Ultrahigh Strength in Nanocrystalline Materials Under

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Citation Report

#	Article	IF	CITATIONS
2	A Continuum Modeling of Nanocrystalline Metals Under Shock Loading. , 2006, , .		1
3	Deforming nanocrystalline nickel at ultrahigh strain rates. Applied Physics Letters, 2006, 88, 061917.	3.3	65
4	Reshock response of shock deformed aluminum. Journal of Applied Physics, 2006, 100, 043514.	2.5	38
5	Predicting the Energy of the Water Exchange Reaction and Free Energy of Solvation for the Uranyl Ion in Aqueous Solution. Journal of Physical Chemistry A, 2006, 110, 8840-8856.	2.5	167
6	Shock deformation of face-centred-cubic metals on subnanosecond timescales. Nature Materials, 2006, 5, 805-809.	27.5	227
7	The deformation physics of nanocrystalline metals: Experiments, analysis, and computations. Jom, 2006, 58, 41-48.	1.9	74
8	Crystal-Orientation Dependent Evolution of Edge Dislocations from a Void in Single Crystal Cu. Chinese Physics Letters, 2006, 23, 3041-3044.	3.3	6
9	Nonplanar core and dynamical behavior of screw dislocations in copper at high velocities. Physical Review B, 2006, 74, .	3.2	26
10	Simulation of shock-induced melting of Ni using molecular dynamics coupled to a two-temperature model. Physical Review B, 2006, 74, .	3.2	46
11	Pressure effects on grain boundary plasticity in nanophase metals. Applied Physics Letters, 2006, 89, 023101.	3.3	11
12	TENSILE FAILURE OF SINGLE-CRYSTAL AND NANOCRYSTALLINE LENNARD-JONES SOLIDS UNDER UNIAXIAL STRAIN. International Journal of Modern Physics C, 2006, 17, 1551-1561.	1.7	10
13	Measurement of dynamic tensile strength of nanocrystalline copper by laser irradiation. Journal of Applied Physics, 2007, 101, 103528.	2.5	7
14	Computer Modeling of Nanostructured Materials. , 2007, , 293-328.		1
15	Tension–compression asymmetry and size effects in nanocrystalline Ni nanowires. Philosophical Magazine, 2007, 87, 2233-2244.	1.6	27
16	Grain growth resistance and increased hardness of bulk nanocrystalline fcc cobalt prepared by a bottom-up approach. Nanotechnology, 2007, 18, 035703.	2.6	10
17	Monte Carlo + molecular dynamics modeling of radiation damages in Pu. Journal of Alloys and Compounds, 2007, 444-445, 197-201.	5.5	32
18	The Mechanics and Physics of Defect Nucleation. MRS Bulletin, 2007, 32, 151-159.	3.5	139
19	A continuum model describing the reverse grain-size dependence of the strength of nanocrystalline metals. Philosophical Magazine, 2007, 87, 2541-2559.	1.6	14

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#	Article	IF	CITATIONS
20	Atomic-level view of inelastic deformation in a shock loaded molecular crystal. Physical Review B, 2007, 76, .	3.2	88
21	A viscoplastic micromechanical model for the yield strength of nanocrystalline materials. Acta Materialia, 2007, 55, 261-271.	7.9	30
22	The Hall–Petch breakdown in nanocrystalline metals: A crossover to glass-like deformation. Acta Materialia, 2007, 55, 5948-5958.	7.9	240
23	Simulations of boundary migration during recrystallization using molecular dynamics. Acta Materialia, 2007, 55, 6383-6391.	7.9	49
24	Deformation Substructures and Their Transitions in Laser Shock–Compressed Copper-Aluminum Alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2008, 39, 304-321.	2.2	32
25	Microstructural aspects related to pseudoelastic cycling in ultra fine grained Ni–Ti. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 481-482, 138-141.	5.6	16
26	High strength and high ductility of electrodeposited nanocrystalline Ni with a broad grain size distribution. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 487, 410-416.	5.6	69
27	Influence of single crystal orientation on homogeneous dislocation nucleation under uniaxial loading. Journal of the Mechanics and Physics of Solids, 2008, 56, 1806-1830.	4.8	167
28	Analysis for a screw dislocation accelerating through the shear-wave speed barrier. Journal of the Mechanics and Physics of Solids, 2008, 56, 2225-2239.	4.8	22
29	Enhanced strain-rate sensitivity in fcc nanocrystals due to grain-boundary diffusion and sliding. Acta Materialia, 2008, 56, 1741-1752.	7.9	149
30	Molecular dynamics simulations of shock compression of nickel: From monocrystals to nanocrystals. Acta Materialia, 2008, 56, 5584-5604.	7.9	115
31	Viscoplasticity of heterogeneous metallic materials. Materials Science and Engineering Reports, 2008, 62, 67-123.	31.8	150
32	Shocked materials at the intersection of experiment and simulation. Scientific Modeling and Simulation SMNS, 2008, 15, 159-186.	0.8	17
33	Effect of sliding speed on friction and wear behaviour of nanocrystalline nickel tested in an argon atmosphere. Wear, 2008, 265, 429-438.	3.1	51
34	High strength and high ductility in a nanoscale superlattice of Ni2(Cr,Mo) deformable by twinning. Scripta Materialia, 2008, 59, 846-849.	5.2	34
35	Atomistic Simulations of Dislocations in FCC Metallic Nanocrystalline Materials. Dislocations in Solids, 2008, , 1-42.	1.6	24
36	Deformation mechanisms and damage in α-alumina under hypervelocity impact loading. Journal of Applied Physics, 2008, 103, .	2.5	43
37	Simulating picosecond x-ray diffraction from shocked crystals using post-processing molecular dynamics calculations. Journal of Physics Condensed Matter, 2008, 20, 505203.	1.8	21

