

Dingbang Xiao

List of Publications by Year in descending order

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73
papers

1,037
citations

430874

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h-index

501196

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73
all docs

73
docs citations

73
times ranked

395
citing authors

#	ARTICLE	IF	CITATIONS
1	0.04 degree-per-hour MEMS disk resonator gyroscope with high-quality factor (510‰) and long decaying time constant (74.9‰). <i>Microsystems and Nanoengineering</i> , 2018, 4, 32.	7.0	91
2	Dynamic modulation of modal coupling in microelectromechanical gyroscopic ring resonators. <i>Nature Communications</i> , 2019, 10, 4980.	12.8	57
3	Design of a Disk Resonator Gyroscope With High Mechanical Sensitivity by Optimizing the Ring Thickness Distribution. <i>Journal of Microelectromechanical Systems</i> , 2016, 25, 606-616.	2.5	55
4	Frequency Tuning of a Disk Resonator Gyroscope via Stiffness Perturbation. <i>IEEE Sensors Journal</i> , 2017, 17, 4725-4734.	4.7	43
5	0.015 Degree-Per-Hour Honeycomb Disk Resonator Gyroscope. <i>IEEE Sensors Journal</i> , 2021, 21, 7326-7338.	4.7	37
6	Fused Silica Micro Shell Resonator With T-Shape Masses for Gyroscopic Application. <i>Journal of Microelectromechanical Systems</i> , 2018, 27, 47-58.	2.5	35
7	Influences of the Structure Parameters on Sensitivity and Brownian Noise of the Disk Resonator Gyroscope. <i>Journal of Microelectromechanical Systems</i> , 2017, 26, 519-527.	2.5	31
8	Frequency-Modulated MEMS Gyroscopes: A Review. <i>IEEE Sensors Journal</i> , 2021, 21, 26426-26446.	4.7	30
9	An investigation on the ring thickness distribution of disk resonator gyroscope with high mechanical sensitivity. <i>International Journal of Mechanical Sciences</i> , 2016, 117, 174-181.	6.7	29
10	Nonlinearity Reduction in Disk Resonator Gyroscopes Based on the Vibration Amplification Effect. <i>IEEE Transactions on Industrial Electronics</i> , 2020, 67, 6946-6954.	7.9	29
11	Stiffness-mass decoupled silicon disk resonator for high resolution gyroscopic application with long decay time constant (8.695‰). <i>Applied Physics Letters</i> , 2016, 109, .	3.3	28
12	Decaying Time Constant Enhanced MEMS Disk Resonator for High Precision Gyroscopic Application. <i>IEEE/ASME Transactions on Mechatronics</i> , 2018, 23, 452-458.	5.8	28
13	Enhanced performance of 17.7 GHz SAW devices based on AlN/diamond/Si layered structure with embedded nanotransducer. <i>Applied Physics Letters</i> , 2017, 111, .	3.3	24
14	Research on precise mechanical trimming of a micro shell resonator with T-shape masses using femtosecond laser ablation. <i>Sensors and Actuators A: Physical</i> , 2019, 290, 228-238.	4.1	23
15	Geometric Imperfection Characterization and Precise Assembly of Micro Shell Resonators. <i>Journal of Microelectromechanical Systems</i> , 2020, 29, 480-489.	2.5	22
16	A Rate-Integrating Honeycomb Disk Resonator Gyroscope With 0.038‰/h Bias Instability and 7000‰/s Measurement Range. <i>IEEE Electron Device Letters</i> , 2021, 42, 581-584.	3.9	22
17	Quality Factor Improvement in the Disk Resonator Gyroscope by Optimizing the Spoke Length Distribution. <i>Journal of Microelectromechanical Systems</i> , 2018, 27, 414-423.	2.5	19
18	A Novel High Transduction Efficiency Micro Shell Resonator Gyroscope With 16 T-Shape Masses Using Out-of-Plane Electrodes. <i>IEEE Sensors Journal</i> , 2019, 19, 4820-4828.	4.7	19

