

# Xu Zhang

## List of Publications by Year in descending order

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82  
papers

1,845  
citations

257357

24  
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302012

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83  
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83  
docs citations

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times ranked

957  
citing authors

#	ARTICLE	IF	CITATIONS
1	Atomic Fe <sub>4</sub> /C in Flexible Carbon Fiber Membrane as Binder-Free Air Cathode for Zn-Air Batteries with Stable Cycling over 1000 h. <i>Advanced Materials</i> , 2022, 34, e2105410.	11.1	158
2	Dislocation mechanism based size-dependent crystal plasticity modeling and simulation of gradient nano-grained copper. <i>International Journal of Plasticity</i> , 2019, 113, 52-73.	4.1	125
3	2D Materials Bridging Experiments and Computations for Electro/Photocatalysis. <i>Advanced Energy Materials</i> , 2022, 12, 2003841.	10.2	116
4	Multiple mechanism based constitutive modeling of gradient nanograined material. <i>International Journal of Plasticity</i> , 2020, 125, 314-330.	4.1	95
5	Crystal plasticity finite element analysis of gradient nanostructured TWIP steel. <i>International Journal of Plasticity</i> , 2020, 130, 102703.	4.1	63
6	In Situ Anchoring Massive Isolated Pt Atoms at Cationic Vacancies of Ni <sub>2</sub> Fe(OH) <sub>2</sub> to Regulate the Electronic Structure for Overall Water Splitting. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	63
7	Dislocation-grain boundary interaction-based discrete dislocation dynamics modeling and its application to bicrystals with different misorientations. <i>Acta Materialia</i> , 2021, 202, 88-98.	3.8	60
8	Grain boundary effect on nanoindentation: A multiscale discrete dislocation dynamics model. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 126, 117-135.	2.3	57
9	A composite of CoNiP quantum dot-decorated reduced graphene oxide as a sulfur host for Li-S batteries. <i>Journal of Materials Chemistry A</i> , 2021, 9, 16692-16698.	5.2	54
10	Cyclic plasticity of an interstitial high-entropy alloy: experiments, crystal plasticity modeling, and simulations. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 142, 103971.	2.3	50
11	Effects of twin boundary orientation on plasticity of bicrystalline copper micropillars: A discrete dislocation dynamics simulation study. <i>Acta Materialia</i> , 2019, 176, 289-296.	3.8	45
12	Deformation mechanisms based constitutive modelling and strength-ductility mapping of gradient nano-grained materials. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 742, 400-408.	2.6	45
13	Size-dependent plasticity of hetero-structured laminates: A constitutive model considering deformation heterogeneities. <i>International Journal of Plasticity</i> , 2021, 145, 103063.	4.1	45
14	Understanding the role of axial O in CO <sub>2</sub> electroreduction on Ni <sub>4</sub> single-atom catalysts via simulations in realistic electrochemical environment. <i>Journal of Materials Chemistry A</i> , 2021, 9, 23515-23521.	5.2	45
15	Effects of alloying on deformation twinning in high entropy alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 763, 138143.	2.6	37
16	Effects of high entropy and twin boundary on the nanoindentation of CoCrNiFeMn high-entropy alloy: A molecular dynamics study. <i>Computational Materials Science</i> , 2021, 195, 110495.	1.4	34
17	Interpreting strain bursts and size effects in micropillars using gradient plasticity. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011, 528, 5036-5043.	2.6	33
18	Interaction between a $\frac{1}{2}\langle 110 \rangle$ twin boundary and grain boundaries in magnesium. <i>International Journal of Plasticity</i> , 2020, 126, 102613.	4.1	32

