

Zhiwei Zhu

List of Publications by Year in descending order

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78
papers

1,960
citations

218592

26
h-index

276775

41
g-index

79
all docs

79
docs citations

79
times ranked

894
citing authors

#	ARTICLE	IF	CITATIONS
1	Development of a New Compliant Active-Force Support System. IEEE/ASME Transactions on Mechatronics, 2022, 27, 372-382.	3.7	6
2	A Novel Compliant Nanopositioning Stage Driven by a Normal-Stressed Electromagnetic Actuator. IEEE Transactions on Automation Science and Engineering, 2022, 19, 3039-3048.	3.4	5
3	Development of a High-Performance Force Sensing Fast Tool Servo. IEEE Transactions on Industrial Informatics, 2022, 18, 35-45.	7.2	14
4	Triaxial Fast Tool Servo Using Hybrid Electromagnetic and Piezoelectric Actuation for Diamond Turning. IEEE Transactions on Industrial Electronics, 2022, 69, 1728-1738.	5.2	19
5	Material removal energy in ultraprecision machining of micro-lens arrays on single crystal silicon by slow tool servo. Journal of Cleaner Production, 2022, 335, 130295.	4.6	10
6	Microstructured surface generation and cutting force prediction of pure titanium TA2. Precision Engineering, 2022, 75, 101-110.	1.8	10
7	Design, Assessment, and Trajectory Control of a Novel Decoupled Robotic Nanomanipulator. IEEE/ASME Transactions on Mechatronics, 2022, 27, 3999-4010.	3.7	8
8	“æž, èj” éé“ééè1/2 à%Šã^æ^: Zhongguo Kexue Jishu Kexue/Scientia Sinica Technologica, 2022		
9	Simultaneous damping and tracking control of a normal-stressed electromagnetic actuated nano-positioning stage. Sensors and Actuators A: Physical, 2022, 338, 113467.	2.0	6
10	Modeling, design and control of normal-stressed electromagnetic actuated fast tool servos. Mechanical Systems and Signal Processing, 2022, 178, 109304.	4.4	10
11	Low-Cost Volumetric 3D Printing of High-Precision Miniature Lenses in Seconds. Advanced Optical Materials, 2022, 10, .	3.6	7
12	Ultraprecision tool-servo cutting of pure nickel for fabricating micro/nanostructure arrays. Materials and Design, 2022, 221, 110913.	3.3	8
13	Development and assessment of a novel two-degree-of-freedom vibration generator for generating and hiding optical information. Mechanical Systems and Signal Processing, 2022, 181, 109470.	4.4	8
14	Tracking Control of Nanopositioning Stages Using Parallel Resonant Controllers for High-Speed Nonraster Sequential Scanning. IEEE Transactions on Automation Science and Engineering, 2021, 18, 1218-1228.	3.4	9
15	Design and analysis of a novel compact XYZ parallel precision positioning stage. Microsystem Technologies, 2021, 27, 1925-1932.	1.2	20
16	Robust high-bandwidth control of nano-positioning stages with Kalman filter based extended state observer and H_∞ control. Review of Scientific Instruments, 2021, 92, 065003.	0.6	6
17	Dual-Axial Tool Servo Diamond Turning of Hierarchical Micro-Nano-Structured Surfaces. Journal of Manufacturing and Materials Processing, 2021, 5, 58.	1.0	1
18	Development of a two-degree-of-freedom vibration generator for fabricating optical microstructure arrays. Optics Express, 2021, 29, 25903.	1.7	7

