L Guillermo Villanueva

List of Publications by Year
in descending order

103	4,568	117453	110170
papers	citations	34 h-index	64 g-index

108	108	108	4664
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Study of Thin Film LiNbO₃ Laterally Excited Bulk Acoustic Resonators. Journal of Microelectromechanical Systems, 2022, 31, 217-225.	1.7	35
2	A Resonant Graphene NEMS Vibrometer. Small, 2022, 18, .	5.2	5
3	Proof of Concept of a Graphene-Based Resonant Accelerometer. , 2021, , .		3
4	On cavitation inception and cavitating flow patterns in a multi-orifice microfluidic device with a functional surface. Physics of Fluids, 2021, 33, 032005.	1.6	11
5	Avoiding transduction-induced heating in suspended microchannel resonators using piezoelectricity. Microsystems and Nanoengineering, 2021, 7, 34.	3.4	11
6	Design and fabrication of a vigorous â€œcavitation-on-a-chipâ€•device with a multiple microchannel configuration. Microsystems and Nanoengineering, 2021, 7, 44.	3.4	12
7	Optimization of Inactive Regions of Lithium Niobate Shear Mode Resonator for Quality Factor Enhancement. Journal of Microelectromechanical Systems, 2021, 30, 369-374.	1.7	12
8	A formula for the admittance of laterally excited bulk wave resonators (XBARs). Electronics Letters, 2021, 57, 773-775.	0.5	9
9	Thin Film Devices for 5G Communications. , 2021, , .		10
10	Electron-beam lithography on M108Y and M35G chemically amplified DUV photoresists. Micro and Nano Engineering, 2021, 13, 100095.	1.4	1
11	Towards a N77 Electroacoustic Filter Using Thin Films of Crystalline Y-cut Lithium Niobate. , 2021, , .		2
12	Balancing of Coupled Piezoelectric NEMS Resonators. Frontiers in Mechanical Engineering, 2021, 7, .	0.8	0
13	Mechanics for Fluidics and Bio-Devices. Microtechnology and MEMS, 2020, , 139-196.	0.2	0
14	Engineered Lateral Roughness Element Implementation and Working Fluid Alteration to Intensify Hydrodynamic Cavitating Flows on a Chip for Energy Harvesting. Micromachines, 2020, 11, 49.	1.4	12
15	Frequency-scalable fabrication process flow for lithium niobate based Lamb wave resonators. Journal of Micromechanics and Microengineering, 2020, 30, 015008.	1.5	18
16	Directed Self-Assembly of Block Copolymers for the Fabrication of Functional Devices. Polymers, 2020, 12, 2432.	2.0	21
17	Frequency fluctuations in nanomechanical silicon nitride string resonators. Physical Review B, 2020, 102, .	1.1	22
18	Large Suspended Monolayer and Bilayer Graphene Membranes with Diameter up to 750â€‰Âµm. Scientific Reports, 2020, 10, 6426.	1.6	28

