

# Farrokh Ayazi

## List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

99  
papers

2,757  
citations

28  
h-index

50  
g-index

106  
ext. papers

3,398  
ext. citations

3.7  
avg, IF

5.35  
L-index

#	Paper	IF	Citations
99	An analytical model for support loss in micromachined beam resonators with in-plane flexural vibrations. <i>Sensors and Actuators A: Physical</i> , <b>2003</b> , 109, 156-164	3.9	259
98	Piezoelectric-on-Silicon Lateral Bulk Acoustic Wave Micromechanical Resonators. <i>Journal of Microelectromechanical Systems</i> , <b>2008</b> , 17, 512-520	2.5	158
97	A Mode-Matched Silicon-Yaw Tuning-Fork Gyroscope With Subdegree-Per-Hour Allan Deviation Bias Instability. <i>Journal of Microelectromechanical Systems</i> , <b>2008</b> , 17, 1526-1536	2.5	127
96	Low-Impedance VHF and UHF Capacitive Silicon Bulk Acoustic Wave Resonators Part I: Concept and Fabrication. <i>IEEE Transactions on Electron Devices</i> , <b>2007</b> , 54, 2017-2023	2.9	106
95	A Sub-0.2 $\frac{\circ}{\text{hr}}$ Bias Drift Micromechanical Silicon Gyroscope With Automatic CMOS Mode-Matching. <i>IEEE Journal of Solid-State Circuits</i> , <b>2009</b> , 44, 1593-1608	5.5	105
94	An advanced reactive ion etching process for very high aspect-ratio sub-micron wide trenches in silicon. <i>Sensors and Actuators A: Physical</i> , <b>2008</b> , 144, 109-116	3.9	105
93	Sub-Micro-Gravity In-Plane Accelerometers With Reduced Capacitive Gaps and Extra Seismic Mass. <i>Journal of Microelectromechanical Systems</i> , <b>2007</b> , 16, 1036-1043	2.5	87
92	Temperature-Stable Silicon Oxide (SiOx) Micromechanical Resonators. <i>IEEE Transactions on Electron Devices</i> , <b>2013</b> , 60, 2656-2663	2.9	82
91	Electronically Temperature Compensated Silicon Bulk Acoustic Resonator Reference Oscillators. <i>IEEE Journal of Solid-State Circuits</i> , <b>2007</b> , 42, 1425-1434	5.5	82
90	A 104-dB Dynamic Range Transimpedance-Based CMOS ASIC for Tuning Fork Microgyroscopes. <i>IEEE Journal of Solid-State Circuits</i> , <b>2007</b> , 42, 1790-1802	5.5	79
89	Voltage-tunable piezoelectrically-transduced single-crystal silicon micromechanical resonators. <i>Sensors and Actuators A: Physical</i> , <b>2004</b> , 111, 71-78	3.9	73
88	A 4.5-mW Closed-Loop $\Delta\sigma$ Micro-Gravity CMOS SOI Accelerometer. <i>IEEE Journal of Solid-State Circuits</i> , <b>2006</b> , 41, 2983-2991	5.5	72
87	Micro-gravity capacitive silicon-on-insulator accelerometers. <i>Journal of Micromechanics and Microengineering</i> , <b>2005</b> , 15, 2113-2120	2	64
86	. <i>Journal of Microelectromechanical Systems</i> , <b>2010</b> , 19, 503-515	2.5	57
85	Support loss in the radial bulk-mode vibrations of center-supported micromechanical disk resonators. <i>Sensors and Actuators A: Physical</i> , <b>2007</b> , 134, 582-593	3.9	50
84	Electrically coupled MEMS bandpass filters: Part I: With coupling element. <i>Sensors and Actuators A: Physical</i> , <b>2005</b> , 122, 307-316	3.9	48
83	A 76 dB $\Omega$ $\times$ 1.7 GHz 0.18 $\mu\text{m}$ CMOS Tunable TIA Using Broadband Current Pre-Amplifier for High Frequency Lateral MEMS Oscillators. <i>IEEE Journal of Solid-State Circuits</i> , <b>2011</b> , 46, 224-235	5.5	47

