

# Yujie Wei

## List of Publications by Year in descending order

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119  
papers

9,031  
citations

61984

43  
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39675

94  
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121  
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121  
docs citations

121  
times ranked

9483  
citing authors

#	ARTICLE	IF	CITATIONS
1	Heterogeneous lamella structure unites ultrafine-grain strength with coarse-grain ductility. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 14501-14505.	7.1	1,202
2	Dislocation nucleation governed softening and maximum strength in nano-twinned metals. Nature, 2010, 464, 877-880.	27.8	956
3	Evading the strength-ductility trade-off dilemma in steel through gradient hierarchical nanotwins. Nature Communications, 2014, 5, 3580.	12.8	739
4	The nature of strength enhancement and weakening by pentagon-heptagon defects in graphene. Nature Materials, 2012, 11, 759-763.	27.5	548
5	Tunable Rigidity of (Polymeric Core)-(Lipid Shell) Nanoparticles for Regulated Cellular Uptake. Advanced Materials, 2015, 27, 1402-1407.	21.0	383
6	Bending Rigidity and Gaussian Bending Stiffness of Single-Layered Graphene. Nano Letters, 2013, 13, 26-30.	9.1	299
7	Grain-boundary sliding and separation in polycrystalline metals: application to nanocrystalline fcc metals. Journal of the Mechanics and Physics of Solids, 2004, 52, 2587-2616.	4.8	261
8	Colloquium: Phononic thermal properties of two-dimensional materials. Reviews of Modern Physics, 2018, 90, .	45.6	238
9	An instability index of shear band for plasticity in metallic glasses. Acta Materialia, 2009, 57, 1367-1372.	7.9	182
10	Griffith Criterion for Brittle Fracture in Graphene. Nano Letters, 2015, 15, 1918-1924.	9.1	180
11	Wrinkle-Free Single-Crystal Graphene Wafer Grown on Strain-Engineered Substrates. ACS Nano, 2017, 11, 12337-12345.	14.6	172
12	Microfluidic Synthesis of Hybrid Nanoparticles with Controlled Lipid Layers: Understanding Flexibility-Regulated Cell-Nanoparticle Interaction. ACS Nano, 2015, 9, 9912-9921.	14.6	163
13	Enhanced strain-rate sensitivity in fcc nanocrystals due to grain-boundary diffusion and sliding. Acta Materialia, 2008, 56, 1741-1752.	7.9	149
14	Mechanics and Mechanically Tunable Band Gap in Single-Layer Hexagonal Boron-Nitride. Materials Research Letters, 2013, 1, 200-206.	8.7	141
15	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, 16108-16113.	7.1	120
16	Cellular entry of graphene nanosheets: the role of thickness, oxidation and surface adsorption. RSC Advances, 2013, 3, 15776.	3.6	118
17	Grain misorientation and grain-boundary rotation dependent mechanical properties in polycrystalline graphene. Journal of the Mechanics and Physics of Solids, 2013, 61, 1421-1432.	4.8	109
18	Microstructure and mechanical properties of aluminum 5083 weldments by gas tungsten arc and gas metal arc welding. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 549, 7-13.	5.6	105

