

Hongwei Zhao

List of Publications by Year in descending order

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108
papers

1,838
citations

257450

24
h-index

315739

38
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109
all docs

109
docs citations

109
times ranked

1144
citing authors

#	ARTICLE	IF	CITATIONS
1	A Novel Trapezoid-Type Stick-Slip Piezoelectric Linear Actuator Using Right Circular Flexure Hinge Mechanism. IEEE Transactions on Industrial Electronics, 2017, 64, 5545-5552.	7.9	154
2	Development of a Novel Parasitic-Type Piezoelectric Actuator. IEEE/ASME Transactions on Mechatronics, 2017, 22, 541-550.	5.8	133
3	Nanoindentation of Soft Biological Materials. Micromachines, 2018, 9, 654.	2.9	95
4	Molecular dynamics investigations of mechanical behaviours in monocrystalline silicon due to nanoindentation at cryogenic temperatures and room temperature. Scientific Reports, 2015, 5, 16275.	3.3	69
5	On the Suppression of the Backward Motion of a Piezo-Driven Precision Positioning Platform Designed by the Parasitic Motion Principle. IEEE Transactions on Industrial Electronics, 2020, 67, 3870-3878.	7.9	66
6	Research on the effects of machining-induced subsurface damages on mono-crystalline silicon via molecular dynamics simulation. Applied Surface Science, 2012, 259, 66-71.	6.1	59
7	Cylindrical Direct-Current Triboelectric Nanogenerator with Constant Output Current. Advanced Energy Materials, 2020, 10, 1904227.	19.5	52
8	A study on the surface quality and brittle-ductile transition during the elliptical vibration-assisted nanocutting process on monocrystalline silicon via molecular dynamic simulations. RSC Advances, 2017, 7, 4179-4189.	3.6	48
9	Design and Experimental Research of a Novel Stick-Slip Type Piezoelectric Actuator. Micromachines, 2017, 8, 150.	2.9	48
10	Design and experimental tests of a dual-servo piezoelectric nanopositioning stage for rotary motion. Review of Scientific Instruments, 2015, 86, 045002.	1.3	43
11	Breakthrough the strength-ductility trade-off in a high-entropy alloy at room temperature via cold rolling and annealing. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 800, 140264.	5.6	39
12	Evaluation of repeated single-point diamond turning on the deformation behavior of monocrystalline silicon via molecular dynamic simulations. Applied Physics A: Materials Science and Processing, 2014, 116, 141-150.	2.3	36
13	Performance improvement of smooth impact drive mechanism at low voltage utilizing ultrasonic friction reduction. Review of Scientific Instruments, 2016, 87, 085007.	1.3	36
14	A Symmetrical Hybrid Driving Waveform for a Linear Piezoelectric Stick-Slip Actuator. IEEE Access, 2017, 5, 16885-16894.	4.2	36
15	Coral-like ZnFe ₂ O ₄ -ZnO mesoporous heterojunction architectures: synthesis and enhanced sensing properties for triethylamine. Inorganic Chemistry Frontiers, 2020, 7, 1918-1926.	6.0	35
16	Influence of strain rate on indentation response of porcine brain. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 82, 210-217.	3.1	31
17	Note: Lever-type bidirectional stick-slip piezoelectric actuator with flexible hinge. Review of Scientific Instruments, 2018, 89, 086101.	1.3	31
18	A Compact 2-DOF Piezoelectric-Driven Platform Based on Z-Shaped Flexure Hinges. Micromachines, 2017, 8, 245.	2.9	30