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19	Size-dependent vibration and stability of moderately thick functionally graded micro-plates using a differential quadrature-based geometric mapping scheme. <i>Engineering Analysis With Boundary Elements</i> , 2019, 108, 339-365.	2.0	29
20	Effect of Re on mechanical properties of single crystal Ni-based superalloys: Insights from first-principle and molecular dynamics. <i>Journal of Alloys and Compounds</i> , 2021, 862, 158643.	2.8	28
21	Effects of injection velocity on microstructure, porosity and mechanical properties of a rheo-diecast Al-Zn-Mg-Cu aluminum alloy. <i>Journal of Materials Processing Technology</i> , 2017, 249, 167-171.	3.1	27
22	Internal length scale and grain boundary yield strength in gradient models of polycrystal plasticity: How do they relate to the dislocation microstructure?. <i>Journal of Materials Research</i> , 2014, 29, 2116-2128.	1.2	26
23	Laser shock peened Ti-6Al-4 V alloy: Experiments and modeling. <i>International Journal of Mechanical Sciences</i> , 2022, 213, 106874.	3.6	26
24	Interpreting the softening of nanomaterials through gradient plasticity. <i>Journal of Materials Research</i> , 2011, 26, 1399-1405.	1.2	25
25	Temperature effect on tensile behavior of an interstitial high entropy alloy: Crystal plasticity modeling. <i>International Journal of Plasticity</i> , 2022, 150, 103201.	4.1	25
26	Coupling effects of surface energy, strain gradient, and inertia gradient on the vibration behavior of small-scale beams. <i>International Journal of Mechanical Sciences</i> , 2020, 184, 105834.	3.6	24
27	The tension-compression behavior of gradient structured materials: A deformation-mechanism-based strain gradient plasticity model. <i>Mechanics of Materials</i> , 2021, 159, 103912.	1.7	22
28	Size-dependent static and dynamic analysis of Reddy-type micro-beams by strain gradient differential quadrature finite element method. <i>Thin-Walled Structures</i> , 2020, 148, 106496.	2.7	21
29	Size-dependent yield stress in ultrafine-grained polycrystals: A multiscale discrete dislocation dynamics study. <i>International Journal of Plasticity</i> , 2022, 149, 103183.	4.1	21
30	Multiscale discrete dislocation dynamics study of gradient nano-grained materials. <i>International Journal of Plasticity</i> , 2022, 156, 103356.	4.1	21
31	Nonlocal Thermoelasticity Theory for Thermal-Shock Nanobeams with Temperature-Dependent Thermal Conductivity. <i>Journal of Thermal Stresses</i> , 2015, 38, 1049-1067.	1.1	19
32	Effect of dislocation pile-up on size-dependent yield strength in finite single-crystal micro-samples. <i>Journal of Applied Physics</i> , 2015, 118, 014305.	1.1	18
33	A continuum model for intermittent deformation of single crystal micropillars. <i>International Journal of Solids and Structures</i> , 2014, 51, 1859-1871.	1.3	17
34	Strain gradient differential quadrature Kirchhoff plate finite element with the C2 partial compatibility. <i>European Journal of Mechanics, A/Solids</i> , 2020, 80, 103879.	2.1	17
35	Multiple-mechanism and microstructure-based crystal plasticity modeling for cyclic shear deformation of TRIP steel. <i>International Journal of Mechanical Sciences</i> , 2022, 222, 107269.	3.6	17
36	Interpreting the stress-strain response of Al micropillars through gradient plasticity. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2014, 591, 38-45.	2.6	15