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19	Surfactant-Induced Postsynthetic Modulation of Pd Nanoparticle Crystallinity. <i>Nano Letters</i> , 2011, 11, 1614-1617.	9.1	98
20	A computational study of the mechanical behavior of nanocrystalline fcc metals. <i>Acta Materialia</i> , 2006, 54, 3177-3190.	7.9	97
21	Bottom-up Design of Three-Dimensional Carbon-Honeycomb with Superb Specific Strength and High Thermal Conductivity. <i>Nano Letters</i> , 2017, 17, 179-185.	9.1	95
22	Continuum modeling of the response of a Mg alloy AZ31 rolled sheet during uniaxial deformation. <i>International Journal of Plasticity</i> , 2011, 27, 1739-1757.	8.8	93
23	Nanoscale precipitates as sustainable dislocation sources for enhanced ductility and high strength. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 5204-5209.	7.1	87
24	Recoverable creep deformation and transient local stress concentration due to heterogeneous grain-boundary diffusion and sliding in polycrystalline solids. <i>Journal of the Mechanics and Physics of Solids</i> , 2008, 56, 1460-1483.	4.8	82
25	Stable high areal capacity lithium-ion battery anodes based on three-dimensional Ni@Sn nanowire networks. <i>Journal of Power Sources</i> , 2012, 211, 46-51.	7.8	79
26	Fast Growth of Strain-Free AlN on Graphene-Buffered Sapphire. <i>Journal of the American Chemical Society</i> , 2018, 140, 11935-11941.	13.7	75
27	Nanomechanics of graphene. <i>National Science Review</i> , 2019, 6, 324-348.	9.5	75
28	A molecular dynamics study of bond exchange reactions in covalent adaptable networks. <i>Soft Matter</i> , 2015, 11, 6305-6317.	2.7	71
29	Tug-of-War in Nanoparticles: Competitive Growth of Au on Au <sup>3+</sup> Fe <sub>3</sub> O <sub>4</sub> Nanoparticles. <i>Nano Letters</i> , 2009, 9, 4544-4547.	9.1	70
30	Scaling of maximum strength with grain size in nanotwinned fcc metals. <i>Physical Review B</i> , 2011, 83, .	3.2	68
31	The kinetics and energetics of dislocation mediated de-twinning in nano-twinned face-centered cubic metals. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011, 528, 1558-1566.	5.6	65
32	An elastic-viscoplastic model of deformation in nanocrystalline metals based on coupled mechanisms in grain boundaries and grain interiors. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008, 478, 16-25.	5.6	59
33	A polycrystal based numerical investigation on the temperature dependence of slip resistance and texture evolution in magnesium alloy AZ31B. <i>International Journal of Plasticity</i> , 2014, 55, 80-93.	8.8	59
34	Crack deflection in brittle media with heterogeneous interfaces and its application in shale fracking. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 101, 235-249.	4.8	57
35	An elastic-plastic interface constitutive model: application to adhesive joints. <i>International Journal of Plasticity</i> , 2004, 20, 2063-2081.	8.8	56
36	On the influence of junction structures on the mechanical and thermal properties of carbon honeycombs. <i>Carbon</i> , 2017, 119, 278-286.	10.3	56

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37	A theoretical analysis of the surface dependent binding, peeling and folding of graphene on single crystal copper. <i>Carbon</i> , 2012, 50, 3055-3063.	10.3	51
38	Stable planar single-layer hexagonal silicene under tensile strain and its anomalous Poisson's ratio. <i>Applied Physics Letters</i> , 2014, 104, 081902.	3.3	49
39	Binder-free three-dimensional silicon/carbon nanowire networks for high performance lithium-ion battery anodes. <i>Nano Energy</i> , 2013, 2, 943-950.	16.0	47
40	Failure mechanisms of 2D silicon film anodes: <i>in situ</i> observations and simulations on crack evolution. <i>Chemical Communications</i> , 2018, 54, 3997-4000.	4.1	47
41	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.	4.8	46
42	Stress evolution in elastic-plastic electrodes during electrochemical processes: A numerical method and its applications. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 116, 403-415.	4.8	46
43	Large Single-Crystal Cu Foils with High-Index Facets by Strain-Engineered Anomalous Grain Growth. <i>Advanced Materials</i> , 2020, 32, e2002034.	21.0	45
44	Notch strengthening or weakening governed by transition of shear failure to normal mode fracture. <i>Scientific Reports</i> , 2015, 5, 10537.	3.3	44
45	Molecular dynamics studying on welding behavior in thermosetting polymers due to bond exchange reactions. <i>RSC Advances</i> , 2016, 6, 22476-22487.	3.6	44
46	Failure criterion for metallic glasses. <i>Philosophical Magazine</i> , 2011, 91, 4536-4554.	1.6	43
47	Strength gradient enhances fatigue resistance of steels. <i>Scientific Reports</i> , 2016, 6, 22156.	3.3	43
48	Bending Nanowire Growth in Solution by Mechanical Disturbance. <i>Nano Letters</i> , 2010, 10, 2121-2125.	9.1	42
49	Anisotropic expansion and size-dependent fracture of silicon nanotubes during lithiation. <i>Journal of Materials Chemistry A</i> , 2019, 7, 15113-15122.	10.3	41
50	Geometric design of micron-sized crystalline silicon anodes through <i>in situ</i> observation of deformation and fracture behaviors. <i>Journal of Materials Chemistry A</i> , 2017, 5, 12793-12802.	10.3	38
51	Optimal stress and deformation partition in gradient materials for better strength and tensile ductility: A numerical investigation. <i>Scientific Reports</i> , 2017, 7, 10954.	3.3	38
52	The formation of discontinuous gradient regimes during crack initiation in high strength steels under very high cycle fatigue. <i>International Journal of Fatigue</i> , 2019, 124, 483-492.	5.7	38
53	The Gaussian distribution of lattice size and atomic level heterogeneity in high entropy alloys. <i>Extreme Mechanics Letters</i> , 2017, 11, 84-88.	4.1	36
54	Twin boundary spacing-dependent friction in nanotwinned copper. <i>Physical Review B</i> , 2012, 85, .	3.2	34

