximum strength in nano-twinned metals. *Nature*, **2010**, 464, 877-80	50.4	779
12	Competing grain-boundary- and dislocation-mediated mechanisms in plastic strain recovery in nanocrystalline aluminum. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 16108-13	11.5	102
11	Size Dependence of Dislocation-Mediated Plasticity in Ni Single Crystals: Molecular Dynamics Simulations. *Journal of Nanomaterials*, **2009**, 2009, 1-10	3.2	3
10	Fullerene Coalescence into Metallic Heterostructures in Boron Nitride Nanotubes:A Molecular Dynamics Study. *Nano Letters*, **2007**, 7, 3709-3715	11.5	18
9	An investigation of the combined size and rate effects on the mechanical responses of FCC metals. *International Journal of Solids and Structures*, **2007**, 44, 1180-1195	3.1	32
8	Bending induced rippling and twisting of multiwalled carbon nanotubes. *Physical Review Letters*, **2007**, 98, 205502	7.4	49
7	Simulating fullerene ball bearings of ultra-low friction. *Nanotechnology*, **2007**, 18, 115718	3.4	12
6	Atomistic simulations for the evolution of a U-shaped dislocation in fcc Al. *Physical Review B*, **2006**, 74,	3.3	13
5	Multiple time step molecular dynamics simulation for interaction between dislocations and grain boundaries. *Acta Mechanica Sinica/Lixue Xuebao*, **2005**, 21, 371-379	2	4
4	Love waves in functionally graded piezoelectric materials. *International Journal of Solids and Structures*, **2004**, 41, 7309-7328	3.1	109
3	Influence of load orientations with respect to twin boundaries on the deformation behaviors of high-entropy alloy nanocrystals. *MRS Bulletin*,1-12	3.2	
2	Recent Progress on Zeolitic Imidazolate Frameworks and Their Derivatives in Alkali MetalChalcogen Batteries. *Advanced Energy Materials*,2103152	21.8	1
1	Electrospinning Engineering Enables High-Performance Sodium-Ion Batteries. *Advanced Fiber Materials*,1	10.9	8