82	Temperature compensation of silicon micromechanical resonators via degenerate doping <b>2009</b> ,		46
81	Substrate-decoupled, bulk-acoustic wave gyroscopes: Design and evaluation of next-generation environmentally robust devices. <i>Microsystems and Nanoengineering</i> , <b>2016</b> , 2, 16015	7.7	44
80	Wafer-level MEMS packaging via thermally released metal-organic membranes. <i>Journal of Micromechanics and Microengineering</i> , <b>2006</b> , 16, 742-750	2	41
79	Low-Impedance VHF and UHF Capacitive Silicon Bulk Acoustic-Wave Resonators Part II: Measurement and Characterization. <i>IEEE Transactions on Electron Devices</i> , <b>2007</b> , 54, 2024-2030	2.9	40
78	. <i>Journal of Microelectromechanical Systems</i> , <b>2020</b> , 29, 741-747	2.5	37
77	A Polysilicon Microhemispherical Resonating Gyroscope. <i>Journal of Microelectromechanical Systems</i> , <b>2014</b> , 23, 762-764	2.5	36
76	MEMS Switched Tunable Inductors. <i>Journal of Microelectromechanical Systems</i> , <b>2008</b> , 17, 78-84	2.5	36
75	High-frequency monolithic thin-film piezoelectric-on-substrate filters. <i>International Journal of Microwave and Wireless Technologies</i> , <b>2009</b> , 1, 29-35	0.8	33
74	Performance Analysis of Gyroscope and Accelerometer Sensors for Seismocardiography-Based Wearable Pre-Ejection Period Estimation. <i>IEEE Journal of Biomedical and Health Informatics</i> , <b>2019</b> , 23, 2365-2374	7.2	32
73	Dual-Mode AlN-on-Silicon Micromechanical Resonators for Temperature Sensing. <i>IEEE Transactions on Electron Devices</i> , <b>2014</b> , 61, 591-597	2.9	32
72	Capacitive Bulk Acoustic Wave Silicon Disk Gyroscopes <b>2006</b> ,		29
71	A Low Phase Noise 100MHz Silicon BAW Reference Oscillator <b>2006</b> ,		28
70	A 0.1°/HR bias drift electronically matched tuning fork microgyroscope. <i>Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS)</i> , <b>2008</b> ,		27
69	High aspect-ratio polysilicon micromachining technology. <i>Sensors and Actuators A: Physical</i> , <b>2000</b> , 87, 46-51	3.9	27
68	Wafer-Level Packaging of Micromechanical Resonators. <i>IEEE Transactions on Advanced Packaging</i> , <b>2007</b> , 30, 19-26		26
67	High-frequency capacitive disk gyroscopes in (100) and (111) silicon <b>2007</b> ,		26
66	An Empirical Phase-Noise Model for MEMS Oscillators Operating in Nonlinear Regime. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , <b>2012</b> , 59, 979-988	3.9	24
65	High-Frequency AlN-on-Silicon Resonant Square Gyroscopes. <i>Journal of Microelectromechanical Systems</i> , <b>2013</b> , 22, 1007-1009	2.5	23

64	High-order composite bulk acoustic resonators <b>2007</b> ,		23
63	Resonant pitch and roll silicon gyroscopes with sub-micron-gap slanted electrodes: Breaking the barrier toward high-performance monolithic inertial measurement units. <i>Microsystems and Nanoengineering</i> , <b>2017</b> , 3, 16092	7.7	22
62	Bulk and Surface Thermoelastic Dissipation in Micro-Hemispherical Shell Resonators. <i>Journal of Microelectromechanical Systems</i> , <b>2015</b> , 24, 486-502	2.5	22
61	A 3D-HARPSS Polysilicon Microhemispherical Shell Resonating Gyroscope: Design, Fabrication, and Characterization. <i>IEEE Sensors Journal</i> , <b>2015</b> , 15, 4974-4985	4	22
60	Electronic Temperature Compensation of Lateral Bulk Acoustic Resonator Reference Oscillators Using Enhanced Series Tuning Technique. <i>IEEE Journal of Solid-State Circuits</i> , <b>2012</b> , 47, 1381-1393	5.5	21
59	High-Density Embedded Deep Trench Capacitors in Silicon With Enhanced Breakdown Voltage. <i>IEEE Transactions on Components and Packaging Technologies</i> , <b>2009</b> , 32, 808-815		21
58	The Resonating Star Gyroscope: A Novel Multiple-Shell Silicon Gyroscope With Sub-5 deg/hr Allan Deviation Bias Instability. <i>IEEE Sensors Journal</i> , <b>2009</b> , 9, 616-624	4	20
57	An FPGA-Based Interface System for High-Frequency Bulk-Acoustic-Wave Microgyroscopes With In-Run Automatic Mode-Matching. <i>IEEE Transactions on Instrumentation and Measurement</i> , <b>2020</b> , 69, 1783-1793 <sup>20</sup>	5.2	20
56	A Dual-Mode Actuation and Sensing Scheme for In-Run Calibration of Bias and Scale Factor Errors in Axisymmetric Resonant Gyroscopes. <i>IEEE Sensors Journal</i> , <b>2018</b> , 18, 1993-2005	4	19
55	A Digital Phase Demodulation Technique for Resonant MEMS Gyroscopes. <i>IEEE Sensors Journal</i> , <b>2014</b> , 14, 3260-3266	4	17
54	Characterization of high-Qspiral inductors on thick insulator-on-silicon. <i>Journal of Micromechanics and Microengineering</i> , <b>2005</b> , 15, 2105-2112	2	17
53	Low-Pressure Wafer-Level-Packaged Capacitive Accelerometers With High Dynamic Range and Wide Bandwidth Using Nano-Gap Sloped Electrode Design. <i>Journal of Microelectromechanical Systems</i> , <b>2017</b> , 26, 1335-1344	2.5	16
52	Postfabrication Electrical Trimming of Silicon Micromechanical Resonators via Joule Heating. <i>Journal of Microelectromechanical Systems</i> , <b>2011</b> , 20, 1081-1088	2.5	14
51	Monocrystalline Silicon Carbide Disk Resonators on Phononic Crystals with Ultra-Low Dissipation Bulk Acoustic Wave Modes. <i>Scientific Reports</i> , <b>2019</b> , 9, 18698	4.9	14
50	. <i>IEEE Sensors Journal</i> , <b>2014</b> , 14, 3498-3505	4	13
49	Energy dissipation in micromechanical resonators <b>2011</b> ,		13
48	. <i>Journal of Microelectromechanical Systems</i> , <b>2010</b> , 19, 516-525	2.5	13
47	A 145MHz low phase-noise capacitive silicon micromechanical oscillator <b>2008</b> ,		13