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55	Supersonic Screw Dislocations Gliding at the Shear Wave Speed. <i>Physical Review Letters</i> , 2019, 122, 045501.	7.8	33
56	The influence of combined gradient structure with residual stress on crack-growth behavior in medium carbon steel. <i>Engineering Fracture Mechanics</i> , 2019, 209, 369-381.	4.3	33
57	On the strain hardening and texture evolution in high manganese steels: Experiments and numerical investigation. <i>Journal of the Mechanics and Physics of Solids</i> , 2013, 61, 2588-2604.	4.8	32
58	Extraction of Anisotropic Mechanical Properties From Nanoindentation of SiC-6H Single Crystals. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2016, 83, .	2.2	30
59	Recoverable creep deformation due to heterogeneous grain-boundary diffusion and sliding. <i>Scripta Materialia</i> , 2007, 57, 933-936.	5.2	28
60	On micro-cracking, inelastic dilatancy, and the brittle-ductile transition in compact rocks: A micro-mechanical study. <i>International Journal of Solids and Structures</i> , 2008, 45, 2785-2798.	2.7	28
61	Towards more uniform deformation in metallic glasses: The role of Poisson's ratio. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013, 560, 510-517.	5.6	28
62	Critical Sensitivity and Trans-scale Fluctuations in Catastrophic Rupture. <i>Pure and Applied Geophysics</i> , 2002, 159, 2491-2509.	1.9	27
63	A stochastic description on the traction-separation law of an interface with non-covalent bonding. <i>Journal of the Mechanics and Physics of Solids</i> , 2014, 70, 227-241.	4.8	27
64	Dislocation Strengthening without Ductility Trade-off in Metastable Austenitic Steels. <i>Scientific Reports</i> , 2016, 6, 35345.	3.3	27
65	Defects guided wrinkling in graphene on copper substrate. <i>Carbon</i> , 2019, 143, 736-742.	10.3	27
66	A constitutive model for powder-processed nanocrystalline metals. <i>Acta Materialia</i> , 2007, 55, 921-931.	7.9	25
67	Spiral fracture in metallic glasses and its correlation with failure criterion. <i>Acta Materialia</i> , 2015, 99, 206-212.	7.9	25
68	Anisotropic size effect in strength in coherent nanowires with tilted twins. <i>Physical Review B</i> , 2011, 84, .	3.2	24
69	On the influence of interfacial properties to the bending rigidity of layered structures. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 92, 278-296.	4.8	23
70	An extended strain energy density failure criterion by differentiating volumetric and distortional deformation. <i>International Journal of Solids and Structures</i> , 2012, 49, 1117-1126.	2.7	22
71	Super-stretchable borophene. <i>Europhysics Letters</i> , 2016, 116, 36001.	2.0	22
72	Evolution-induced Catastrophe and its Predictability. , 2000, 157, 1945-1957.		20