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19	Investigation on the Material Removal and Surface Generation of a Single Crystal SiC Wafer by Ultrasonic Chemical Mechanical Polishing Combined with Ultrasonic Lapping. <i>Materials</i> , 2018, 11, 2022.	2.9	30
20	Design and experimental research of a novel inchworm type piezo-driven rotary actuator with the changeable clamping radius. <i>Review of Scientific Instruments</i> , 2013, 84, 015006.	1.3	29
21	Study on the deformation mechanism of spherical diamond indenter and its influence on 3C-SiC sample during nanoindentation process via molecular dynamics simulation. <i>Materials Science in Semiconductor Processing</i> , 2019, 90, 143-150.	4.0	29
22	Design and experiment performances of an inchworm type rotary actuator. <i>Review of Scientific Instruments</i> , 2014, 85, 085004.	1.3	28
23	Enhanced strength and slightly reduced ductility in a high entropy alloy via cold rolling and annealing. <i>Journal of Alloys and Compounds</i> , 2020, 817, 152709.	5.5	27
24	Design and experimental research of an improved stick-slip type piezo-driven linear actuator. <i>Advances in Mechanical Engineering</i> , 2015, 7, 168781401559501.	1.6	25
25	Molecular dynamics simulation of deformation accumulation in repeated nanometric cutting on single-crystal copper. <i>RSC Advances</i> , 2015, 5, 12678-12685.	3.6	25
26	Investigations of Phase Transformation in Monocrystalline Silicon at Low Temperatures via Nanoindentation. <i>Scientific Reports</i> , 2017, 7, 8682.	3.3	25
27	Effects of vibration frequency on vibration-assisted nano-scratch process of mono-crystalline copper via molecular dynamics simulation. <i>AIP Advances</i> , 2016, 6, .	1.3	24
28	Molecular dynamics simulation of self-rotation effects on ultra-precision polishing of single-crystal copper. <i>AIP Advances</i> , 2013, 3, .	1.3	23
29	Randomness and Statistical Laws of Indentation-Induced Pop-Out in Single Crystal Silicon. <i>Materials</i> , 2013, 6, 1496-1505.	2.9	22
30	Microstructure evolution and mechanical responses of Al-Zn-Mg-Cu alloys during hot deformation process. <i>Journal of Materials Science</i> , 2021, 56, 13429-13478.	3.7	22
31	Influences of Sample Preparation on Nanoindentation Behavior of a Zr-Based Bulk Metallic Glass. <i>Materials</i> , 2012, 5, 1033-1039.	2.9	21
32	Analysis and experiments of a novel and compact 3-DOF precision positioning platform. <i>Journal of Mechanical Science and Technology</i> , 2013, 27, 3347-3356.	1.5	19
33	Effects of Indenter Tilt on Nanoindentation Results of Fused Silica: an Investigation by Finite Element Analysis. <i>Materials Transactions</i> , 2013, 54, 958-963.	1.2	17
34	A novel <i>in situ</i> device based on a bionic piezoelectric actuator to study tensile and fatigue properties of bulk materials. <i>Review of Scientific Instruments</i> , 2014, 85, 065103.	1.3	16
35	On the correlation between the structure and one stepping characteristic of a piezo-driven rotary actuator. <i>Microsystem Technologies</i> , 2016, 22, 2821-2827.	2.0	16
36	A Study on Material Removal Caused by Phase Transformation of Monocrystalline Silicon During Nanocutting Process via Molecular Dynamics Simulation. <i>Journal of Computational and Theoretical Nanoscience</i> , 2014, 11, 291-296.	0.4	14