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37	A Simple Physically Based Phenomenological Model for the Strengthening/Softening Behavior of Nanotwinned Copper. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2015, 82, .	1.1	13
38	Second-order work and strain burst in single-crystalline micropillar plasticity. <i>International Journal of Plasticity</i> , 2016, 77, 192-213.	4.1	12
39	Microplasticity and yielding in crystals with heterogeneous dislocation distribution. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2019, 27, 074003.	0.8	11
40	The combined and interactive effects of orientation, strain amplitude, cycle number, stacking fault energy and hydrogen doping on microstructure evolution of polycrystalline high-manganese steels under low-cycle fatigue. <i>International Journal of Plasticity</i> , 2020, 134, 102803.	4.1	11
41	Thermo-mechanically coupled sliding contact shakedown analysis of functionally graded coating-substrate structures. <i>International Journal of Mechanical Sciences</i> , 2022, 222, 107241.	3.6	11
42	The effect of microstructure evolution on the ratchetting-fatigue interaction of carbide-free bainite rail steels under different heat-treatment conditions. <i>International Journal of Fatigue</i> , 2022, 160, 106872.	2.8	11
43	Effects of Pouring Temperature and Electromagnetic Stirring on Porosity and Mechanical Properties of A357 Aluminum Alloy Rheo-Diecasting. <i>Journal of Materials Engineering and Performance</i> , 2018, 27, 2373-2380.	1.2	10
44	Elastic shakedown analysis of two-dimensional thermo-elastic rolling/sliding contact for a functionally graded coating/substrate structure with arbitrarily varying thermo-elastic properties. <i>Composite Structures</i> , 2022, 280, 114891.	3.1	10
45	Examining the evolution of the internal length as a function of plastic strain. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 631, 27-32.	2.6	9
46	Strain gradient differential quadrature finite element for moderately thick microplates. <i>International Journal for Numerical Methods in Engineering</i> , 2020, 121, 5600-5646.	1.5	9
47	Surface energy-enriched gradient elastic Kirchhoff plate model and a novel weak-form solution scheme. <i>European Journal of Mechanics, A/Solids</i> , 2021, 85, 104118.	2.1	9
48	Effects of thermal aging on mechanical properties and microstructures of an interstitial high entropy alloy with ultrasonic surface mechanical attrition treatment. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022, 838, 142755.	2.6	9
49	Interactions between screw dislocation and twin boundary in high-entropy alloy: A molecular dynamic study. <i>Computational Materials Science</i> , 2022, 213, 111626.	1.4	9
50	Critical thickness phenomenon in single-crystalline wires under torsion. <i>Acta Materialia</i> , 2018, 150, 213-223.	3.8	8
51	Revealing the inhibition mechanism of grain size gradient on crack growth in gradient nano-grained materials. <i>International Journal of Solids and Structures</i> , 2019, 172-173, 1-9.	1.3	8
52	Forced vibration analysis of blade after selective laser shock processing based on Timoshenko's beam theory. <i>Composite Structures</i> , 2020, 243, 112249.	3.1	8
53	Toxicological Assessment of Ammonia Exposure on <i>Carassius auratus</i> red var. Living in Landscape Waters. <i>Bulletin of Environmental Contamination and Toxicology</i> , 2019, 103, 814-821.	1.3	7
54	Effect of secondary crystal orientations on the deformation anisotropy for nickel-based single-crystal plate with notch feature. <i>Journal of Strain Analysis for Engineering Design</i> , 2019, 54, 54-64.	1.0	7