#	ARTICLE	IF	CITATIONS
38	Charge-Separation in Uranium Diazomethane Complexes Leading to Câ^'H Activation and Chemical Transformation. Journal of the American Chemical Society, 2008, 130, 2806-2816.	13.7	76
39	Shocked materials at the intersection of experiment and simulation. Lecture Notes in Computational Science and Engineering, 2008, , 159-186.	0.3	0
40	Angular Momentum Form of Verlet Algorithm for Rigid Molecules. Journal of the Physical Society of Japan, 2008, 77, 064001.	1.6	17
41	The Hall–Petch breakdown at high strain rates: Optimizing nanocrystalline grain size for impact applications. Applied Physics Letters, 2008, 93, .	3.3	77
42	Deformation mechanism transition caused by strain rate in a pulse electric brush-plated nanocrystalline Cu. Journal of Applied Physics, 2008, 104, .	2.5	33
43	IN-SITU PROBING OF LATTICE RESPONSE IN SHOCK COMPRESSED MATERIALS USING X-RAY DIFFRACTION. , 2008, , .		0
44	Shock-induced melting of (100)-oriented nitromethane: Structural relaxation. Journal of Chemical Physics, 2009, 131, 064503.	3.0	23
45	Atomic scale simulations of ductile failure micromechanisms in nanocrystalline Cu at high strain rates. Physical Review B, 2009, 80, .	3.2	71
46	Deformation Crossover: From Nano- to Mesoscale. Physical Review Letters, 2009, 103, 035502.	7.8	51
47	Chapter 89 Dislocations in Shock Compression and Release. Dislocations in Solids, 2009, 15, 91-197.	1.6	41
48	A continuum model of nanocrystalline metals under shock loading. Modelling and Simulation in Materials Science and Engineering, 2009, 17, 025001.	2.0	12
49	X-ray diffraction of electrodeposited nanocrystalline nickel under high pressure. Journal of Applied Physics, 2009, 105, 084311.	2.5	6
50	A Review of Computational Methods in Materials Science: Examples from Shock-Wave and Polymer Physics. International Journal of Molecular Sciences, 2009, 10, 5135-5216.	4.1	86
51	Long-Range Ordering: An Approach to Synthesize Nanoscale Ni-Mo-Based Superlattices with High Strength and High Ductility. Materials Science Forum, 2009, 633-634, 421-435.	0.3	4
52	High-Rate Plastic Deformation of Nanocrystalline Tantalum to Large Strains: Molecular Dynamics Simulation. Materials Science Forum, 0, 633-634, 3-19.	0.3	19
53	Orientation and rate dependence of dislocation nucleation stress computed using molecular dynamics. Scripta Materialia, 2009, 60, 675-678.	5.2	29
54	Application of long-range ordering in the synthesis of a nanoscale Ni2 (Cr,Mo) superlattice with high strength and high ductility. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 500, 188-195.	5.6	33
55	Internal stress and mechanical deformation of Al and Al/Ni multilayered nanowires. Acta Materialia, 2009, 57, 453-465.	7.9	9

#	Article	IF	CITATIONS
56	Strain rates in molecular dynamics simulations of nanocrystalline metals. Philosophical Magazine, 2009, 89, 3465-3475.	1.6	64
57	Influence of length on shock-induced breaking behavior of copper nanowires. Physical Review B, 2009, 80, .	3.2	36
58	Scientific Modeling and Simulations. Lecture Notes in Computational Science and Engineering, 2009, , .	0.3	8
59	Ultrafine Eutectic-Dendrite Composite Bulk Fe-B Alloy with Enhanced Ductility. Materials Transactions, 2009, 50, 2108-2110.	1.2	1
60	LARGE-SCALE CLASSICAL MOLECULAR DYNAMICS SIMULATIONS OF SHOCK-INDUCED PLASTICITY IN BCC NIOBIUM. , 2009, , .		8
61	Atomic-Scale Study of Plastic-Yield Criterion in Nanocrystalline Cu at High Strain Rates. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2010, 41, 523-531.	2.2	20
62	Void initiation in fcc metals: Effect of loading orientation and nanocrystalline effects. Acta Materialia, 2010, 58, 4458-4477.	7.9	154
63	Anisotropic shock response of columnar nanocrystalline Cu. Journal of Applied Physics, 2010, 107, .	2.5	74
64	Shock wave loading and spallation of copper bicrystals with asymmetric Σ3âŸ 110⟩ tilt grain boundaries. Journal of Applied Physics, 2010, 108, .	2.5	62
65	The shock-front structure of nanocrystalline aluminum. Applied Physics Letters, 2010, 97, .	3.3	26
66	Copper Better than Silver: Electrical Resistivity of the Grain-Free Single-Crystal Copper Wire. Crystal Growth and Design, 2010, 10, 2780-2784.	3.0	41
67	Tension–compression asymmetry in nanocrystalline Cu: High strain rate vs. quasi-static deformation. Computational Materials Science, 2010, 49, 260-265.	3.0	26
68	Onset of failure in argon by the effect of a shockwave: A molecular dynamics study. Computational Materials Science, 2010, 49, 582-587.	3.0	4
69	Metal deformation and phase transitions at extremely high strain rates. MRS Bulletin, 2010, 35, 999-1006.	3.5	26
70	Atomic scale studies of spall behavior in nanocrystalline Cu. Journal of Applied Physics, 2010, 108, .	2.5	71
71	The effect of vacancies on dynamic response of single crystal Cu to shock waves. Journal of Applied Physics, 2010, 107, .	2.5	30
72	Dislocation mediated plasticity in nanocrystalline Al: the strongest size. Modelling and Simulation in Materials Science and Engineering, 2011, 19, 074005.	2.0	20
73	Mechanical Behaviors of Electrodeposited Bulk Nanocrystalline Metals and Alloys. Materials Science Forum, 2011, 683, 113-126.	0.3	0