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37	Research on influences of contact force in chemical mechanical polishing (CMP) process. AIP Advances, 2015, 5, .	1.3	14
38	Design and driving characteristic researches of a novel bionic stepping piezoelectric actuator with large load capacity based on clamping blocks. Microsystem Technologies, 2015, 21, 1757-1765.	2.0	13
39	Design, modeling, and performance of a bidirectional stick-slip piezoelectric actuator with coupled asymmetrical flexure hinge mechanisms. Journal of Intelligent Material Systems and Structures, 2020, 31, 1961-1972.	2.5	13
40	The Preparation of H13 Steel for TBM Cutter and the Performance Test Close to Working Condition. Applied Sciences (Switzerland), 2018, 8, 1877.	2.5	12
41	Effects of T6 Treatment, Tensile Temperature, and Mass Fraction of SiC on the Mechanical Properties of SiCp/6061Al Composites. Materials, 2019, 12, 1602.	2.9	12
42	Design and testing of a cryogenic indentation apparatus. Review of Scientific Instruments, 2019, 90, 015117.	1.3	12
43	Atomic perspective of contact protection in graphene-coated high-entropy films. Tribology International, 2022, 174, 107748.	5.9	12
44	Molecular Dynamics Simulation of the Crystal Orientation and Temperature Influences in the Hardness on Monocrystalline Silicon. Journal of Nanomaterials, 2014, 2014, 1-8.	2.7	11
45	Static and cyclic mechanical behaviours and fracture mechanisms of Zr-based metallic glass at elevated temperatures. Philosophical Magazine, 2019, 99, 835-852.	1.6	11
46	Fast and High-Throughput Synthesis of Medium- and High-Entropy Alloys Using Radio Frequency Inductively Coupled Plasma. Advanced Engineering Materials, 2021, 23, 2001116.	3.5	11
47	Novel instrument for characterizing comprehensive physical properties under multi-mechanical loads and multi-physical field coupling conditions. Review of Scientific Instruments, 2018, 89, 025112.	1.3	10
48	Effects of Temperature and Strain Rate on the Fracture Behaviors of an Al-Zn-Mg-Cu Alloy. Materials, 2018, 11, 1233.	2.9	10
49	Indentation response in porcine brain under electric fields. Soft Matter, 2019, 15, 623-632.	2.7	10
50	Enhanced Dielectric and Energy Storage Properties in Fe-Doped BCZT Ferroelectric Ceramics. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 2000253.	1.8	10
51	Indenter Geometry Affecting Indentation Behaviors of the Zr-Based Bulk Metallic Glass. Materials Transactions, 2014, 55, 1400-1404.	1.2	9
52	Mechanical Behavior of Undoped n-Type GaAs under the Indentation of Berkovich and Flat-Tip Indenters. Materials, 2019, 12, 1192.	2.9	9
53	A linear piezoelectric actuator with high flexibility flexible mechanism designed by the bidirectional parasitic motion principle. Review of Scientific Instruments, 2020, 91, 045005.	1.3	9
54	Mechanical properties of brain tissue based on microstructure. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 126, 104924.	3.1	9

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55	Failure Mechanism of Brass with Three V-shaped Notches Characterized by Acoustic Emission in In Situ Three-point Bending Tests. <i>Advanced Engineering Materials</i> , 2016, 18, 2047-2056.	3.5	8
56	Nanoindentation response of monocrystalline copper under various tensile pre-deformations via molecular dynamic simulations. <i>Advances in Mechanical Engineering</i> , 2018, 10, 168781401881687.	1.6	8
57	Enhanced surface properties of a graphene oxide reinforced high-entropy alloy composite prepared by spark plasma sintering. <i>Nanoscale</i> , 2022, 14, 6777-6788.	5.6	8
58	Deformation behavior of micro-indentation defects under uniaxial and biaxial loads. <i>Review of Scientific Instruments</i> , 2015, 86, 095112.	1.3	7
59	Influence of punch radius on elastic modulus of three-point bending tests. <i>Advances in Mechanical Engineering</i> , 2016, 8, 168781401664911.	1.6	7
60	An elevated-temperature depth-sensing instrumented indentation apparatus for investigating thermo-mechanical behaviour of thermal barrier coatings. <i>Review of Scientific Instruments</i> , 2017, 88, 045102.	1.3	7
61	Design and performance evaluation of a novel stick-slip piezoelectric linear actuator with a centrosymmetric-type flexure hinge mechanism. <i>Microsystem Technologies</i> , 2019, 25, 3891-3898.	2.0	7
62	Achieving smooth motion and high-speed for piezoelectric stick-slip actuator based on the two-stage lever principle. <i>Review of Scientific Instruments</i> , 2021, 92, 125001.	1.3	7
63	Piezoelectric-Thermal Coupling Driven Biomimetic Stick-Slip Bidirectional Rotary Actuator for Nanomanipulation. <i>Nano Letters</i> , 2022, 22, 453-460.	9.1	7
64	Influences of Residual Stress Induced by Cutting on Subsequent Scratch Using Smooth Particle Hydrodynamic (SPH). <i>Materials Transactions</i> , 2014, 55, 1440-1444.	1.2	6
65	Geometry Effects in Four-Point Bending Test for Thin Sheet Studied by Finite Element Simulation. <i>Materials Transactions</i> , 2016, 57, 335-343.	1.2	6
66	Hydrostatic pressure driven spin, volume and band gap collapses in SmFeO_3 : a GGA + U study. <i>Philosophical Magazine</i> , 2016, 96, 1613-1622.	1.6	6
67	A Calibration Method of Micropillar Compression Testing for Taper and Eccentricity Induced Errors. <i>IEEE Transactions on Instrumentation and Measurement</i> , 2021, 70, 1-6.	4.7	6
68	Aggravated stress fluctuation and mechanical size effects of nanoscale lamellar bone pillars. <i>NPG Asia Materials</i> , 2021, 13, .	7.9	6
69	The effects of electric fields on the mechanical properties and microstructure of <i>ex vivo</i> porcine brain tissues. <i>Soft Matter</i> , 2022, 18, 1498-1509.	2.7	6
70	A compact bending device for in-situ three-point bending tests under laser scanning confocal microscope. <i>Instruments and Experimental Techniques</i> , 2016, 59, 762-767.	0.5	5
71	A DAMAGE MECHANISM OF MICRO-PARTICLES ON ARTICULAR CARTILAGE OF KNEE BY NANOINDENTATION. <i>Journal of Mechanics in Medicine and Biology</i> , 2017, 17, 1750116.	0.7	5
72	A Self-Adaptive Selection of Subset Size Method in Digital Image Correlation Based on Shannon Entropy. <i>IEEE Access</i> , 2020, 8, 184822-184833.	4.2	5