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55	Variational formulation and differential quadrature finite element for freely vibrating strain gradient Kirchhoff plates. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2021, 101, e20200046.	0.9	7
56	Microscopic and macroscopic analyses of the interaction mechanism between defect growth and dislocation emission in single crystal aluminum. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2021, 44, 3008-3022.	1.7	7
57	Cyclic Plasticity of CoCrFeMnNi High-Entropy Alloy (HEA): A Molecular Dynamics Simulation. <i>International Journal of Applied Mechanics</i> , 2021, 13, 2150006.	1.3	7
58	Accelerated Mining of 2D Van der Waals Heterojunctions by Integrating Supervised and Unsupervised Learning. <i>Chemistry of Materials</i> , 2022, 34, 5571-5583.	3.2	7
59	Temperature-dependent cyclic plastic deformation of U75VG rail steel: Experiments and simulations. <i>Engineering Failure Analysis</i> , 2022, 140, 106527.	1.8	7
60	Fundamental solutions in a half space of two-dimensional hexagonal quasicrystal and their applications. <i>Journal of Applied Physics</i> , 2015, 117, .	1.1	6
61	Correlating the internal length in strain gradient plasticity theory with the microstructure of material. <i>Philosophical Magazine Letters</i> , 2015, 95, 340-349.	0.5	6
62	The competitive nucleation of misfit dislocation dipole and misfit extended dislocation dipole in nanocomposites. <i>Acta Mechanica</i> , 2017, 228, 2541-2554.	1.1	6
63	A modified single-arm source model for the size-dependent strain-hardening behavior of metallic micropillars. <i>International Journal of Mechanical Sciences</i> , 2017, 133, 438-448.	3.6	6
64	Semisolid slurry of 7A04 aluminum alloy prepared by electromagnetic stirring and Sc, Zr additions. <i>China Foundry</i> , 2017, 14, 188-193.	0.5	6
65	An effective method for calculating elasto-plastic contact pressure and contact patch size under elliptical, circular and line contact conditions. <i>Applied Mathematical Modelling</i> , 2021, 95, 541-574.	2.2	6
66	On the combined gradient-stochastic plasticity model: Application to Mo-micropillar compression. <i>AIP Conference Proceedings</i> , 2015, , .	0.3	5
67	Effect of Dislocation Mechanism on Elastoplastic Behavior of Crystals with Heterogeneous Dislocation Distribution. <i>Acta Mechanica Solida Sinica</i> , 2020, 33, 487-495.	1.0	5
68	Interactions between twin boundary and point defects in magnesium at low temperature. <i>Journal of Materials Research</i> , 2021, 36, 2639-2650.	1.2	5
69	Weak-form differential quadrature finite elements for functionally graded micro-beams with strain gradient effects. <i>Acta Mechanica</i> , 2021, 232, 4009-4036.	1.1	5
70	Strain amplitude-dependent cyclic softening behavior of carbide-free bainitic rail steel: Experiments and modeling. <i>International Journal of Fatigue</i> , 2022, 161, 106922.	2.8	5
71	Research on Fatigue Model of Semi-Rigid Base Asphalt Pavement before and after Polymer Grouting. <i>Advances in Civil Engineering</i> , 2021, 2021, 1-16.	0.4	3
72	A BP Neural Network Method for Grade Classification of Loose Damage in Semirigid Pavement Bases. <i>Advances in Civil Engineering</i> , 2021, 2021, 1-11.	0.4	3

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73	A cyclic visco-plastic constitutive model for the ratcheting behavior of U75VG rail steel under a wide range of loading rates. <i>Engineering Failure Analysis</i> , 2022, 138, 106342.	1.8	3
74	Generalized Aifantis strain gradient plasticity model with internal length scale dependence on grain size, sample size and strain. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2022, 38, .	1.5	3
75	On Gradient Nanomechanics: Plastic Flow in Nanopolycrystals. <i>Materials Science Forum</i> , 2010, 667-669, 991-996.	0.3	2
76	The strain hardening of micro-sized face-centered-cubic single crystal metals: A crystal plasticity study. <i>AIP Advances</i> , 2018, 8, 125208.	0.6	2
77	Dynamic Inversion Analysis of Structural Layer Modulus of Semirigid Base Pavement considering the Influence of Temperature and Humidity. <i>Advances in Civil Engineering</i> , 2020, 2020, 1-12.	0.4	2
78	Size-Dependent Elastic Buckling of Two-Variable Refined Microplates Embedded in Elastic Medium. <i>International Journal of Applied Mechanics</i> , 2022, 14, .	1.3	2
79	Non-Monotonous Mechanical Behavior at the Nanoscale: Elastic and Plastic Properties. <i>Strength of Materials</i> , 2015, 47, 642-651.	0.2	1
80	Effect of a Vertical Twin Boundary on the Mechanical Property of Bicrystalline Copper Micropillars. <i>Minerals, Metals and Materials Series</i> , 2019, , 1305-1310.	0.3	0
81	Temperature Correction for FWD Deflection in Cement Pavement Void Detection. <i>Advances in Civil Engineering</i> , 2021, 2021, 1-14.	0.4	0
82	Synthesis of metal silicides using polyhedral oligomeric silsesquioxane as a silicon source for semi-hydrogenation of phenylacetylene. <i>Inorganic Chemistry Frontiers</i> , 2022, 9, 1386-1394.	3.0	0