#	ARTICLE	IF	CITATIONS
19	Design and Trajectory Tracking of a Nanometric Ultra-Fast Tool Servo. IEEE Transactions on Industrial Electronics, 2020, 67, 432-441.	5.2	31
20	Design and Control of a Piezoelectrically Actuated Fast Tool Servo for Diamond Turning of Microstructured Surfaces. IEEE Transactions on Industrial Electronics, 2020, 67, 6688-6697.	5.2	49
21	A theoretical and experimental investigation of cutting forces and spring back behaviour of Ti6Al4V alloy in ultraprecision machining of microgrooves. International Journal of Mechanical Sciences, 2020, 169, 105315.	3.6	25
22	Effects of eco-friendly cooling strategy on machining performance in micro-scale diamond turning of Ti6Al4V. Journal of Cleaner Production, 2020, 243, 118526.	4.6	32
23	On ductile-regime elliptical vibration cutting of silicon with identifying the lower bound of practicable nominal cutting velocity. Journal of Materials Processing Technology, 2020, 283, 116720.	3.1	18
24	Deterioration of form accuracy induced by servo dynamics errors and real-time compensation for slow tool servo diamond turning of complex-shaped optics. International Journal of Machine Tools and Manufacture, 2020, 154, 103556.	6.2	41
25	Development of a piezoelectrically actuated dual-stage fast tool servo. Mechanical Systems and Signal Processing, 2020, 144, 106873.	4.4	47
26	Multi-Physical Design and Resonant Controller Based Trajectory Tracking of the Electromagnetically Driven Fast Tool Servo. Actuators, 2020, 9, 28.	1.2	0
27	An ultrafast 2-D non-resonant cutting tool for texturing micro-structured surfaces. Journal of Manufacturing Processes, 2019, 48, 86-97.	2.8	23
28	Tuned diamond turning of micro-structured surfaces on brittle materials for the improvement of machining efficiency. CIRP Annals - Manufacturing Technology, 2019, 68, 559-562.	1.7	17
29	Development of a Highly Flexible Lattice-Structure-Based Force Sensing Mechanism. IEEE Transactions on Industrial Informatics, 2019, 15, 5943-5953.	7.2	8
30	Cutting forces in fast-/slow tool servo diamond turning of micro-structured surfaces. International Journal of Machine Tools and Manufacture, 2019, 136, 62-75.	6.2	74
31	Modulated diamond cutting for the generation of complicated micro/nanofluidic channels. Precision Engineering, 2019, 56, 136-142.	1.8	12
32	Resonant magneto-electronic effect with isolated magnetomechanical damping in meta-composite of quartz crystal resonator and magnetosensitive alloy. Smart Materials and Structures, 2019, 28, 035022.	1.8	2
33	Design and Adaptive Terminal Sliding Mode Control of a Fast Tool Servo System for Diamond Machining of Freeform Surfaces. IEEE Transactions on Industrial Electronics, 2019, 66, 4912-4922.	5.2	55
34	Diamond turning of micro-lens array on the roller featuring high aspect ratio. International Journal of Advanced Manufacturing Technology, 2018, 96, 2463-2469.	1.5	8
35	Optimum Design of a Piezo-Actuated Triaxial Compliant Mechanism for Nanocutting. IEEE Transactions on Industrial Electronics, 2018, 65, 6362-6371.	5.2	64
36	Identification of the critical depth-of-cut through a 2D image of the cutting region resulting from taper cutting of brittle materials. Measurement Science and Technology, 2018, 29, 055003.	1.4	6

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37	A Resonant Magnetic Field Sensor With High Quality Factor Based on Quartz Crystal Resonator and Magnetostrictive Stress Coupling. IEEE Transactions on Electron Devices, 2018, 65, 2585-2591.	1.6	27
38	External force estimation of a piezo-actuated compliant mechanism based on a fractional order hysteresis model. Mechanical Systems and Signal Processing, 2018, 110, 296-306.	4.4	27
39	Design and application of a flexure-based oscillation mechanism for surface texturing. Journal of Manufacturing Processes, 2018, 32, 298-306.	2.8	14
40	A novel hybrid actuation mechanism based XY nanopositioning stage with totally decoupled kinematics. Mechanical Systems and Signal Processing, 2018, 99, 747-759.	4.4	117
41	A new diamond machining approach for extendable fabrication of micro-freeform lens array. International Journal of Machine Tools and Manufacture, 2018, 124, 134-148.	6.2	68
42	Modeling of the effects of phase shift on cutting performance in elliptical vibration cutting. International Journal of Advanced Manufacturing Technology, 2017, 92, 3103-3115.	1.5	12
43	Development of a Novel 2-D Vibration-Assisted Compliant Cutting System for Surface Texturing. IEEE/ASME Transactions on Mechatronics, 2017, 22, 1796-1806.	3.7	61
44	Design, Analysis, and Realization of a Novel Piezoelectrically Actuated Rotary Spatial Vibration System for Micro-/Nanomachining. IEEE/ASME Transactions on Mechatronics, 2017, 22, 1227-1237.	3.7	54
45	Feasibility study of the novel quasi-elliptical tool servo for vibration suppression in the turning of micro-lens arrays. International Journal of Machine Tools and Manufacture, 2017, 122, 98-105.	6.2	31
46	High-throughput Generation of Hierarchical Micro/Nanostructures by Spatial Vibration-Assisted Diamond Cutting. Advanced Materials Interfaces, 2016, 3, 1500477.	1.9	9
47	A novel piezoelectrically actuated 2-DoF compliant micro/nano-positioning stage with multi-level amplification. Review of Scientific Instruments, 2016, 87, 105006.	0.6	28
48	Characterization of Spatial Parasitic Motions of Compliant Mechanisms Induced by Manufacturing Errors. Journal of Mechanisms and Robotics, 2016, 8, .	1.5	7
49	Theoretical and Experimental Investigation on Inclined Ultrasonic Elliptical Vibration Cutting of Alumina Ceramics. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2016, 138, .	1.3	20
50	Redundantly piezo-actuated XYZ compliant mechanism for nano-positioning featuring simple kinematics, bi-directional motion and enlarged workspace. Smart Materials and Structures, 2016, 25, 125002.	1.8	23
51	Virtual spindle based tool servo diamond turning of discontinuously structured microoptics arrays. CIRP Annals - Manufacturing Technology, 2016, 65, 475-478.	1.7	30
52	Modeling and analysis of uncertainty in on-machine form characterization of diamond-machined optical micro-structured surfaces. Measurement Science and Technology, 2016, 27, 125017.	1.4	7
53	Design, modeling, analysis and testing of a novel piezo-actuated XY compliant mechanism for large workspace nano-positioning. Smart Materials and Structures, 2016, 25, 115033.	1.8	68
54	A novel diamond micro-/nano-machining process for the generation of hierarchical micro-/nano-structures. Journal of Micromechanics and Microengineering, 2016, 26, 035009.	1.5	19