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73	Prediction of cross section fracture path of cortical bone through nanoindentation array. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 116, 104303.	3.1	5
74	A Novel Bionic Piezoelectric Actuator Based on the Walrus Motion. Journal of Bionic Engineering, 2021, 18, 1117-1125.	5.0	5
75	Prediction Method of Low Cyclic Stress-Strain Curve of Structural Materials. Materials Transactions, 2015, 56, 1067-1071.	1.2	4
76	Fracture criterion on the basis of uniformity of plastic work of polycrystalline ductile materials under various stress states. Acta Mechanica, 2016, 227, 2053-2059.	2.1	4
77	In situ nanoindentation method for characterizing tensile properties of AISI 1045 steel based on mesomechanical analysis. Advances in Mechanical Engineering, 2019, 11, 168781401986291.	1.6	4
78	Elucidation of Regional Mechanical Properties of Brain Tissues Based on Cell Density. Journal of Bionic Engineering, 2021, 18, 611-622.	5.0	4
79	Enhanced energy storage and photoluminescence properties in ErBiO ₃ -doped (Na _{0.5} Bi _{0.5})TiO ₃ -SrTiO ₃ ceramics. Journal of Materials Science, 2022, 57, 229-240.	3.7	4
80	Research on Design and Simulation of Biaxial Tensile-Bending Complex Mechanical Performance Test Apparatus. Micromachines, 2017, 8, 286.	2.9	3
81	Influences of organic component on mechanical property of cortical bone with different water content by nanoindentation. AIP Advances, 2018, 8, .	1.3	3
82	Enhanced energy storage properties at phase boundary in Fe-doped Ba(Zr _{0.04} Ti _{0.96})O ₃ ceramics with a slush polar state. Journal of Materials Science: Materials in Electronics, 2021, 32, 13972-13984.	2.2	3
83	In Situ Bending Reveals Simultaneous Enhancements of Strength and Ductility of Cortical and Cancellous Layers Induced by the Cartilage Layer. ACS Omega, 2021, 6, 31177-31183.	3.5	3
84	Novel precision piezoelectric step rotary actuator. Frontiers of Mechanical Engineering in China, 2007, 2, 356-360.	0.4	2
85	Performance analysis of piezoelectric bimorph generator. Frontiers of Mechanical Engineering in China, 2008, 3, 151-157.	0.4	2
86	Research on the effect of the corrugated contact surface on an inchworm-type piezoelectric rotary actuator by finite element method. , 2015, , .		2
87	Method for determining the true stress of cross-shaped specimens subjected to biaxial tensile loads. Instruments and Experimental Techniques, 2016, 59, 287-293.	0.5	2
88	Influence of scratch type on tensile strength in in situ tensile test. Advances in Mechanical Engineering, 2017, 9, 168781401770713.	1.6	2
89	The indentation and wear performance of hardfacing layers on H13 steel for use in high temperature application. AIP Advances, 2019, 9, 095304.	1.3	2
90	Measurement Method of Fracture Surface Orientations of Cortical Bones Under Multidirectional External Loads. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-9.	4.7	2

