Matthias Imboden

List of Publications by Year
in descending order

40 papers	1,478 citations	361413 20 h-index	315739 38 g-index
43 all docs	43 docs citations	43 times ranked	2374 citing authors

#	Article	IF	Citations
1	An autonomous untethered fast soft robotic insect driven by low-voltage dielectric elastomer actuators. Science Robotics, 2019, 4, .	17.6	295
2	Synchronized Oscillation in Coupled Nanomechanical Oscillators. Science, 2007, 316, 95-99.	12.6	222
3	Dissipation in nanoelectromechanical systems. Physics Reports, 2014, 534, 89-146.	25.6	198
4	High quality factor gigahertz frequencies in nanomechanical diamond resonators. Applied Physics Letters, 2007, 91, .	3.3	79
5	Electrothermally actuated tip-tilt-piston micromirror with integrated varifocal capability. Optics Express, 2015, 23, 9555.	3.4	48
6	Electrostatically actuated silicon-based nanomechanical switch at room temperature. Applied Physics Letters, 2008, 93, .	3.3	47
7	High-speed mechano-active multielectrode array for investigating rapid stretch effects on cardiac tissue. Nature Communications, 2019, 10, 834.	12.8	45
8	Nonlinear dissipation in diamond nanoelectromechanical resonators. Applied Physics Letters, 2013, 102, .	3.3	43
9	Scaling of dissipation in megahertz-range micromechanical diamond oscillators. Applied Physics Letters, 2007, 90, 173502.	3.3	42
10	An ultra-fast mechanically active cell culture substrate. Scientific Reports, 2018, 8, 9895.	3.3	39
11	Observation of Nonlinear Dissipation in Piezoresistive Diamond Nanomechanical Resonators by Heterodyne Down-Mixing. Nano Letters, 2013, 13, 4014-4019.	9.1	34
12	Evidence of universality in the dynamical response of micromechanical diamond resonators at millikelvin temperatures. Physical Review B, 2009, 79, .	3.2	31
13	Design, performance, and calibration of CMS hadron-barrel calorimeter wedges. European Physical Journal C, 2008, 55, 159-171.	3.9	30
14	Top-down nanomanufacturing. Physics Today, 2014, 67, 45-50.	0.3	30
15	MEMS Tunable Mid-Infrared Plasmonic Spectrometer. ACS Photonics, 2016, 3, 14-19.	6.6	29
16	Pions versus magnons: from QCD to antiferromagnets and quantum Hall ferromagnets. Nuclear Physics B, 2004, 686, 347-376.	2.5	26
17	Building a Casimir metrology platform with a commercial MEMS sensor. Microsystems and Nanoengineering, 2019, 5, 14.	7.0	25
18	Atomic Calligraphy: The Direct Writing of Nanoscale Structures Using a Microelectromechanical System. Nano Letters, 2013, 13, 3379-3384.	9.1	24

#	Article	IF	Citations
19	High-Speed Control of Electromechanical Transduction: Advanced Drive Techniques for Optimized Step-and-Settle Response of MEMS Micromirrors. IEEE Control Systems, 2016, 36, 48-76.	0.8	23
20	Design of a Casimir-driven parametric amplifier. Journal of Applied Physics, 2014, 116, .	2.5	20
21	Building a Fab on a Chip. Nanoscale, 2014, 6, 5049-5062.	5.6	17
22	Controlling Levitation and Enhancing Displacement in Electrostatic Comb Drives of MEMS Actuators. Journal of Microelectromechanical Systems, 2014, 23, 1063-1072.	2.5	13
23	Energy measurement in nonlinearly coupled nanomechanical modes. Applied Physics Letters, 2011, 98, 264106.	3.3	12
24	A Large Range of Motion 3D MEMS Scanner With Five Degrees of Freedom. Journal of Microelectromechanical Systems, 2019, 28, 170-179.	2.5	12
25	Tuning the resonance frequencies and mode shapes in a large range multi-degree of freedom micromirror. Optics Express, 2017, 25, 7895.	3.4	11
26	Beam shaping with tip-tilt varifocal mirror for indoor optical wireless communication. Optics Express, 2017, 25, 20274.	3.4	11
27	Analysis of a Casimir-driven parametric amplifier with resilience to Casimir pull-in for MEMS single-point magnetic gradiometry. Microsystems and Nanoengineering, 2021, 7, 73.	7.0	10
28	Engineered PWM Drives for Achieving Rapid Step and Settle Times for MEMS Actuation. Journal of Microelectromechanical Systems, 2018, 27, 513-520.	2.5	9
29	Optimization of thin-film highly-compliant elastomer sensors for contractility measurement of muscle cells. Extreme Mechanics Letters, 2016, 9, 1-10.	4.1	8
30	Programmable solid state atom sources for nanofabrication. Nanoscale, 2015, 7, 10735-10744.	5.6	6
31	High Performance, Continuously Tunable Microwave Filters Using MEMS Devices With Very Large, Controlled, Out-of-Plane Actuation. Journal of Microelectromechanical Systems, 2018, 27, 1135-1147.	2.5	6
32	A system for probing Casimir energy corrections to the condensation energy. Microsystems and Nanoengineering, 2020, 6, 115.	7.0	6
33	Comb Drive Designs With Minimized Levitation. Journal of Microelectromechanical Systems, 2016, 25, 1025-1032.	2.5	5
34	Zeptometer Metrology Using the Casimir Effect. Journal of Low Temperature Physics, 2022, 208, 147-159.	1.4	5
35	Cryogenic Fab-on-a-Chip Sticks the Landing. ACS Nano, 2017, 11, 8707-8716.	14.6	4
36	Single ended capacitive self-sensing system for comb drives driven XY nanopositioners. Sensors and Actuators A: Physical, 2018, 271, 409-417.	4.1	4

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37	Feedforward Control Algorithms for MEMS Galvos and Scanners. Journal of Microelectromechanical Systems, 2021, 30, 612-621.	2.5	4
38	CHAPTER 17. Diamond Nano-electromechanical Systems. RSC Nanoscience and Nanotechnology, 2014, , 411-447.	0.2	2
39	Directional visible light communication signal enhancement using a varifocal micromirror with four degrees of freedom. , 2016, , .		2
40	The Integration of Optical Stimulation in a Mechanically Dynamic Cell Culture Substrate. Frontiers in Bioengineering and Biotechnology, 0, 10, .	4.1	1