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73	Effects of intermittent loading on fatigue life of a high strength steel in very high cycle fatigue regime. <i>International Journal of Fatigue</i> , 2018, 117, 9-12.	5.7	20
74	Numerical simulations of crack deflection at a twist-misoriented grain boundary between two ideally brittle crystals. <i>Journal of the Mechanics and Physics of Solids</i> , 2009, 57, 1865-1879.	4.8	18
75	Mechanisms of anisotropic friction in nanotwinned Cu revealed by atomistic simulations. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2013, 21, 065001.	2.0	18
76	Roughening for Strengthening and Toughening in Monolayer Carbon Based Composites. <i>Nano Letters</i> , 2021, 21, 4823-4829.	9.1	18
77	An analytical solution to the stress fields of kinked cracks. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 156, 104619.	4.8	18
78	Grain boundary and curvature enhanced lithium adsorption on carbon. <i>Carbon</i> , 2016, 107, 557-563.	10.3	17
79	The linear-dependence of adhesion strength and adhesion range on temperature in soft membranes. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 132, 103697.	4.8	17
80	Crack instability of ferroelectric solids under alternative electric loading. <i>Journal of the Mechanics and Physics of Solids</i> , 2015, 81, 75-90.	4.8	16
81	Analytical model and molecular dynamics simulations of the size dependence of flow stress in amorphous intermetallic nanowires at temperatures near the glass transition. <i>Physical Review B</i> , 2010, 81, .	3.2	15
82	Examining the validity of Stoney-equation for in-situ stress measurements in thin film electrodes using a large-deformation finite-element procedure. <i>Journal of Power Sources</i> , 2018, 387, 126-134.	7.8	13
83	Physical Interpretation of the Maximum Receptor~Ligand Bond Spacing to Ensure Cell Adhesion in Ligand-Coated Substrates. <i>Langmuir</i> , 2008, 24, 5644-5646.	3.5	12
84	The stress-velocity relationship of twinning partial dislocations and the phonon-based physical interpretation. <i>Science China: Physics, Mechanics and Astronomy</i> , 2017, 60, 1.	5.1	12
85	Cryogenic temperature toughening and strengthening due to gradient phase structure. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 712, 358-364.	5.6	12
86	Entropy Power, Autoregressive Models, and Mutual Information. <i>Entropy</i> , 2018, 20, 750.	2.2	12
87	Entropic-elasticity-controlled dissociation and energetic-elasticity-controlled rupture induce catch-to-slip bonds in cell-adhesion molecules. <i>Physical Review E</i> , 2008, 77, 031910.	2.1	11
88	Case study: The effect of running distance on the microstructure and properties of railroad axle bearings. <i>Wear</i> , 2018, 394-395, 159-165.	3.1	11
89	Response of an infinite beam on a bilinear elastic foundation: Bridging the gap between the Winkler and tensionless foundation models. <i>European Journal of Mechanics, A/Solids</i> , 2018, 71, 394-403.	3.7	11
90	The scaling of charging rate and cycle number of commercial batteries. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2022, 38, .	3.4	11