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19	Micro Hemispherical Resonator Gyroscope With Teeth-Like Tines. IEEE Sensors Journal, 2021, 21, 13098-13106.	4.7	19
20	Enhanced temperature stability of sensitivity for MEMS gyroscope based on frequency mismatch control. Microsystem Technologies, 2017, 23, 3311-3317.	2.0	16
21	Investigation of Angle Drift Induced by Actuation Electrode Errors for Whole-Angle Micro-Shell Resonator Gyroscope. IEEE Sensors Journal, 2022, 22, 3105-3112.	4.7	16
22	A double differential torsional accelerometer with improved temperature robustness. Sensors and Actuators A: Physical, 2016, 243, 43-51.	4.1	15
23	Honeycomb-Like Disk Resonator Gyroscope. IEEE Sensors Journal, 2020, 20, 85-94.	4.7	15
24	Characterization and Compensation of Detection Electrode Errors for Whole-Angle Micro-Shell Resonator Gyroscope. Journal of Microelectromechanical Systems, 2022, 31, 19-28.	2.5	15
25	A new fabrication process of TGV substrate with silicon vertical feedthroughs using double sided glass in silicon reflow process. Journal of Materials Science: Materials in Electronics, 2017, 28, 3917-3923.	2.2	14
26	Mitigating Thermoelastic Dissipation of Flexural Micromechanical Resonators by Decoupling Resonant Frequency from Thermal Relaxation Rate. Physical Review Applied, 2017, 8, .	3.8	14
27	Application of micro-blowtorching process with whirling platform for enhancing frequency symmetry of microshell structure. Journal of Micromechanics and Microengineering, 2018, 28, 115004.	2.6	14
28	Electro-thermal analysis of an Al-Ti multilayer thin film microheater for MEMS thruster application. Microsystem Technologies, 2018, 24, 2409-2417.	2.0	13
29	Dynamic Modeling of the Multiring Disk Resonator Gyroscope. Micromachines, 2019, 10, 181.	2.9	13
30	Investigation on the Quality Factor Limit of the (111) Silicon Based Disk Resonator. Micromachines, 2018, 9, 25.	2.9	12
31	Nonlinearity-mediated digitization and amplification in electromechanical phonon-cavity systems. Nature Communications, 2022, 13, 2352.	12.8	12
32	Honeycomb-like disk resonator with high immunity to fabrication error for gyroscopic application. , 2017, , .		11
33	Numerical and experimental analysis of cold gas microthruster geometric parameters by univariate and orthogonal method. Microsystem Technologies, 2017, 23, 5003-5016.	2.0	11
34	Analysis and Design of a Polygonal Oblique Beam for the Butterfly Vibratory Gyroscope with Improved Robustness to Fabrication Imperfections. Micromachines, 2018, 9, 198.	2.9	11
35	A Tuning Fork Gyroscope with a Polygon-Shaped Vibration Beam. Micromachines, 2019, 10, 813.	2.9	11
36	Ultrafast laser in fabrication of micro hemispherical resonators with quality factor over millions. Journal of Micromechanics and Microengineering, 2021, 31, 055002.	2.6	11