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19	Evidence of Smaller 1/F Noise in AlScN-Based Oscillators Compared to AlN-Based Oscillators. Journal of Microelectromechanical Systems, 2020, 29, 306-312.	1.7	9
20	Suspended micro/nano channel resonators: a review. Journal of Micromechanics and Microengineering, 2020, 30, 043001.	1.5	28
21	Manufacture and characterization of graphene membranes with suspended silicon proof masses for MEMS and NEMS applications. Microsystems and Nanoengineering, 2020, 6, 17.	3.4	46
22	On the effect of linear feedback and parametric pumping on a resonatorâ€™s frequency stability. New Journal of Physics, 2020, 22, 093049.	1.2	6
23	On â€œCavitation on Chipâ€•in Microfluidic Devices With Surface and Sidewall Roughness Elements. Journal of Microelectromechanical Systems, 2019, 28, 890-899.	1.7	17
24	Shape memory polymer resonators as highly sensitive uncooled infrared detectors. Nature Communications, 2019, 10, 4518.	5.8	31
25	Pyrolytic carbon resonators for micromechanical thermal analysis. Microsystems and Nanoengineering, 2019, 5, 58.	3.4	7
26	Fabrication Of Lithium Niobate Bulk Acoustic Resonator For 5G Filters. , 2019, , .		8
27	Optimum ratio of hydrophobic to hydrophilic areas of biphilic surfaces in thermal fluid systems involving boiling. International Journal of Heat and Mass Transfer, 2019, 135, 164-174.	2.5	98
28	Engineered acoustic mismatch for anchor loss control in contour mode resonators. Applied Physics Letters, 2019, 114, .	1.5	10
29	Modular interface and experimental setup for in-vacuum operation of microfluidic devices. Review of Scientific Instruments, 2019, 90, 045006.	0.6	5
30	Analysis of XBAR resonance and higher order spurious modes. , 2019, , .		23
31	5ÂGHz Band n79 wideband microacoustic filter using thin lithium niobate membrane. Electronics Letters, 2019, 55, 942-944.	0.5	66
32	Al_{0.83}Sc_{0.17}N Contour-Mode Resonators With Electromechanical Coupling in Excess of 4.5%. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 146-153.	1.7	38
33	5ÂGHz laterallyâ€excited bulkâ€wave resonators (XBARs) based on thin platelets of lithium niobate. Electronics Letters, 2019, 55, 98-100.	0.5	121
34	Hydrodynamic cavitation in microfluidic devices with roughened surfaces. Journal of Micromechanics and Microengineering, 2018, 28, 075016.	1.5	28
35	Fabrication of suspended microchannel resonators with integrated piezoelectric transduction. Microelectronic Engineering, 2018, 192, 83-87.	1.1	27
36	Observation of a phononic quadrupole topological insulator. Nature, 2018, 555, 342-345.	13.7	684

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37	Effective quality factor tuning mechanisms in micromechanical resonators. Applied Physics Reviews, 2018, 5, .	5.5	91
38	Intensifying cavitating flows in microfluidic devices with poly(vinyl alcohol) (PVA) microbubbles. Physics of Fluids, 2018, 30, .	1.6	25
39	Position and mode dependent optical detection back-action in cantilever beam resonators. Journal of Micromechanics and Microengineering, 2017, 27, 035006.	1.5	3
40	Asymmetrically coupled resonators for mass sensing. Applied Physics Letters, 2017, 111, .	1.5	39
41	Energy Harvesting in Microscale with Cavitating Flows. ACS Omega, 2017, 2, 6870-6877.	1.6	23
42	Release area confinement in Contour mode resonators. , 2017, , .		1
43	Grand Challenge in N/MEMS. Frontiers in Mechanical Engineering, 2016, 1, .	0.8	18
44	Anchor loss dependence on electrode materials in contour mode resonators. , 2016, , .		4
45	Resonance Frequency. , 2016, , 1-56.		4
46	Quality Factor. , 2016, , 57-90.		3
47	Transduction. , 2016, , 115-147.		0
48	Measurement and Noise. , 2016, , 149-172.		0
49	Fundamentals of Nanomechanical Resonators. , 2016, , .		129
50	Frequency fluctuations in silicon nanoresonators. Nature Nanotechnology, 2016, 11, 552-558.	15.6	183
51	Modelling the Size Effects on the Mechanical Properties of Micro/Nano Structures. Sensors, 2015, 15, 28543-28562.	2.1	66
52	Resistless nanofabrication by stencil lithography: A review. Microelectronic Engineering, 2015, 132, 236-254.	1.1	88
53	Demonstration of suppressed phonon tunneling losses in phononic bandgap shielded membrane resonators for high-Q optomechanics. Optics Express, 2014, 22, 6810.	1.7	49
54	Evidence of Surface Loss as Ubiquitous Limiting Damping Mechanism in SiN Micro- and Nanomechanical Resonators. Physical Review Letters, 2014, 113, 227201.	2.9	96