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91	Tunable band structures of polycrystalline graphene by external and mismatch strains. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2012, 28, 1539-1544.	3.4	10
92	The influence of crack-orientation distribution on the mechanical properties of pre-cracked brittle media. <i>International Journal of Solids and Structures</i> , 2016, 96, 64-73.	2.7	9
93	Scaling of internal dissipation of polycrystalline solids on grain-size and frequency. <i>Acta Materialia</i> , 2020, 201, 350-363.	7.9	9
94	Weibull modulus for diverse strength due to sample-specificity. <i>Theoretical and Applied Fracture Mechanics</i> , 2000, 34, 211-216.	4.7	8
95	Strength softening at shear bands in metallic glasses. <i>Philosophical Magazine Letters</i> , 2013, 93, 221-230.	1.2	7
96	Gradient driven anomalous reversible plasticity in conventional magnesium alloys. <i>Extreme Mechanics Letters</i> , 2016, 9, 158-164.	4.1	7
97	Slipâ€Lineâ€Guided Growth of Graphene. <i>Advanced Materials</i> , 2022, 34, e2201188.	21.0	7
98	Unconventional Deformation Behaviours of Nanoscaled High-Entropy Alloys. <i>Entropy</i> , 2018, 20, 778.	2.2	6
99	Electronic band structure of carbon honeycombs. <i>Materials Today Physics</i> , 2018, 5, 72-77.	6.0	5
100	The intrinsic and extrinsic factors for brittle-to-ductile transition in bulk metallic glasses. <i>Theoretical and Applied Fracture Mechanics</i> , 2014, 71, 76-78.	4.7	4
101	Metal ductility evaluation by flattening test: The geometry dependence. <i>International Journal of Pressure Vessels and Piping</i> , 2019, 170, 40-48.	2.6	4
102	Fatigue endurance limit and crack front evolution in metallic glass. <i>International Journal of Fatigue</i> , 2021, 143, 106004.	5.7	4
103	A multi-scale algorithm for dislocation creep at elevated temperatures. <i>Theoretical and Applied Mechanics Letters</i> , 2021, 11, 100230.	2.8	4
104	The Influence of Metastable Cellular Structure on Deformation Behavior in Laser Additively Manufactured 316L Stainless Steel. <i>Nanomaterials</i> , 2021, 11, 2859.	4.1	4
105	Transient Stress Concentration in Diffusional Creep of a Thin Foil with Heterogeneous Grain Boundary Diffusivity. <i>Mathematics and Mechanics of Solids</i> , 2009, 14, 179-191.	2.4	3
106	Reformation Capability of Short-Range Order and Their Medium-Range Connections Regulates Deformability of Bulk Metallic Glasses. <i>Scientific Reports</i> , 2015, 5, 12177.	3.3	3
107	The effective fracture strength and fracture toughness of solids with energy dissipation confined to localized strips. <i>International Journal of Plasticity</i> , 2019, 120, 47-63.	8.8	3
108	Statistical analysis on rolling contact fatigue in railroad axle bearing steel. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2019, 42, 651-663.	3.4	3

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109	Research on the mechanics of high speed rails. Acta Mechanica Sinica/Lixue Xuebao, 2016, 32, 189-190.	3.4	2
110	Tension-compression asymmetry of the stress-strain behavior of the stacked graphene assembly: Experimental measurement and theoretical interpretation. Journal of the Mechanics and Physics of Solids, 2021, 157, 104642.	4.8	2
111	Theory on Bending in Cantilever Beams With Adsorbed Islands. Journal of Applied Mechanics, Transactions ASME, 2017, 84, .	2.2	1
112	A dislocation-based solution for stress introduced by arbitrary volume expansion in cylinders. Mathematics and Mechanics of Solids, 2019, 24, 598-615.	2.4	1
113	Mesoscopic Modeling of the Deformation and Fracture of Nanocrystalline Metals. , 2007, , 3-10.		1
114	Grain boundary diffusion and viscous flow governed mechanical relaxation in polycrystalline materials. Science China Materials, 2022, 65, 1403.	6.3	1
115	Entropic and energetic elasticity in controlling catch-to-slip bonds in cell-adhesion molecules. Materials Research Society Symposia Proceedings, 2008, 1132, 1.	0.1	0
116	A Dugdale model based geometrical amplifier enables the measurement of separation-to-failure for a cohesive interface. Theoretical and Applied Mechanics Letters, 2011, 1, 011006.	2.8	0
117	Response to discussion on "An extended strain energy density failure criterion by differentiating volumetric and distortional deformation". International Journal of Solids and Structures, 2013, 50, 1506.	2.7	0
118	Preface: Current research progress on mechanics of high speed rail. Acta Mechanica Sinica/Lixue Xuebao, 2014, 30, 846-848.	3.4	0
119	Mechanical Behavior Associated with Heterogeneous Grain-boundary Diffusion and Sliding in Nanocrystalline Materials. , 2008, , .		0