

Philip X-L Feng

List of Publications by Year in Descending Order

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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.

153
papers

4,577
citations

30
h-index

65
g-index

204
ext. papers

5,633
ext. citations

6.7
avg, IF

5.74
L-index

#	Paper	IF	Citations
153	Effects of Ion-Induced Displacement Damage on GaN/AlN MEMS Resonators. <i>IEEE Transactions on Nuclear Science</i> , 2022 , 1-1	1.7	1
152	Design of strongly nonlinear graphene nanoelectromechanical systems in quantum regime. <i>Applied Physics Letters</i> , 2022 , 120, 014001	3.4	0
151	A perspective on Γ -Ga ₂ O ₃ micro/nanoelectromechanical systems. <i>Applied Physics Letters</i> , 2022 , 120, 040502	3.4	2
150	Giant parametric amplification and spectral narrowing in atomically thin MoS ₂ nanomechanical resonators. <i>Applied Physics Reviews</i> , 2022 , 9, 011404	17.3	1
149	Thermal hysteresis controlled reconfigurable MoS nanomechanical resonators. <i>Nanoscale</i> , 2021 , 13, 18089-18095		
148	Resolving Mechanical Properties and Morphology Evolution of Free-Standing Ferroelectric Hf _{0.5} Zr _{0.5} O ₂ . <i>Advanced Engineering Materials</i> , 2021 , 23, 2101221	3.5	0
147	Ultrawide Frequency Tuning of Atomic Layer van der Waals Heterostructure Electromechanical Resonators. <i>Nano Letters</i> , 2021 , 21, 5508-5515	11.5	6
146	Cavity quantum electrodynamics design with single photon emitters in hexagonal boron nitride. <i>Applied Physics Letters</i> , 2021 , 118, 244003	3.4	3
145	Straining and Tuning Atomic Layer Nanoelectromechanical Resonators via Comb-Drive MEMS Actuators. <i>Advanced Materials Technologies</i> , 2021 , 6, 2000794	6.8	5
144	Single-crystal 3C-SiC-on-insulator platform for integrated quantum photonics. <i>Optics Express</i> , 2021 , 29, 1011-1022	3.3	4
143	Nanoelectromechanical Systems: Straining and Tuning Atomic Layer Nanoelectromechanical Resonators via Comb-Drive MEMS Actuators (Adv. Mater. Technol. 2/2021). <i>Advanced Materials Technologies</i> , 2021 , 6, 2170008	6.8	
142	Young's modulus and corresponding orientation in Γ -Ga ₂ O ₃ thin films resolved by nanomechanical resonators. <i>Applied Physics Letters</i> , 2021 , 119, 013505	3.4	6
141	Thermal Response and TC f of GaN/AlN Heterostructure Multimode Micro String Resonators From 0°C Up to 325°C . <i>Journal of Microelectromechanical Systems</i> , 2021 , 30, 521-529	2.5	2
140	Development of Dual-Frequency PMUT Arrays Based on Thin Ceramic PZT for Endoscopic Photoacoustic Imaging.. <i>Journal of Microelectromechanical Systems</i> , 2021 , 30, 770-782	2.5	3
139	Self-sustaining MoS ₂ nanomechanical oscillators and feedback cooling. <i>Applied Physics Letters</i> , 2021 , 119, 243506	3.4	0
138	Atomic Layer MoTe Field-Effect Transistors and Monolithic Logic Circuits Configured by Scanning Laser Annealing.. <i>ACS Nano</i> , 2021 , 15, 19733-19742	16.7	2
137	2020 ,		2

136	A MEMS lens scanner based on serpentine electrothermal bimorph actuators for large axial tuning. <i>Optics Express</i> , 2020 , 28, 23439-23453	3.3	6
135	Controlling Polarity of MoTe Transistors for Monolithic Complementary Logic Schottky Contact Engineering. <i>ACS Nano</i> , 2020 , 14, 1457-1467	16.7	12
134	Electrodynamic Force, Casimir Effect, and Stiction Mitigation in Silicon Carbide Nanoelectromechanical Switches. <i>Small</i> , 2020 , 16, e2005594	11	3
133	Determination of Elastic Modulus of Silicon Carbide (SiC) Thin Diaphragms via Mode-Dependent Duffing Nonlinear Resonances. <i>Journal of Microelectromechanical Systems</i> , 2020 , 29, 783-789	2.5	2
132	Electromechanical coupling and motion transduction in β Ga ₂ O ₃ vibrating channel transistors. <i>Applied Physics Letters</i> , 2020 , 117, 243504	3.4	3
131	Resonant Nanoelectromechanical Systems (NEMS): Progress and Emerging Frontiers 2020 ,		1
130	Imaging Multimode Vibrations in High-Frequency Aluminum Nitride Piezoelectric Nanomembrane Resonators 2019 ,		1
129	Study of Energy Loss Mechanisms in AlN-Based Piezoelectric Length Extensional-Mode Resonators. <i>Journal of Microelectromechanical Systems</i> , 2019 , 28, 619-627	2.5	10
128	Probing heavy ion radiation effects in silicon carbide (SiC) via 3D integrated multimode vibrating diaphragms. <i>Applied Physics Letters</i> , 2019 , 114, 101901	3.4	4
127	Beta gallium oxide (β Ga ₂ O ₃) nanoelectromechanical transducer for dual-modality solar-blind ultraviolet light detection. <i>APL Materials</i> , 2019 , 7, 022523	5.7	17
126	Hexagonal Boron Nitride Phononic Crystal Waveguides. <i>ACS Photonics</i> , 2019 , 6, 3225-3232	6.3	17
125	Very High-Frequency Silicon Carbide Microdisk Resonators With Multimode Responses in Water for Particle Sensing. <i>Journal of Microelectromechanical Systems</i> , 2019 , 28, 941-953	2.5	9
124	Mode-Dependent Anchor Loss in Silicon Carbide Micromechanical Disk Resonators 2019 ,		1
123	GaN/AlN Heterostructure Micromechanical Self-Sustained Oscillator for Middle Ultraviolet (MUV) Light Detection 2019 ,		2
122	Tracing and Resolving Microparticle Aquatic Mass Motion and Distribution on Multimode Silicon Carbide Microdisk Resonators 2019 ,		1
121	High-Frequency Hexagonal Boron Nitride (h-BN) Phononic Waveguides 2019 ,		1
120	Hexagonal boron nitride (h-BN) 2D nanoscale devices for classical and quantum signal transduction 2019 ,		1
119	Polarization sensitive black phosphorus nanomechanical resonators. <i>Optical Materials Express</i> , 2019 , 9, 526	2.6	6