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91	Fast triethylamine gas sensing performance based on In ₂ O ₃ nanocuboids. Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications, 0, , 146442072110227.	1.1	2
92	Enhanced Relaxor Behavior and Energy Storage Properties in Na _{0.5} Bi _{0.5} TiO ₃ -Based Ceramics by Doping the Complex Ions (Al _{0.5} Nb _{0.5}) ⁴⁺ . Physica Status Solidi (A) Applications and Materials Science, 2022, 219, .	1.8	2
93	Critical Fracture Behavior of a Cu/Al Composite Laminate via the Observation of Scanning Electron Microscope. Materials Transactions, 2015, 56, 813-818.	1.2	1
94	A study on the effect of double-tip inclined angle on micro-scratching process using smooth particle hydrodynamic method. Advances in Mechanical Engineering, 2017, 9, 168781401772087.	1.6	1
95	Improved Dielectric and Energy Storage Properties of Ba _{0.8} Ca _{0.2} TiO ₃ Ceramics by Doping Ba(Mg ^{1/3}) _{1-x} ETQq _{1-x} 1.0.784314 rgBT	1.8	1
96	MOF-5-derived ZnO nanochains: synthesis and ultrafast triethylamine sensing performance. Journal of Materials Science: Materials in Electronics, 2021, 32, 19284-19296.	2.2	1
97	Fe-doping as a universal phase boundary shifter for BCZT ceramics across the morphotropic phase boundary. Journal of Electroceramics, 2021, 47, 67-78.	2.0	1
98	Research on the Effects of Friction Coefficient on Three-Point Bending by Finite Element Analysis. Journal of Computational and Theoretical Nanoscience, 2015, 12, 5139-5143.	0.4	1
99	Influence of pia-arachnoid complex on the indentation response of porcine brain at different length scales. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 127, 104925.	3.1	1
100	Angle-Dependent failure behaviors of carbon fiber reinforced polymer laminates. Journal of Applied Polymer Science, 2022, 139, .	2.6	1
101	Study on Pre-torsional Loading Influence on Tensile Failure Mechanism of 20 Steel and QT400 under Combined Torsion-Tension Loading. Journal of Materials Engineering and Performance, 2022, 31, 5790-5800.	2.5	1
102	A Novel Composite Deformation Measurement Method of Materials Under Coupling of High-Temperature and Hybrid Tensile-Flexural Loads. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-11.	4.7	1
103	A stick-slip actuator for suppressing the backward motion by introducing a flexible beam. Journal of Intelligent Material Systems and Structures, 2023, 34, 364-376.	2.5	1
104	Influences of fluid flow effects on mechanical properties of the blood fuel cell via finite element method. , 2009, , .		0
105	An <i>In Situ</i> Three-Point Bending Study on Pre-Notch 7075 Aluminium Alloy with Acoustic Emission. Materials Transactions, 2015, 56, 1977-1983.	1.2	0
106	A novel nanoscratch device compatible with commercial microscope for in situ tests of materials' mechanics. Advances in Mechanical Engineering, 2016, 8, 168781401664693.	1.6	0
107	Pre-Crack 7075 Aluminium Alloy Characterize by Acoustic Emission Under Three-Point Bending. Journal of Computational and Theoretical Nanoscience, 2015, 12, 5184-5191.	0.4	0
108	Wear Properties of Self-Fluxing Ni ₆₀ AlMgB ₁₄ Composite Coating Fabricated by Plasma Spraying. Materials Transactions, 2022, 63, 63-68.	1.2	0