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55	Optical detection of radio waves through a nanomechanical transducer. Nature, 2014, 507, 81-85.	13.7	382
56	Single-layer graphene on silicon nitride micromembrane resonators. Journal of Applied Physics, 2014, 115, 054513.	1.1	33
57	Optical Detection of Radio Waves Through a Nanomechanical Transducer. , 2014, , .		3
58	Photothermal Analysis of Individual Nanoparticulate Samples Using Micromechanical Resonators. ACS Nano, 2013, 7, 6188-6193.	7.3	57
59	Fluid-mediated parallel self-assembly of polymeric micro-capsules for liquid encapsulation and release. Soft Matter, 2013, 9, 9931.	1.2	10
60	Nonlinearity in nanomechanical cantilevers. Physical Review B, 2013, 87, .	1.1	106
61	Surpassing Fundamental Limits of Oscillators Using Nonlinear Resonators. Physical Review Letters, 2013, 110, 177208.	2.9	143
62	Nonlinear Mode-Coupling in Nanomechanical Systems. Nano Letters, 2013, 13, 1622-1626.	4.5	110
63	Resistless Fabrication of Nanoimprint Lithography (NIL) Stamps Using Nano-Stencil Lithography. Micromachines, 2013, 4, 370-377.	1.4	8
64	All-stencil transistor fabrication on 3D silicon substrates. Journal of Micromechanics and Microengineering, 2012, 22, 095022.	1.5	7
65	Fast on-wafer electrical, mechanical, and electromechanical characterization of piezoresistive cantilever force sensors. Review of Scientific Instruments, 2012, 83, 015002.	0.6	11
66	Optimal operating points of oscillators using nonlinear resonators. Physical Review E, 2012, 86, 056207.	0.8	51
67	Compliant membranes improve resolution in full-wafer micro/nanostencil lithography. Nanoscale, 2012, 4, 773-778.	2.8	15
68	Ultra-low power hydrogen sensing based on a palladium-coated nanomechanical beam resonator. Nanoscale, 2012, 4, 5059.	2.8	40
69	Highly ordered palladium nanodot patterns for full concentration range hydrogen sensing. Nanoscale, 2012, 4, 1964.	2.8	35
70	High-Resolution Resistless Nanopatterning on Polymer and Flexible Substrates for Plasmonic Biosensing Using Stencil Masks. ACS Nano, 2012, 6, 5474-5481.	7.3	57
71	Stress-Induced Variations in the Stiffness of Micro- and Nanocantilever Beams. Physical Review Letters, 2012, 108, 236101.	2.9	89
72	Passive Phase Noise Cancellation Scheme. Physical Review Letters, 2012, 108, 264102.	2.9	39