46	Lamb Waves and Resonant Modes in Rectangular-Bar Silicon Resonators. <i>Journal of Microelectromechanical Systems</i> , <b>2010</b> , 19, 827-839	2.5	12
45	High Performance Inductors on CMOS-Grade Trenched Silicon Substrate. <i>IEEE Transactions on Components and Packaging Technologies</i> , <b>2008</b> , 31, 126-134		12
44	High-Q Micromachined Silver Passives and Filters <b>2006</b> ,		12
43	A Low-Voltage Temperature-Stable Micromechanical Piezoelectric Oscillator <b>2007</b> ,		11
42	Acoustically-engineered multi-port AlN-on-silicon resonators for accurate temperature sensing <b>2013</b> ,		10
41	Process compensated CMOS temperature sensor for microprocessor application <b>2012</b> ,		10
40	Single-Resonator Dual-Frequency Thin-Film Piezoelectric-on-Substrate Oscillator <b>2007</b> ,		10
39	A High-Frequency Resonant Framed-Annulus Pitch or Roll Gyroscope for Robust High-Performance Single-Chip Inertial Measurement Units. <i>Journal of Microelectromechanical Systems</i> , <b>2018</b> , 27, 995-1008	2.5	10
38	Cascaded collimator for atomic beams traveling in planar silicon devices. <i>Nature Communications</i> , <b>2019</b> , 10, 1831	17.4	9
37	Dual-mode piezo-on-silicon resonant temperature and humidity sensor for portable air quality monitoring systems <b>2010</b> ,		9
36	Wafer-Level Encapsulation and Sealing of Electrostatic HARPSS Transducers <b>2007</b> ,		9
35	Gyroscope sensing and self-calibration architecture based on signal phase shift. <i>Sensors and Actuators A: Physical</i> , <b>2016</b> , 241, 1-11	3.9	9
34	High- $Q$ AlN-on-Silicon Resonators With Annexed Platforms for Portable Integrated VOC Sensing. <i>Journal of Microelectromechanical Systems</i> , <b>2015</b> , 24, 503-509	2.5	8
33	Low motional impedance distributed Lamé mode resonators for high frequency timing applications. <i>Microsystems and Nanoengineering</i> , <b>2020</b> , 6, 53	7.7	8
32	Monolithic Thin-Film Piezoelectric-on-Substrate Filters. <i>IEEE MTT-S International Microwave Symposium Digest IEEE MTT-S International Microwave Symposium</i> , <b>2007</b> ,		7
31	The HARPSS process for fabrication of precision MEMS inertial sensors. <i>Mechatronics</i> , <b>2002</b> , 12, 1185-1199		7
30	High-Q monocrystalline silicon carbide disk resonators fabricated using drier of thick SiC-on-insulator substrates <b>2018</b> ,		6
29	An Integrated 800-MHz Coupled-Resonator Tunable Bandpass Filter in Silver With a Constant Bandwidth. <i>Journal of Microelectromechanical Systems</i> , <b>2009</b> , 18, 942-949	2.5	6