#	Article	IF	CITATIONS
74	The size dependence of the mechanical properties and breaking behavior of metallic nanowires: A statistical description. Computational Materials Science, 2011, 50, 1418-1424.	3.0	20
75	Deformation structures including twins in nanograined pure metals. , 2011, , 213-242.		5
76	A new method to generate dust with astrophysical properties. Journal of Instrumentation, 2011, 6, P05010-P05010.	1.2	6
77	Nanoscale View of Shock Wave Propagation in Single Crystal Fe, W, and Ta for Nuclear Fusion Technology. Fusion Science and Technology, 2011, 60, 590-594.	1.1	4
78	Modeling interstitial diffusion controlled twinning in alpha titanium during low-temperature creep. Scripta Materialia, 2011, 65, 638-641.	5.2	33
79	A constitutive model of nanocrystalline metals based on competing grain boundary and grain interior deformation mechanisms. Materials Letters, 2011, 65, 3391-3395.	2.6	11
80	Dislocations accelerating through the shear-wave speed barrier and effect of the acceleration on the Mach front curvature. International Journal of Engineering Science, 2011, 49, 1461-1469.	5.0	6
81	Two-Zone Elastic-Plastic Single Shock Waves in Solids. Physical Review Letters, 2011, 107, 135502.	7.8	90
82	Measurements of the ns-laserpulse induced expansion of (111) silicon below and above the melting threshold on the nanosecond time scale. Applied Physics A: Materials Science and Processing, 2011, 105, 25-30.	2.3	1
83	Penetration scaling in atomistic simulations of hypervelocity impact. International Journal of Impact Engineering, 2011, 38, 247-251.	5.0	3
84	Relationship between hardness and dislocation processes in a nanocrystalline metal at the atomic scale. Physical Review B, 2011, 83, .	3.2	31
85	Shock compression and spallation of palladium bicrystals with a Σ5 grain boundary. Journal of Applied Physics, 2011, 109, .	2.5	10
86	Uncovering high-strain rate protection mechanism in nacre. Scientific Reports, 2011, 1, 148.	3.3	87
87	Wave Front Analysis of a Supersonically Moving Edge Dislocation. Advanced Materials Research, 0, 538-541, 2102-2108.	0.3	0
88	Molecular dynamics simulations of shock waves in oriented nitromethane single crystals: Plane-specific effects. Journal of Chemical Physics, 2012, 136, 034501.	3.0	7
89	Shock loading and release of a small angle tilt grain boundary in CU. , 2012, , .		1
90	Atomistic investigation of scratching-induced deformation twinning in nanocrystalline Cu. Journal of Applied Physics, 2012, 112, .	2.5	21
91	Temperature-dependent competing deformation mechanisms in nanocrystalline metals. Physical Review B, 2012, 85, .	3.2	9

#	Article	IF	CITATIONS
92	Contributions of the embedded-atom method to materials science and engineering. MRS Bulletin, 2012, 37, 485-491.	3.5	24
93	Progress in Advanced Materials under Extreme Conditions for Nuclear Fusion Technology. Fusion Science and Technology, 2012, 61, 385-390.	1.1	Ο
94	Shock response of nanotwinned copper from large-scale molecular dynamics simulations. Physical Review B, 2012, 86, .	3.2	34
95	Combined grain size, strain rate and loading condition effects on mechanical behavior of nanocrystalline Cu under high strain rates. Acta Mechanica Sinica/Lixue Xuebao, 2012, 28, 1125-1132.	3.4	8
96	Shock-Induced Inelastic Deformation in Oriented Crystalline Pentaerythritol Tetranitrate. Journal of Physical Chemistry C, 2012, 116, 2226-2239.	3.1	32
97	Fabrication of the best conductor from single-crystal copper and the contribution of grain boundaries to the Debye temperature. CrystEngComm, 2012, 14, 1463-1467.	2.6	11
98	Orientation and rate dependence in high strain-rate compression of single-crystal silicon. Physical Review B, 2012, 86, .	3.2	28
99	Ductile tensile failure in metals through initiation and growth of nanosized voids. Acta Materialia, 2012, 60, 4856-4865.	7.9	78
100	Shock response of copper bicrystals with a â~3 asymmetric tilt grain boundary. Computational Materials Science, 2012, 59, 94-100.	3.0	25
101	Deformation and spallation of shocked Cu bicrystals with <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Σ</mml:mi>3 coherent and symmetric incoherent twin boundaries. Physical Review B, 2012, 85, .</mml:math 	3.2	37
102	Polycrystalline iron under compression: Plasticity and phase transitions. Physical Review B, 2012, 86, .	3.2	96
103	Sequential multiscale modelling of SiC/Al nanocomposites reinforced with WS <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:mrow </mml:msub>nanoparticles under static loading. Physical Review B. 2012. 86</mml:math 	3.2	6
104	Strain rate and orientation dependencies of the strength of single crystalline copper under compression. Physical Review B, 2012, 86, .	3.2	47
105	Ballistic performance of nanocrystalline and nanotwinned ultrafine crystal steel. Acta Materialia, 2012, 60, 1353-1367.	7.9	66
106	Parameterization of a rate-dependent model of shock-induced plasticity for copper, nickel, and aluminum. International Journal of Plasticity, 2012, 32-33, 134-154.	8.8	94
107	Deformation twinning in nanocrystalline materials. Progress in Materials Science, 2012, 57, 1-62.	32.8	1,065
108	Shock loading on AlN ceramics: A large scale molecular dynamics study. International Journal of Plasticity, 2013, 51, 122-131.	8.8	47