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73	Conductivity of SUâ€8 Thin Films through Atomic Force Microscopy Nanoâ€Patterning. Advanced Functional Materials, 2012, 22, 1482-1488.	7.8	16
74	Reliable and Improved Nanoscale Stencil Lithography by Membrane Stabilization, Blurring, and Clogging Corrections. IEEE Nanotechnology Magazine, 2011, 10, 352-357.	1.1	26
75	Localized Ion Implantation Through Micro/Nanostencil Masks. IEEE Nanotechnology Magazine, 2011, 10, 940-946.	1.1	16
76	Metallic Nanodot Arrays by Stencil Lithography for Plasmonic Biosensing Applications. ACS Nano, 2011, 5, 844-853.	7.3	87
77	A Nanoscale Parametric Feedback Oscillator. Nano Letters, 2011, 11, 5054-5059.	4.5	132
78	50 nm thick AlN film-based piezoelectric cantilevers for gravimetric detection. Journal of Micromechanics and Microengineering, 2011, 21, 085023.	1.5	58
79	Sharp High-Aspect-Ratio AFM Tips Fabricated by a Combination of Deep Reactive Ion Etching and Focused Ion Beam Techniques. Journal of Nanoscience and Nanotechnology, 2010, 10, 497-501.	0.9	9
80	Mechanically tuneable microoptical structure based on PDMS. Sensors and Actuators A: Physical, 2010, 162, 260-266.	2.0	7
81	Silicon microcantilevers with MOSFET detection. Microelectronic Engineering, 2010, 87, 1245-1247.	1.1	18
82	Large arrays of chemo-mechanical nanoswitches for ultralow-power hydrogen sensing. Journal of Micromechanics and Microengineering, 2010, 20, 105019.	1.5	23
83	Fast and robust hydrogen sensors based on discontinuous palladium films on polyimide, fabricated on a wafer scale. Nanotechnology, 2010, 21, 505501.	1.3	32
84	The transition in hydrogen sensing behavior in noncontinuous palladium films. Applied Physics Letters, 2010, 97, .	1.5	43
85	Analysis of the blurring in stencil lithography. Nanotechnology, 2009, 20, 415303.	1.3	60
86	Stress and aging minimization in photoplastic AFM probes. Microelectronic Engineering, 2009, 86, 1226-1229.	1.1	18
87	Conduction in rectangular quasi-one-dimensional and two-dimensional random resistor networks away from the percolation threshold. Physical Review E, 2009, 80, 021104.	0.8	15
88	Nanobiosensors based on individual olfactory receptors. Analog Integrated Circuits and Signal Processing, 2008, 57, 197-203.	0.9	18
89	Resistivity measurements of gold wires fabricated by stencil lithography on flexible polymer substrates. Microelectronic Engineering, 2008, 85, 1108-1111.	1.1	29
90	Crystalline silicon cantilevers for piezoresistive detection of biomolecular forces. Microelectronic Engineering, 2008, 85, 1120-1123.	1.1	55

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91	Focused ion beam production of nanoelectrode arrays. Materials Science and Engineering C, 2008, 28, 777-780.	3.8	17
92	Etching of sub-micrometer structures through Stencil. Microelectronic Engineering, 2008, 85, 1010-1014.	1.1	25
93	Reusability of nanostencils for the patterning of Aluminum nanostructures by selective wet etching. Microelectronic Engineering, 2008, 85, 1237-1240.	1.1	29
94	A single nanotrench in a palladium microwire for hydrogen detection. Nanotechnology, 2008, 19, 125502.	1.3	61
95	3-D modulable PDMS-based microlens system. Optics Express, 2008, 16, 4918.	1.7	14
96	Metallic Nanowires by Full Wafer Stencil Lithography. Nano Letters, 2008, 8, 3675-3682.	4.5	101
97	Detection of bacteria based on the thermomechanical noise of a nanomechanical resonator: origin of the response and detection limits. Nanotechnology, 2008, 19, 035503.	1.3	63
98	DRIE based novel technique for AFM probes fabrication. Microelectronic Engineering, 2007, 84, 1132-1135.	1.1	13
99	Novel cantilever design with high control of the mechanical performance. Microelectronic Engineering, 2007, 84, 1292-1295.	1.1	4
100	Advances in the production, immobilization, and electrical characterization of olfactory receptors for olfactory nanobiosensor development. Sensors and Actuators B: Chemical, 2006, 116, 66-71.	4.0	42
101	Polymeric MOEMS Variable Optical Attenuator. IEEE Photonics Technology Letters, 2006, 18, 2425-2427.	1.3	14
102	Deep reactive ion etching and focused ion beam combination for nanotip fabrication. Materials Science and Engineering C, 2006, 26, 164-168.	3.8	13
103	Piezoresistive cantilevers in a commercial CMOS technology for intermolecular force detection. Microelectronic Engineering, 2006, 83, 1302-1305.	1.1	25