Giacomo Langfelder

List of Publications by Year
in descending order

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94 papers	1,525 citations	257450 24 h-index	377865 34 g-index
94 all docs	94 docs citations	94 times ranked	815 citing authors

#	Article	IF	Citations
1	Efficient Phase and Quadrature Control of a PZT Resonant MEMS Microscanner with Piezoresistive Position Sensor. , 2022, , .		3
2	Thermal Characterization of Scale-Factor and Zero-Rate Offset in Near-Navigation-Grade Nems-Based Gyroscopes. , 2022, , .		8
3	Chipping Energy Threshold in MEMS Sensors. Journal of Microelectromechanical Systems, 2022, 31, 415-423.	2.5	1
4	Piezoresistive Versus Piezoelectric Position Sensing in MEMS Micromirrors: A Noise and Temperature Drift Comparison. , 2022, 6, 1-4.		3
5	Accuracy of a new electronic nose for prostate cancer diagnosis in urine samples. International Journal of Urology, 2022, 29, 890-896.	1.0	12
6	Bread baking monitoring by smart sensory system: a feasibility study. , 2022, , .		0
7	Monitoring Cardiac Activity by Detecting Subtle Head Movements Using MEMS Technology. , 2022, , .		0
8	Active Shock/Vibes Rejection in FM MEMS Accelerometers. , 2022, , .		2
9	A MEMS Real-Time Clock With Single-Temperature Calibration and Deterministic Jitter Cancellation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 880-889.	3.0	9
10	Resonant Accelerometers Based on Nanomechanical Piezoresistive Transduction. , 2021, , .		7
11	Long-Term Characterization of a New Wide-Angle Micromirror With PZT Actuation and PZR Sensing. Journal of Microelectromechanical Systems, 2021, 30, 281-289.	2.5	16
12	Closed-Loop Control of Quasi-Static Scanning PZT Micromirrors with Embedded Piezoresistive Sensing and Spurious Mode Rejection. , 2021, , .		5
13	Silicon MEMS inertial sensors evolution over a quarter century. Journal of Micromechanics and Microengineering, 2021, 31, 084002.	2.6	44
14	1.3 mm² Nav-Grade NEMS-Based Gyroscope. Journal of Microelectromechanical Systems, 2021, 30, 513-520.	2.5	31
15	A 3D Printed Ti6Al4V Alloy Uniaxial Capacitive Accelerometer. IEEE Sensors Journal, 2021, 21, 19640-19646.	4.7	4
16	Direct Phase Measurement and Compensation to Enhance MEMS Gyroscopes ZRO Stability. Journal of Microelectromechanical Systems, 2021, 30, 703-711.	2.5	9
17	Miniaturized quadruple mass gyroscopes: challenges and implementation. , 2021, , .		2
18	Frequency and Quality Factor Matched 2-Axis Dual Mass Resonator. , 2021, , .		6

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19	On amplitude-gain-control optimization for Lissajous frequency modulated MEMS gyroscopes. , 2021, , .		2
20	Quarter-mm² High Dynamic Range Silicon Capacitive Accelerometer With a 3D Process. IEEE Sensors Journal, 2020, 20, 689-699.	4.7	11
21	Thermal Stability of DETF MEMS Resonators: Numerical Modelling and Experimental Validation. , 2020, , .		10
22	Chipping and wearing in MEMS inertial sensors: effects on stability and predictive analysis through test structures. , 2020, , .		3
23	An Outlook on Potentialities and Limits in Using Epitaxial Polysilicon for MEMS Real-Time Clocks. IEEE Transactions on Industrial Electronics, 2020, 67, 6996-7004.	7.9	4
24	The First Three-Dimensional Printed and Wet-Metallized Coriolis Mass Flowmeter. , 2020, 4, 1-4.		6
25	The First 3D-Printed and Wet-Metallized Three-Axis Accelerometer With Differential Capacitive Sensing. IEEE Sensors Journal, 2019, 19, 9131-9138.	4.7	30
26	Enhancing Vibration Robustness and Noise in Automotive Gyroscope with Large Drive Motion and Levered Sense Mode. , 2019, , .		7
27	AGC-Less Operation of High-Stability Lissajous Frequency-Modulated Mems Gyroscopes. , 2019, , .		6
28	Towards 3-Axis FM Mems Gyroscopes: Mechanical Design and Experimental Validation. , 2019, , .		1
29	Hardening, Softening, and Linear Behavior of Elastic Beams in MEMS: An Analytical Approach. Journal of Microelectromechanical Systems, 2019, 28, 189-198.	2.5	13
30	Frequency-modulated MEMS accelerometers for wide dynamic range and ultra-low consumption. , 2019, , .		9
31	Fully Integrated, 406 muA, $ext{5 }^{circ}$/hr, Full Digital Output Lissajous Frequency-Modulated Gyroscope. IEEE Transactions on Industrial Electronics, 2019, 66, 7386-7396.	7.9	30
32	MEMS Emulator: A Tool for Development and Testing of Electronics for Microelectromechanical Systems. Journal of Microelectromechanical Systems, 2018, 27, 321-332.	2.5	5
33	A new MEMS three-axial frequency-modulated (FM) gyroscope: a mechanical perspective. European Journal of Mechanics, A/Solids, 2018, 70, 203-212.	3.7	22
34	The First 3-D-Printed z-Axis Accelerometers With Differential Capacitive Sensing. IEEE Sensors Journal, 2018, 18, 53-60.	4.7	28
35	High Scale-Factor Stability Frequency-Modulated MEMS Gyroscope: 3-Axis Sensor and Integrated Electronics Design. IEEE Transactions on Industrial Electronics, 2018, 65, 5040-5050.	7.9	48
36	Single-resonator, time-switched FM MEMS accelerometer with theoretical offset drift complete cancellation. , 2018, , .		7