#	Article	IF	CITATIONS
110	Inverse Hall–Petch relationship in nanocrystalline tantalum. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 580, 414-426.	5.6	92
111	Effect of grain boundary structure on plastic deformation during shock compression using molecular dynamics. Modelling and Simulation in Materials Science and Engineering, 2013, 21, 015011.	2.0	34
112	Pivot Algorithm and Pushâ€off Method for Efficient System Generation of Allâ€ <scp>A</scp> tom Polymer Melts: Application to Hydroxylâ€ <scp>T</scp> erminated Polybutadiene. Macromolecular Theory and Simulations, 2013, 22, 344-353.	1.4	8
113	An improved atomistic simulation based mixed-mode cohesive zone law considering non-planar crack growth. International Journal of Solids and Structures, 2013, 50, 3346-3360.	2.7	23
114	Role of interface structure on the plastic response of Cu/Nb nanolaminates under shock compression: Non-equilibrium molecular dynamics simulations. Scripta Materialia, 2013, 68, 114-117.	5.2	81
115	Femtosecond Visualization of Lattice Dynamics in Shock-Compressed Matter. Science, 2013, 342, 220-223.	12.6	176
116	Ultrahigh strain-rate bending of copper nanopillars with laser-generated shock waves. Journal of Applied Physics, 2013, 114, .	2.5	11
117	A comparative study on shock compression of nanocrystalline Al and Cu: Shock profiles and microscopic views of plasticity. Journal of Applied Physics, 2013, 114, .	2.5	11
118	Molecular dynamics simulations of shock waves in <i>cis</i> -1,4-polybutadiene melts. Journal of Applied Physics, 2013, 114, .	2.5	17
119	Grain Boundary Motion under Dynamic Loading: Mechanism and Large-Scale Molecular Dynamics Simulations. Materials Research Letters, 2013, 1, 220-227.	8.7	9
120	The influence of laser-induced nanosecond rise-time stress waves on the microstructure and surface chemical activity of single crystal Cu nanopillars. Journal of Applied Physics, 2013, 113, 84309.	2.5	11
121	Identification of Secondary Dislocations by Singular Value Decomposition of the Nye Tensor. Acta Metallurgica Sinica (English Letters), 2014, 27, 1078-1082.	2.9	7
122	Scaling laws and deformation mechanisms of nanoporous copper under adiabatic uniaxial strain compression. AIP Advances, 2014, 4, 127109.	1.3	7
123	Interplay of plasticity and phase transformation in shock wave propagation in nanocrystalline iron. New Journal of Physics, 2014, 16, 093032.	2.9	32
124	Twin boundary spacing effects on shock response and spall behaviors of hierarchically nanotwinned fcc metals. Journal of Applied Physics, 2014, 115, .	2.5	23
125	Molecular dynamics simulations of shock waves in hydroxyl-terminated polybutadiene melts: Mechanical and structural responses. Journal of Chemical Physics, 2014, 140, 024902.	3.0	27
126	Elastic-plastic collapse of super-elastic shock waves in face-centered-cubic solids. Journal of Physics: Conference Series, 2014, 500, 172007.	0.4	11
127	Study on Laser Micro Shock Effect on Electrical Resistivity of Nanometer Copper Film. Advanced Materials Research, 0, 989-994, 45-48.	0.3	0

	Сітатіо	n Report	
# 128	ARTICLE Emergence of stable interfaces under extreme plastic deformation. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 4386-4390.	IF 7.1	Citations
129	Molecular dynamics simulations of shock-induced plasticity in tantalum. High Energy Density Physics, 2014, 10, 9-15.	1.5	74
130	Hydrostatic pressure effects on deformation mechanisms of nanocrystalline fcc metals. Computational Materials Science, 2014, 85, 8-15.	3.0	15
131	Molecular Dynamics Simulations of Plastic Damage in Metals. , 2014, , 1-30.		1
132	Atomistic simulation of the mechanical properties of nanoporous gold. Acta Materialia, 2014, 80, 67-76.	7.9	45
133	Shock-induced plasticity and the Hugoniot elastic limit in copper nano films and rods. Journal of Applied Physics, 2014, 115, 054301.	2.5	21
134	Simulations of <i>in situ</i> x-ray diffraction from uniaxially compressed highly textured polycrystalline targets. Journal of Applied Physics, 2015, 118, .	2.5	18
135	The mechanisms governing the activation of dislocation sources in aluminum at different strain rates. Journal of the Mechanics and Physics of Solids, 2015, 84, 273-292.	4.8	65
136	Anomalous multiplication of lattice dislocations at grain boundaries in nanocrystalline solids. Journal Physics D: Applied Physics, 2015, 48, 035302.	2.8	4
137	Mesoscale simulations of shockwave energy dissipation via chemical reactions. Journal of Chemical Physics, 2015, 142, 084108.	3.0	14
138	Confinement effects in irradiation of nanocrystalline diamond. Carbon, 2015, 93, 458-464.	10.3	17
139	Effect of strain rate on tensile strength of defective silicon nanorods. Acta Mechanica Solida Sinica, 2015, 28, 133-144.	1.9	4
140	Simulation of ballistic performance of coarse-grained metals strengthened by nanotwinned regions. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 085009.	2.0	21
141	Pressure-induced phase transitions of perovskite ferroelectric crystals: comparison of hydrostatic and 1D compression pressure. Journal Physics D: Applied Physics, 2015, 48, 465302.	2.8	3
142	Coupling between plasticity and phase transition of polycrystalline iron under shock compressions. International Journal of Plasticity, 2015, 71, 218-236.	8.8	57
143	Grain-Size-Independent Plastic Flow at Ultrahigh Pressures and Strain Rates. Physical Review Letters, 2015, 114, 065502.	7.8	67
144	Engineering Interface Structures and Thermal Stabilities via SPD Processing in Bulk Nanostructured Metals. Scientific Reports, 2014, 4, 4226.	3.3	65
145	Ductile-to-brittle fracture transition in polycrystalline nickel under tensile hydrostatic stress. Computational Materials Science, 2015, 109, 147-156.	3.0	8