28	A Temperature-Compensated ZnO-on-Diamond Resonant Mass Sensor <b>2006,</b>	6
27	<b>2017,</b>	5
26	Highly-symmetric silicon dioxide shallow shell resonators with angstrom-level roughness <b>2015,</b>	5
25	Eutectic trimming of polysilicon micro hemispherical resonating Gyroscope <b>2013,</b>	5
24	Self-polarized capacitive silicon micromechanical resonators via charge trapping <b>2010,</b>	5
23	Intrinsic temperature compensation of highly resistive high-Q silicon microresonators via charge carrier depletion <b>2010,</b>	5
22	A 104dB SNDR Transimpedance-based CMOS ASIC for Tuning Fork Microgyroscopes <b>2006,</b>	5
21	High-Q Tunable Silver Capacitors for RFICs <b>2007,</b>	5
20	Eigenmode operation of piezoelectric resonant gyroscopes. <i>Microsystems and Nanoengineering</i> , <b>2020</b> , 6, 108	7-7 5
19	High frequency XYZ-axis single-disk silicon gyroscope. <i>Proceedings of the IEEE International Conference on Micro Electro Mechanical Systems (MEMS)</i> , <b>2008,</b>	4
18	A High- $k_t^2$ Switchable Ferroelectric Al <sub>0.7</sub> Sc <sub>0.3</sub> N Film Bulk Acoustic Resonator <b>2020,</b>	4
17	Linear acoustic bandgap arrays for spurious mode suppression in piezoelectric MEMS resonators <b>2011,</b>	3
16	Tunable silicon bulk acoustic resonators with multi-face AlN transduction <b>2011,</b>	3
15	A Smart Angular Rate Sensor System <b>2007,</b>	3
14	CMOS-Compatible Encapsulated Silver Bandpass Filters. <i>IEEE MTT-S International Microwave Symposium Digest IEEE MTT-S International Microwave Symposium</i> , <b>2007,</b>	3
13	Finite Ground Coplanar Lines on CMOS Grade Silicon with a Thick Embedded Silicon Oxide Layer Using Micromachining Techniques <b>2003,</b>	3
12	MEMS Inertial Sensors. <i>Advanced Micro &amp; Nanosystems</i> , <b>2015</b> , 327-353	2
11	An electronically temperature-compensated 427MHz low phase-noise AlN-on-Si micromechanical reference oscillator <b>2010,</b>	2

10	Low-loss MEMS band-pass filters with improved out-of-band rejection by exploiting inductive parasitics <b>2009</b> ,		2
9	Process compensated micromechanical resonators <b>2007</b> ,		2
8	Compensation, Tuning, and Trimming of MEMS Resonators. <i>Advanced Micro &amp; Nanosystems</i> ,305-325		2
7	(Invited) Nano-Precision Deep Reactive Ion Etching of Monocrystalline 4H-SiCOI for Bulk Acoustic Wave Resonators with Ultra-Low Dissipation. <i>ECS Transactions</i> , <b>2020</b> , 97, 3-13	1	1
6	A digital force-to-rebalance scheme for high-frequency bulk-acoustic-wave micro-gyroscopes. <i>Sensors and Actuators A: Physical</i> , <b>2020</b> , 313, 112181	3.9	1
5	Three-dimensional, ultra-wideband micromachined millimetre-wave hemispherical shell antenna: theoretical concept and calibration. <i>IET Microwaves, Antennas and Propagation</i> , <b>2016</b> , 10, 525-535	1.6	1
4	Robust characterization of microfabricated atomic beams on a six-month time scale. <i>Physical Review Research</i> , <b>2020</b> , 2,	3.9	1
3	Investigating Elastic Anisotropy of 4H-SiC Using Ultra-High Q Bulk Acoustic Wave Resonators. <i>Journal of Microelectromechanical Systems</i> , <b>2020</b> , 29, 1473-1482	2.5	1
2	A Band-Reject Nested-PLL Clock Cleaner Using a Tunable MEMS Oscillator. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , <b>2014</b> , 61, 653-662	3.9	0
1	A temperature compensated biaxial eFM accelerometer in Epi-seal process. <i>Sensors and Actuators A: Physical</i> , <b>2021</b> , 330, 112860	3.9	0