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37	3D-printing and wet metallization for uniaxial and multi-axial accelerometers. , 2018, , .		3
38	Electro-mechanical chopping & modulation of acceleration: The geometry-modulated accelerometer. , 2018, , .		1
39	Resonators for real-time clocks based on epitaxial polysilicon process: A feasibility study on system-level compensation of temperature drifts. , 2018, , .		9
40	Single resonator, time-switched, low offset drift z-axis FM MEMS accelerometer. , 2018, , .		3
41	Monolithic 3-Axis MEMS Multi-Loop Magnetometer: A Performance Analysis. Journal of Microelectromechanical Systems, 2018, 27, 748-758.	2.5	16
42	Solving FSR Versus Offset-Drift Trade-Offs With Three-Axis Time-Switched FM MEMS Accelerometer. Journal of Microelectromechanical Systems, 2018, 27, 790-799.	2.5	24
43	100 nT/âˆšHz, 0.5 mm‹sup›2‹/sup› monolithic, multi-loop low-power 3-axis MEMS magnetometer. , 2018, , .		4
44	Microelectromechanical systems integrating motion and displacement sensors. , 2018, , 395-428.		3
45	Ultra-low-voltage gyroscopes based on piezoresistive NEMS for drive-motion and coriolis-motion sensing. , 2017, , .		0
46	Near Vacuum Gas Damping in MEMS: Simplified Modeling. Journal of Microelectromechanical Systems, 2017, 26, 632-642.	2.5	32
47	MEMS Gyroscopes Based on Piezoresistive NEMS Detection of Drive and Sense Motion. Journal of Microelectromechanical Systems, 2017, 26, 1389-1399.	2.5	33
48	Signal integrity in capacitive and piezoresistive single- and multi-axis MEMS gyroscopes under vibrations. Microelectronics Reliability, 2017, 75, 59-68.	1.7	12
49	The First Frequency-Modulated (FM) Pitch Gyroscope. Proceedings (mdpi), 2017, 1, 393.	0.2	5
50	Design, Fabrication and Testing of the First 3D-Printed and Wet Metallized z-Axis Accelerometer. Proceedings (mdpi), 2017, 1, .	0.2	2
51	Near Vacuum Gas Damping in MEMS: Numerical Modeling and Experimental Validation. Journal of Microelectromechanical Systems, 2016, 25, 890-899.	2.5	24
52	A 3-D Micromechanical Multi-Loop Magnetometer Driven Off-Resonance by an On-Chip Resonator. Journal of Microelectromechanical Systems, 2016, 25, 637-651.	2.5	21
53	Vibrations rejection in gyroscopes based on piezoresistive nanogauges. , 2015, , .		14
54	100 µA, 320 nT/vHz, 3-AXIS Lorentz force MEMS magnetometer. , 2015, , .		3