#	Article	IF	CITATIONS
146	A dislocation kinetic model of the dislocation structure formation in a nanocrystalline material under intense shock wave propagation. Physics of the Solid State, 2015, 57, 967-973.	0.6	3
147	Attenuation of the Dynamic Yield Point of Shocked Aluminum Using Elastodynamic Simulations of Dislocation Dynamics. Physical Review Letters, 2015, 114, 174301.	7.8	62
148	Shock-induced deformation of nanocrystalline Al: Characterization with orientation mapping and selected area electron diffraction. Journal of Applied Physics, 2015, 117, .	2.5	33
149	Orientation-dependent responses of tungsten single crystal under shock compression via molecular dynamics simulations. Computational Materials Science, 2015, 110, 359-367.	3.0	15
150	Morphological changes in polycrystalline Fe after compression and release. Journal of Applied Physics, 2015, 117, .	2.5	23
151	How grain size controls friction and wear in nanocrystalline metals. Physical Review B, 2015, 92, .	3.2	31
152	Dislocation evolution and peak spall strengths in single crystal and nanocrystalline Cu. Journal of Applied Physics, 2016, 119, .	2.5	77
153	Shock wave propagation and spall failure in single crystal Mg at atomic scales. Journal of Applied Physics, 2016, 119, .	2.5	42
154	Probing the Soft and Nanoductile Mechanical Nature of Single and Polycrystalline Organic–Inorganic Hybrid Perovskites for Flexible Functional Devices. ACS Nano, 2016, 10, 11044-11057.	14.6	89
155	Tension-compression asymmetry and twin boundaries spacings effects in polycrystalline Ni nanowires. Journal of Applied Physics, 2016, 120, 044303.	2.5	12
156	In situ characterization of fracture toughness and dynamics of nanocrystalline titanium nitride films. Journal of Materials Research, 2016, 31, 370-379.	2.6	18
157	A higher order elasto-viscoplastic model using fast Fourier transforms: Effects of lattice curvatures on mechanical response of nanocrystalline metals. International Journal of Plasticity, 2016, 83, 126-152.	8.8	22
158	A molecular dynamics study of the shock-induced defect microstructure in single crystal Cu. Computational Materials Science, 2016, 124, 304-310.	3.0	27
159	Dynamic Evolution of Defect Structures during Spall Failure of Nanocrystalline Al. MRS Advances, 2016, 1, 3853-3858.	0.9	0
160	Twin boundary activated αÂ→Âω phase transformation in titanium under shock compression. Acta Materialia, 2016, 115, 1-9.	7.9	28
161	Influence of nanoscale amorphization on emission of dislocations from a finite length crack tip in nanocrystalline materials. Engineering Fracture Mechanics, 2016, 163, 487-498.	4.3	2
162	Coarse-grained elastodynamics of fast moving dislocations. Acta Materialia, 2016, 104, 143-155.	7.9	47
163	Recent Advances in Superhard Materials. Annual Review of Materials Research, 2016, 46, 383-406.	9.3	119

ARTICLE IF CITATIONS # Thermally stable coherent domain boundaries in complex-structured Cr₂Nb 1.6 10 164 intermetallics. Philosophical Magazine, 2016, 96, 58-70. Atomistic modeling of the effect of calcium on the yield surface of nanopolycrystalline magnesium-based alloys. Computational Materials Science, 2016, 112, 219-229. Interatomic Fe-H potential for irradiation and embrittlement simulations. Computational Materials 166 3.0 17 Science, 2016, 111, 525-531. On the ultimate tensile strength of tantalum. Acta Materialia, 2017, 126, 313-328. 7.9 Nanomechanical modeling of interfaces of polyvinyl alcohol (PVA)/clay nanocomposite. Philosophical 168 1.6 8 Magazine, 2017, 97, 1179-1208. Impurity stabilization of nanocrystalline grains in pulsed laser deposited tantalum. Journal of Materials Research, 2017, 32, 1351-1360. 2.6 170 Hillock formation on nanocrystalline diamond. Carbon, 2017, 119, 219-224. 10.3 9 Simulation of tantalum nanocrystals under shock-wave loading: Dislocations and twinning. AIP 0.4 Conference Proceedings, 2017, , . Molecular dynamics simulation of the plastic behavior anisotropy of shock-compressed monocrystal 173 1.5 6 nickel. European Physical Journal B, 2017, 90, 1. Influence of grain boundary structure and topology on the plastic deformation of nanocrystalline 174 8.8 aluminum as studied by atomistic simulations. International Journal of Plasticity, 2017, 97, 107-125. Modeling of grain size strengthening in tantalum at high pressures and strain rates. AIP Conference 175 3 0.4 Proceedings, 2017, , . Mapping the strain-rate and grain-size dependence of deformation behaviors in nanocrystalline 5.5 face-centered-cubic Ni and Ni-based alloys. Journal of Alloys and Compounds, 2017, 709, 566-574. Stability of nanocrystalline Ni-based alloys: coupling Monte Carlo and molecular dynamics 177 2.0 4 simulations. Modelling and Simulation in Materials Science and Engineering, 2017, 25, 075005. Shock wave propagation and spall failure of nanocrystalline Cu/Ta alloys: Effect of Ta in solid-solution. Journal of Applied Physics, 2017, 122, . 178 2.5 29 Modeling the thermodynamic behavior and shock response of Ti systems at the atomic scales and the 179 19 3.7 mesoscales. Journal of Materials Science, 2017, 52, 10853-10870. Shock-induced microstructural response of mono- and nanocrystalline SiC ceramics. Journal of 24 Applied Physics, 2018, 123, . Mechanical properties of Au foams under nanoindentation. Computational Materials Science, 2018, 181 3.024 147, 154-167. Elastic precursor wave decay in shock-compressed aluminum over a wide range of temperature. Journal of Applied Physics, 2018, 123, .