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55	Rotary spatial vibration-assisted diamond cutting of brittle materials. <i>Precision Engineering</i> , 2016, 44, 211-219.	1.8	45
56	Development of a novel type of hybrid non-symmetric flexure hinges. <i>Review of Scientific Instruments</i> , 2015, 86, 085003.	0.6	15
57	A simple compliance modeling method for flexure hinges. <i>Science China Technological Sciences</i> , 2015, 58, 56-63.	2.0	46
58	Development of a 2-degree-of-freedom decoupled flexural mechanism for micro/nanomachining. <i>Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture</i> , 2015, 229, 1900-1911.	1.5	8
59	Novel end-fly-cutting-servo system for deterministic generation of hierarchical micro-“nanostructures. <i>CIRP Annals - Manufacturing Technology</i> , 2015, 64, 133-136.	1.7	29
60	Compliant linear-rotation motion transduction element based on novel spatial helical flexure hinge. <i>Mechanism and Machine Theory</i> , 2015, 92, 330-337.	2.7	12
61	Evolutionary diamond turning of optics for error correction covering a wide spatial spectrum. <i>Optical Engineering</i> , 2015, 54, 015103.	0.5	5
62	Theoretical and experimental investigation on the novel end-fly-cutting-servo diamond machining of hierarchical micro-nanostructures. <i>International Journal of Machine Tools and Manufacture</i> , 2015, 94, 15-25.	6.2	77
63	Adaptive tool servo diamond turning for enhancing machining efficiency and surface quality of freeform optics. <i>Optics Express</i> , 2015, 23, 20234.	1.7	50
64	Large-scale fabrication of micro-lens array by novel end-fly-cutting-servo diamond machining. <i>Optics Express</i> , 2015, 23, 20593.	1.7	75
65	Active control of residual tool marks for freeform optics functionalization by novel biaxial servo assisted fly cutting. <i>Applied Optics</i> , 2015, 54, 7656.	2.1	18
66	Development of a piezoelectrically actuated two-degree-of-freedom fast tool servo with decoupled motions for micro-/nanomachining. <i>Precision Engineering</i> , 2014, 38, 809-820.	1.8	111
67	Development of a novel sort of exponent-sine-shaped flexure hinges. <i>Review of Scientific Instruments</i> , 2013, 84, 095008.	0.6	43
68	Evolution of Workpiece Microstructure and Cutting Force During Ultraprecision Vibration Assisted Machining. <i>Journal of Computational and Theoretical Nanoscience</i> , 2013, 10, 78-85.	0.4	4
69	Development of pseudo-random diamond turning method for fabricating freeform optics with scattering homogenization. <i>Optics Express</i> , 2013, 21, 28469.	1.7	43
70	A Quasiphysics Intelligent Model for a Long Range Fast Tool Servo. <i>Scientific World Journal</i> , The, 2013, 2013, 1-12.	0.8	2
71	A Novel Fractional Order Model for the Dynamic Hysteresis of Piezoelectrically Actuated Fast Tool Servo. <i>Materials</i> , 2012, 5, 2465-2485.	1.3	15
72	Modeling and Compensation for Hysteresis Nonlinearity of a Piezoelectrically Actuated Fast Tool Servo Based on a Novel Linear Model. <i>ISRN Mechanical Engineering</i> , 2012, 2012, 1-8.	0.9	3

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73	Fabrication of Micro-Structured Surfaces on Bulk Metallic Glasses Based on Fast Tool Servo Assisted Diamond Turning. <i>Science of Advanced Materials</i> , 2012, 4, 906-911.	0.1	17
74	An Improved Adaptive Feedforward Cancellation for Trajectory Tracking of Fast Tool Servo Based on Fractional Calculus. <i>Procedia Engineering</i> , 2011, 15, 315-320.	1.2	15
75	Multi-objective optimum design of fast tool servo based on improved differential evolution algorithm. <i>Journal of Mechanical Science and Technology</i> , 2011, 25, 3141-3149.	0.7	34
76	Multiscale Analysis of Cutting Force During Nano-Scale Vibration Assisted Machining. <i>Nanoscience and Nanotechnology Letters</i> , 2011, 3, 749-754.	0.4	2
77	A novel hybrid control strategy for trajectory tracking of fast tool servo. , 2010, , .		2
78	Gravityâ€Controlled and Boundaryâ€Constrained Highâ€Throughput Fabrication of Polymeric Miniature Lens Arrays. <i>Macromolecular Materials and Engineering</i> , 0, , 2100840.	1.7	0