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55	Optimization of Sensing Stators in Capacitive MEMS Operating at Resonance. Journal of Microelectromechanical Systems, 2015, 24, 1077-1084.	2.5	16
56	In-Plane and Out-of-Plane MEMS Gyroscopes Based on Piezoresistive NEMS Detection. Journal of Microelectromechanical Systems, 2015, 24, 1817-1826.	2.5	49
57	A Sub-400-nT/<inline-formula> <tex-math notation="LaTeX">$sqrt{ext{Hz}}$ </tex-math></inline-formula>, 775-<inline-formula> <tex-math notation="LaTeX">$mu ext{W}$ </tex-math></inline-formula>, Multi-Loop MEMS Magnetometer With Integrated Readout Electronics. Journal of Microelectromechanical Systems, 2015, 24, 1038-1050.	2.5	24
58	Fatigue in Nanometric Single-Crystal Silicon Layers and Beams. Journal of Microelectromechanical Systems, 2015, 24, 822-830.	2.5	9
59	Analysis of Mode-Split Operation in MEMS Based on Piezoresistive Nanogauges. Journal of Microelectromechanical Systems, 2015, 24, 174-181.	2.5	15
60	Combining transverse field detectors and color filter arrays to improve multispectral imaging systems. Applied Optics, 2014, 53, C14.	1.8	23
61	Off-Resonance Low-Pressure Operation of Lorentz Force MEMS Magnetometers. IEEE Transactions on Industrial Electronics, 2014, 61, 7124-7130.	7.9	19
62	Operation of Lorentz-Force MEMS Magnetometers With a Frequency Offset Between Driving Current and Mechanical Resonance. IEEE Transactions on Magnetics, 2014, 50, 1-6.	2.1	40
63	Investigation of the fatigue origin and propagation in submicrometric silicon piezoresistive layers. , 2014, , .		3
64	Design Criteria of Low-Power Oscillators for Consumer-Grade MEMS Resonant Sensors. IEEE Transactions on Industrial Electronics, 2014, 61, 567-574.	7.9	43
65	A Differential Resonant Micro Accelerometer for Out-of-plane Measurements. Procedia Engineering, 2014, 87, 640-643.	1.2	17
66	Compact biaxial micromachined resonant accelerometer. Journal of Micromechanics and Microengineering, 2013, 23, 105012.	2.6	33
67	MEMS Electrometer With Femtoampere Resolution for Aerosol Particulate Measurements. IEEE Sensors Journal, 2013, 13, 2993-3000.	4.7	36
68	CMOS Pixels Directly Sensitive to Both Visible and Near-Infrared Radiation. IEEE Transactions on Electron Devices, 2013, 60, 1695-1700.	3.0	10
69	Z-Axis Magnetometers for MEMS Inertial Measurement Units Using an Industrial Process. IEEE Transactions on Industrial Electronics, 2013, 60, 3983-3990.	7.9	68
70	Optimization of Lorentz-force MEMS magnetometers using rarefied-gas-theory. , 2013, , .		2
71	Spectrally reconfigurable pixels for dual-color-mode imaging sensors. Applied Optics, 2012, 51, A91.	1.8	6
72	The Dependence of Fatigue in Microelectromechanical Systems on the Environment and the Industrial Packaging. IEEE Transactions on Industrial Electronics, 2012, 59, 4938-4948.	7.9	42

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73	Mechanical and Electronic Amplitude-Limiting Techniques in a MEMS Resonant Accelerometer. IEEE Sensors Journal, 2012, 12, 1719-1725.	4.7	38
74	Differential Fringe-Field MEMS Accelerometer. IEEE Transactions on Electron Devices, 2012, 59, 485-490.	3.0	15
75	A Versatile Instrument for the Characterization of Capacitive Micro- and Nanoelectromechanical Systems. IEEE Transactions on Instrumentation and Measurement, 2012, 61, 2012-2021.	4.7	26
76	Enhancing the Linear Range of MEMS Resonators for Sensing Applications. IEEE Sensors Journal, 2011, 11, 3202-3210.	4.7	17
77	Adaptation to the Scene in Color Imaging. IEEE Sensors Journal, 2011, 11, 1979-1986.	4.7	3
78	MEMS Motion Sensors Based on the Variations of the Fringe Capacitances. IEEE Sensors Journal, 2011, 11, 1069-1077.	4.7	25
79	Readout of MEMS capacitive sensors beyond the condition of pull-in instability. Sensors and Actuators A: Physical, 2011, 167, 374-384.	4.1	25
80	High Color Accuracy image acquisition in single capture. , 2011, , .		1
81	Monitoring fatigue damage growth in polysilicon microstructures under different loading conditions. Sensors and Actuators A: Physical, 2010, 159, 233-240.	4.1	18
82	Modelling and testing of a MEMS accelerometer controlled and read-out beyond the pull-in instability limit. Procedia Engineering, 2010, 5, 1067-1070.	1.2	4
83	In-plane and out-of-plane MEMS motion sensors based on fringe capacitances. Procedia Engineering, 2010, 5, 1392-1395.	1.2	5
84	Implementation of an interleaved image sensor by means of the filterless transverse field detector. Journal of Electronic Imaging, 2010, 19, 033013.	0.9	3
85	A Resonant Microaccelerometer With High Sensitivity Operating in an Oscillating Circuit. Journal of Microelectromechanical Systems, 2010, 19, 1140-1152.	2.5	139
86	White balance by tunable spectral responsivities. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2010, 27, 31.	1.5	9
87	A high sensitivity uniaxial resonant accelerometer. , 2010, , .		22
88	Real-time monitoring of the fatigue damage accumulation in polysilicon microstructures at different applied stresses. , 2009, , .		1
89	A new two-beam differential resonant micro accelerometer. , 2009, , .		9
90	The Transverse Field Detector: a CMOS active pixel sensor capable of on-line tuning of the spectral response. , 2009, , .		2

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91	Isolation of Highly Doped Implants on Low-Doped Active Layers for CMOS Radiation Drift Detectors. IEEE Transactions on Electron Devices, 2009, 56, 1767-1773.	3.0	10
92	Tunable Spectral Responses in a Color-Sensitive CMOS Pixel for Imaging Applications. IEEE Transactions on Electron Devices, 2009, 56, 2563-2569.	3.0	27
93	Low-noise real-time measurement of the position of movable structures in MEMS. Sensors and Actuators A: Physical, 2008, 148, 401-406.	4.1	27
94	The Transverse Field Detector (TFD): A Novel Color-Sensitive CMOS Device. IEEE Electron Device Letters, 2008, 29, 1306-1308.	3.9	31