#	Article	IF	Citations
183	Constitutive Material Models for High Strain Rate Behavior of Cementitious Materials from Material Chemistry—Molecular Dynamics Modeling Methodology with Illustrative Application to Hydrated Calcium Silicate Hydrate Jennite. Springer Transactions in Civil and Environmental Engineering, 2018, , 423-442.	0.4	1
184	Effects of strain rate and annealing temperature on tensile properties of nanocrystalline diamond. Carbon, 2018, 136, 320-328.	10.3	36
185	Significantly enhanced crack blunting by nanograin rotation in nanocrystalline materials. Scripta Materialia, 2018, 151, 19-23.	5.2	4
186	Shock compression of Cu x Zr100â^'x metallic glasses from molecular dynamics simulations. Journal of Materials Science, 2018, 53, 5719-5732.	3.7	23
187	Dynamic mechanical behaviors of calcium silicate hydrate under shock compression loading using molecular dynamics simulation. Journal of Non-Crystalline Solids, 2018, 500, 482-486.	3.1	25
188	Texture of nanocrystalline solids: atomic scale characterization and applications. Journal of Applied Crystallography, 2018, 51, 124-132.	4.5	7
189	Surface premelting/recrystallization governing the collapse of open-cell nanoporous Cu <i>via</i> thermal annealing. Physical Chemistry Chemical Physics, 2018, 20, 16184-16192.	2.8	6
190	Orientation dependent spall strength of tantalum single crystals. Acta Materialia, 2018, 159, 241-248.	7.9	60
191	Plastic Deformation Induced by Nanoindentation Test Applied on ZrN/Si3N4 Multilayer Coatings. Coatings, 2018, 8, 11.	2.6	8
192	Evaluating the material strength from fracture angle under uniaxial loading. Frontiers of Structural and Civil Engineering, 2019, 13, 288-293.	2.9	1
193	Thermomechanical responses in metal films under mechanical shock: A molecular dynamics study. Journal of Thermal Stresses, 2019, 42, 1330-1337.	2.0	1
194	Plasticity without dislocations in a polycrystalline intermetallic. Nature Communications, 2019, 10, 3587.	12.8	38
195	On the origin of the stress spike decay in the elastic precursor in shocked metals. Journal of Applied Physics, 2019, 126, .	2.5	11
196	Cylindrical voids induced deformation response of single crystal coppers during low-speed shock compressions: A molecular dynamics study. Mechanics of Materials, 2019, 138, 103167.	3.2	21
197	Mechanical performance of lightweight polycrystalline Ni nanotubes. Computational Materials Science, 2019, 168, 81-86.	3.0	8
198	Dynamic self-strengthening of a bio-nanostructured armor — conch shell. Materials Science and Engineering C, 2019, 103, 109820.	7.3	26
199	Transient phase transitions in single-crystal coppers under ultrafast lasers induced shock compression: A molecular dynamics study. Journal of Applied Physics, 2019, 125, .	2.5	24
200	Nanocrystallization in single-crystal copper under laser shock compression: A molecular dynamics study. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 752, 115-127.	5.6	28

#	Article	IF	CITATIONS
201	On the chain-melted phase of matter. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 10297-10302.	7.1	19
202	Shock-Induced Chemistry: Molecular Dynamics and Coarse Grain Modeling. Challenges and Advances in Computational Chemistry and Physics, 2019, , 187-208.	0.6	4
203	Computational 3-dimensional dislocation elastodynamics. Journal of the Mechanics and Physics of Solids, 2019, 126, 20-51.	4.8	20
204	Nonisentropic Release of a Shocked Solid. Physical Review Letters, 2019, 123, 245501.	7.8	11
205	Atomistically motivated interface model to account for coupled plasticity and damage at grain boundaries. Journal of the Mechanics and Physics of Solids, 2019, 124, 325-349.	4.8	27
206	Discrete Particle Methods for Simulating Quasi-Static Load and Hypervelocity Impact Phenomena. International Journal of Computational Methods, 2019, 16, 1740009.	1.3	2
207	Ductile-brittle transition of open-cell nanoporous Cu in tension: A reliance of specific surface area. Scripta Materialia, 2020, 175, 43-48.	5.2	6
208	Ultrastrong π-Bonded Interface as Ductile Plastic Flow Channel in Nanostructured Diamond. ACS Applied Materials & Interfaces, 2020, 12, 4135-4142.	8.0	7
209	Hierarchical nanotwins in single-crystal-like nickel with high strength and corrosion resistance produced <i>via</i> a hybrid technique. Nanoscale, 2020, 12, 1356-1365.	5.6	27
210	On the grain size dependence of shock responses in nanocrystalline sic ceramics at high strain rates. Acta Materialia, 2020, 200, 632-651.	7.9	32
211	Hydrogen effects on the mechanical properties of nanocrystalline free-standing Palladium thin films. International Journal of Hydrogen Energy, 2020, 45, 15213-15225.	7.1	5
212	Thermal Stability of Hollow Porous Gold Nanoparticles: A Molecular Dynamics Study. Journal of Chemical Information and Modeling, 2020, 60, 6204-6210.	5.4	7
213	Shock Response of Full Density Nanopolycrystalline Diamond. Physical Review Letters, 2020, 125, 185701.	7.8	15
214	Selective excitation of two-wave structure depending on crystal orientation under shock compression. Science China: Physics, Mechanics and Astronomy, 2020, 63, 1.	5.1	14
215	Polycrystalline Ni nanotubes under compression: a molecular dynamics study. Scientific Reports, 2020, 10, 21096.	3.3	3
216	Atomic investigation of effects of coating and confinement layer on laser shock peening. Optics and Laser Technology, 2020, 131, 106409.	4.6	20
217	Stable microstructure in a nanocrystalline copper–tantalum alloy during shock loading. Communications Materials, 2020, 1, .	6.9	3
218	Microstructural changes in materials under shock and high strain rate processes: recent updates. , 2020, , 361-392.		2