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37	A New Stress-Released Structure to Improve the Temperature Stability of the Butterfly Vibratory Gyroscope. <i>Micromachines</i> , 2019, 10, 82.	2.9	10
38	A quadrature compensation method to improve the performance of the butterfly vibratory gyroscope. <i>Sensors and Actuators A: Physical</i> , 2021, 319, 112527.	4.1	10
39	Virtual Rotating MEMS Gyrocompassing With Honeycomb Disk Resonator Gyroscope. <i>IEEE Electron Device Letters</i> , 2022, 43, 1331-1334.	3.9	10
40	Effective mechanical trimming of micro shell resonator with T-shape masses. , 2017, , .		9
41	A 4 mm ² Double Differential Torsional MEMS Accelerometer Based on a Double-Beam Configuration. <i>Sensors</i> , 2017, 17, 2264.	3.8	9
42	A Novel High-Sensitivity Butterfly Gyroscope Driven by Horizontal Driving Force. <i>IEEE Sensors Journal</i> , 2019, 19, 2064-2071.	4.7	9
43	Structural-Acoustic Coupling Effects on the Non-Vacuum Packaging Vibratory Cylinder Gyroscope. <i>Sensors</i> , 2013, 13, 17176-17192.	3.8	8
44	Modal Coupling Effect in a Novel Nonlinear Micromechanical Resonator. <i>Micromachines</i> , 2020, 11, 472.	2.9	8
45	Single-crystal diamond micro-cupped resonators made by laser ablation. <i>Microsystem Technologies</i> , 2016, 22, 2603-2610.	2.0	7
46	Thermoelastic quality-factor enhanced disk resonator gyroscope. , 2017, , .		7
47	Adaptive compensation of damping asymmetry in whole-angle hemispherical resonator gyroscope. <i>AIP Advances</i> , 2020, 10, .	1.3	7
48	Radially Pleated Disk Resonator for Gyroscopic Application. <i>Journal of Microelectromechanical Systems</i> , 2021, 30, 825-835.	2.5	7
49	A Dual-Butterfly Structure Gyroscope. <i>Sensors</i> , 2017, 17, 2870.	3.8	6
50	Analysis of Parametric and Subharmonic Excitation in Push-Pull Driven Disk Resonator Gyroscopes. <i>Micromachines</i> , 2021, 12, 61.	2.9	6
51	A newly MEMS vacuum gauge with multi-modes for low vacuum measurement. <i>Vacuum</i> , 2021, 192, 110446.	3.5	6
52	Micro shell resonator with T-shape masses fabricated by micro blow-torching using whirling platform. , 2017, , .		5
53	Damping Asymmetry Trimming Based on the Resistance Heat Dissipation for Coriolis Vibratory Gyroscope in Whole-Angle Mode. <i>Micromachines</i> , 2020, 11, 945.	2.9	5
54	The mechanical sensitivity optimization of a disk resonator gyroscope with mutative ring thickness. , 2016, , .		4

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55	A novel honeycomb-like disk resonant gyroscope. , 2017, , .		4
56	Enhancing airtightness of TGV through regulating interface energy for wafer-level vacuum packaging. <i>Microsystem Technologies</i> , 2018, 24, 3645-3649.	2.0	4
57	Frequency split suppression of fused silica micro shell resonator based on rotating forming process. <i>Microsystem Technologies</i> , 2021, 27, 789-799.	2.0	4
58	Micro Hemispherical Resonators with Quality Factor of 1.18 Million Fabricated Via Laser Ablation. , 2021, , .		4
59	Fused Silica Gyroscope Resonator Manufactured With Femtosecond Laser Assisted Wet Etching. <i>Journal of Microelectromechanical Systems</i> , 2022, 31, 315-317.	2.5	4
60	Stiffness-Mass Decoupled Honeycomb-like Disk Resonator Gyroscope. , 2019, , .		3
61	Temperature Drift Self-calibration for Honeycomb-like Disk Resonator Gyroscope. , 2022, , .		3
62	Calibration of Coupling Errors for Scale Factor Nonlinearity Improvement in Navigation-Grade Honeycomb Disk Resonator Gyroscope. <i>IEEE Transactions on Industrial Electronics</i> , 2023, 70, 5347-5355.	7.9	3
63	Investigation on the way of adding lumped masses on disk resonator gyroscope. , 2017, , .		2
64	Simulated analysis of forming imperfection for micro shell resonators. <i>Microsystem Technologies</i> , 2021, 27, 723-737.	2.0	2
65	A novel high-sensitivity butterfly gyroscope driven by horizontal driving force. , 2017, , .		1
66	A Study on the Trimming Effects on the Quality Factor of Micro-Shell Resonators Vibrating in Wineglass Modes. <i>Micromachines</i> , 2019, 10, 695.	2.9	1
67	Frequency Split Improvement of Fused Silica Micro Shell Resonator Based on Suppression of Geometric Harmonic Error. , 2020, , .		1
68	A Wide Range Frequency Coherent Modulation Control Based on Modal Coupling Effect in MEMS Resonators. , 2021, , .		1
69	Analysis and experiment on the parametrically amplified and push-pull driven resonators. , 2020, , .		1
70	Ultra-fast Characterization of Detection Electrode Errors under Whole-angle Mode in 10 Seconds. , 2022, , .		1
71	The Parametric Amplification in MEMS Gyroscopes Based on Triple Resonant Frequency Signal. , 2021, , .		0
72	Research on the Stability Threshold and Subharmonic Oscillation in a Parametric Excitation MEMS Resonator. , 2021, , .		0

#	ARTICLE	IF	CITATIONS
73	The Analysis of the Subharmonic Excitation in a Disk MEMS Gyroscope. , 2020, , .		0