#	Article	IF	CITATIONS
219	Molecular dynamics simulation of cylindrically converging shock response in single crystal Cu. Computational Materials Science, 2020, 183, 109845.	3.0	6
220	Understanding Thermodynamic and Kinetic Stabilization of FeNiZr via Systematic High-Throughput In Situ XRD Analysis. Metals, 2020, 10, 482.	2.3	0
221	Molecular dynamics simulation of strengthening of nanocrystalline Cu alloyed with Zr. Materials Today Communications, 2021, 26, 101963.	1.9	5
222	Molecular dynamics study of the effect of extended ingrain defects on grain growth kinetics in nanocrystalline copper. Scientific Reports, 2021, 11, 934.	3.3	8
223	Dynamic Strength of Copper at High Pressures Using Pressure Shear Plate Experiments. Journal of Dynamic Behavior of Materials, 2021, 7, 248-261.	1.7	13
224	Revisiting the Power Law Characteristics of the Plastic Shock Front under Shock Loading. Physical Review Letters, 2021, 126, 085503.	7.8	7
225	High-velocity micro-projectile impact testing. Applied Physics Reviews, 2021, 8, .	11.3	46
226	Shock response and defect evolution of copper single crystals at room and elevated temperatures. Modelling and Simulation in Materials Science and Engineering, 2021, 29, 045006.	2.0	6
227	Role of pre-existing dislocations on the shock compression and spall behavior in single-crystal copper at atomic scales. Journal of Applied Physics, 2021, 129, .	2.5	14
228	Enhancement of Diffusion Assisted Bonding of the Bimetal Composite of Austenitic/Ferric Steels via Intrinsic Interlayers. Materials, 2021, 14, 2416.	2.9	1
229	Fingerprinting shock-induced deformations via diffraction. Scientific Reports, 2021, 11, 9872.	3.3	7
230	Atomistic investigation of mechanical response and deformation mechanism of BCC Ta under double shock loading. Journal of Applied Physics, 2021, 129, .	2.5	8
232	Chemistry Under Shock Conditions. Annual Review of Materials Research, 2021, 51, 101-130.	9.3	25
233	Mechanical response of mesoporous amorphous NiTi alloy to external deformations. International Journal of Solids and Structures, 2021, 224, 111047.	2.7	19
234	Unveiling grain size effect on shock-induced plasticity and its underlying mechanisms in nano-polycrystalline Ta. Mechanics of Materials, 2021, 160, 103952.	3.2	8
235	Effect of pore shape and porosity on the elastic and fracture properties of nanoporous Mg and Mg17Al12. Computational Materials Science, 2021, 197, 110666.	3.0	3
236	Grain size dependent microstructure and texture evolution during dynamic deformation of nanocrystalline face-centered cubic materials. Acta Materialia, 2021, 216, 117088.	7.9	10
237	Atomistic study of shock Hugoniot in columnar nanocrystalline copper. Computational Materials Science, 2021, 197, 110635.	3.0	4

# 238	ARTICLE A novel shock-induced multistage phase transformation and underlying mechanism in textured Nano-Twinned Cu. Extreme Mechanics Letters, 2021, 48, 101448.	IF 4.1	CITATIONS 9
239	Understanding the plasticity contributions during laser-shock loading and spall failure of Cu microstructures at the atomic scales. Computational Materials Science, 2021, 198, 110668.	3.0	16
240	Increasing high-temperature fatigue resistance of polysynthetic twinned TiAl single crystal by plastic strain delocalization. Journal of Materials Science and Technology, 2021, 93, 53-59.	10.7	38
241	The deformation mechanism of nanocrystalline nickel under high strain rate. Materials Letters, 2021, 305, 130790.	2.6	1
242	Tension–compression behavior in gold nanoparticle arrays: a molecular dynamics study. Nanotechnology, 2021, 32, 145715.	2.6	5
244	Multiscale modeling, coarse-graining and shock wave computer simulations in materials science. AIMS Materials Science, 2017, 4, 1319-1357.	1.4	3
245	Strongly Anisotropic Thermomechanical Response to Shock Wave Loading in Oriented Samples of the Triclinic Molecular Crystal 1,3,5-Triamino-2,4,6-trinitrobenzene. Journal of Physical Chemistry C, 2021, 125, 22747-22765.	3.1	13
246	Role of local chemical fluctuations in the shock dynamics of medium entropy alloy CoCrNi. Acta Materialia, 2021, 221, 117380.	7.9	63
247	Shocked metals are stronger. Nature, 0, , .	27.8	0
248	Construction of metallic nanocrystalline samples by molecular dynamics simulation. Wuli Xuebao/Acta Physica Sinica, 2010, 59, 4781.	0.5	6
249	Molecular dynamics investigation of shock front in nanocrystalline aluminum: grain boundary effects. Wuli Xuebao/Acta Physica Sinica, 2011, 60, 016107.	0.5	7
250	Bulk Nanostructured Materials. The Electrical Engineering Handbook, 2012, , 683-710.	0.2	0
251	Molecular dynamics investigation of shock front in nanocrystalline copper. Wuli Xuebao/Acta Physica Sinica, 2013, 62, 036201.	0.5	1
252	Femtosecond Laser-Driven Shock Compression of Solids. The Review of Laser Engineering, 2014, 42, 452.	0.0	1
253	Molecular Dynamics Simulations of Plastic Damage in Metals. , 2015, , 453-486.		2
254	Simulations of Bulk Nanostructured Solids. , 2016, , 3692-3696.		0
255	Exceptionally high spallation strength for a high-entropy alloy demonstrated by experiments and simulations. Journal of Alloys and Compounds, 2022, 895, 162567.	5.5	26
256	Uncovering the softening mechanism and exploring the strengthening strategies in extremely fine nanograined metals: A molecular dynamics study. Journal of Materials Science and Technology, 2022, 109, 186-196.	10.7	13

#	Article	IF	CITATIONS
257	Strengthening Superhard Materials by Nanostructure Engineering. Journal of Superhard Materials, 2021, 43, 307-329.	1.2	2
258	Molecular dynamics study on shock-induced spallation and damage evolution in nano-polycrystalline Ta: Internal grain size effect vs external shock intensity effect. Journal of Applied Physics, 2021, 130, .	2.5	4
259	Atomistic investigation on the conversion of plastic work to heat in high-rate shear deformation. International Journal of Plasticity, 2022, 149, 103158.	8.8	10
260	Delay of inverse Hall-Petch relationship of nanocrystalline Cu by modifying grain boundaries with coherent twins. Physical Review B, 2022, 105, .	3.2	6
261	Collapse of helium-filled voids in extreme deformation: Dislocation mechanisms. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 839, 142712.	5.6	5
262	The role of pre-existing heterogeneities in materials under shock and spall. Applied Physics Reviews, 2022, 9, .	11.3	19
263	Molecular dynamics simulation of the shock response of materials: A tutorial. Journal of Applied Physics, 2022, 131, .	2.5	32
264	Molecular Dynamics Simulations of Plastic Damage in Metals. , 2022, , 1335-1369.		0
265	The Shock Response and Spall Mechanism of Mg–Al–Zn Alloy: Molecular Dynamics Study. Acta Mechanica Solida Sinica, 2022, 35, 495-503.	1.9	9
266	Defect reversibility regulates dynamic tensile strength in silicon carbide at high strain rates. Scripta Materialia, 2022, 213, 114593.	5.2	6
267	High pressure suppressing grain boundary migration in a nanograined nickel. Scripta Materialia, 2022, 214, 114656.	5.2	11
268	Nanoindentation of nanoporous tungsten: A molecular dynamics approach. Computational Materials Science, 2022, 209, 111336.	3.0	8
270	Reactive molecular simulation of shockwave propagation in calcium–silicate–hydrate gels. Journal of Non-Crystalline Solids, 2022, 590, 121677.	3.1	1
271	A unified model for yield strength and plastic behavior of nanovoid evolution in tungsten based on molecular dynamics simulations. Computational Materials Science, 2022, 211, 111534.	3.0	1
272	Computational analysis of mechanical behavior and potential energy of thermoresponsive copper-tantalum nanoalloy. Journal of Molecular Modeling, 2022, 28, .	1.8	1
273	Critical assessment of the extreme mechanical behavior of a stable nanocrystalline alloy under shock loading. Acta Materialia, 2022, 236, 118105.	7.9	4
274	Probing the Mechanical Properties of Porous Nanoshells by Nanoindentation. Nanomaterials, 2022, 12, 2000.	4.1	2
275	Unravelling the Sizeâ€Dependent Mechanical Properties of Nanocrystalline Faceâ€Centeredâ€Cubic Metals: From the Dislocation Point of View. Advanced Engineering Materials, 2022, 24, .	3.5	2

#	Article	IF	CITATIONS
276	Dynamic characterization of shock wave responses of bicontinuous nanoporous amorphous alloys: Microstructure effects. Mechanics of Materials, 2022, 173, 104410.	3.2	5
277	Dynamic strength, reinforcing mechanism and damage of ceramic metal composites. International Journal of Mechanical Sciences, 2022, 231, 107580.	6.7	8
278	Shock melting of lamellae-forming block copolymers. Physical Review E, 2022, 106, .	2.1	3
279	Effect of porosity on shock propagation behaviour of single crystal aluminium: A molecular dynamics investigation. Mechanics of Materials, 2023, 177, 104535.	3.2	2
280	The low-cyclic fatigue response and its dependence of specific surface area for open-cell nanoporous Cu. Journal of Applied Physics, 2023, 133, .	2.5	1
281	Influence of Grain Size on Mechanical Properties of a Refractory High Entropy Alloy under Uniaxial Tension. Crystals, 2023, 13, 357.	2.2	2
282	Yield Surfaces and Plastic Potentials for Metals, with Analysis of Plastic Dilatation and Strength Asymmetry in BCC Crystals. Metals, 2023, 13, 523.	2.3	1
283	Mechanical Response of Amorphous Ni62Nb38 Metallic Alloy under Uniaxial Strain. Bulletin of the Russian Academy of Sciences: Physics, 2023, 87, 498-503.	0.6	0
284	Inorganically Connecting Colloidal Nanocrystals Significantly Improves Mechanical Properties. Nano Letters, 2023, 23, 4916-4922.	9.1	0
285	Structural transition of single-walled carbon nanotube (6, 6) bundles under lateral shocks. Diamond and Related Materials, 2023, 140, 110476.	3.9	0
286	Anisotropic deformation mechanisms in textured nanotwined Cu under shock loading. Journal of Materials Research and Technology, 2023, 27, 4180-4190.	5.8	0
287	Design strategies towards the optimal shock-tolerance of nanocrystalline Al matrix composite. Ceramics International, 2024, 50, 4502-4512.	4.8	0
288	Molecular Dynamics Investigation of Shock-Induced Deformation Behavior and Failure Mechanism in Metallic Materials. Archives of Computational Methods in Engineering, 2024, 31, 2317-2344.	10.2	0
289	Dynamic behavior of nanocrystalline materials and bulk metallic glasses. , 2024, , 373-410.		0
290	Microstructure evolution and the deformation mechanism in nanocrystalline superior-deformed tantalum. Nanoscale, 2024, 16, 4826-4840.	5.6	0
291	The Influence of Impac-Oscilation Loading on the Hardness of Surface Layers of D16ChATW Aluminum Alloy. Materials Science, 2023, 59, 186-190.	0.9	0
292	Porosity and specific surface area dependence of shock-induced plasticity and melting in open-cell nanoporous Cu. AIP Advances, 2024, 14, .	1.3	0