118	Optical contrast signatures of hexagonal boron nitride on a device platform. <i>Optical Materials Express</i> , 2019 , 9, 1223	2.6	3
117	Electronic Applications of Black Phosphorus Thin Films. <i>ACS Symposium Series</i> , 2019 , 179-194	0.4	2
116	A Programmable Sustaining Amplifier for Flexible Multimode MEMS-Referenced Oscillators. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2019 , 66, 1405-1418	3.9	4
115	Free-Standing β -Ga ₂ O ₃ Thin Diaphragms. <i>Journal of Electronic Materials</i> , 2018 , 47, 973-981	1.9	3
114	Electrothermally Tunable Graphene Resonators Operating at Very High Temperature up to 1200 K. <i>Nano Letters</i> , 2018 , 18, 1678-1685	11.5	28
113	All-dry transferred single- and few-layer MoS ₂ field effect transistor with enhanced performance by thermal annealing. <i>Journal of Applied Physics</i> , 2018 , 123, 025701	2.5	14
112	All-electrical transduction of black phosphorus tunable 2D nanoelectromechanical resonators 2018 ,		3
111	Electrically tunable single- and few-layer MoS nanoelectromechanical systems with broad dynamic range. <i>Science Advances</i> , 2018 , 4, eaao6653	14.3	67
110	β -Ga ₂ O ₃ NEMS Oscillator for Real-Time Middle Ultraviolet (MUV) Light Detection. <i>IEEE Electron Device Letters</i> , 2018 , 39, 1230-1233	4.4	7
109	Gate-Tuned Temperature in a Hexagonal Boron Nitride-Encapsulated 2-D Semiconductor Device. <i>IEEE Transactions on Electron Devices</i> , 2018 , 65, 4068-4072	2.9	8
108	Discerning Black Phosphorus Crystal Orientation and Anisotropy by Polarized Reflectance Measurement. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 25629-25637	9.5	14
107	Frequency Tuning of Graphene Nanoelectromechanical Resonators via Electrostatic Gating. <i>Micromachines</i> , 2018 , 9,	3.3	4
106	Molybdenum disulfide (MoS ₂) nanoelectromechanical resonators with on-chip aluminum nitride (AlN) piezoelectric excitation 2018 ,		1
105	Atomic Layer GaSe/MoS ₂ van der Waals Heterostructure Photodiodes with Low Noise and Large Dynamic Range. <i>ACS Photonics</i> , 2018 , 5, 2693-2700	6.3	32
104	. <i>IEEE Transactions on Power Electronics</i> , 2018 , 33, 7326-7337	7.2	22
103	Investigation of Electrostatic Gating in Two-Dimensional Transitional Metal Dichalcogenide (TMDC) Field Effect Transistors (FETs) 2018 ,		1
102	A Temperature-Compensated Single-Crystal Silicon-on-Insulator (SOI) MEMS Oscillator with a CMOS Amplifier Chip. <i>Micromachines</i> , 2018 , 9,	3.3	4
101	2018 ,		2

100	Nanoelectromechanical Resonators Enabled by Si-Doped Semiconducting β -Ga ₂ O ₃ Nanobelts 2018 ,		1
99	Standard and inverse microscale Chladni figures in liquid for dynamic patterning of microparticles on chip. <i>Journal of Applied Physics</i> , 2018 , 124, 164901	2.5	7
98	Anisotropic Thermal Conductivity of Suspended Black Phosphorus Probed by Opto-Thermomechanical Resonance Spectromicroscopy. <i>Nano Letters</i> , 2018 , 18, 7683-7691	11.5	20
97	Synthesis and characterization of Ga ₂ O ₃ nanosheets on 3C-SiC-on-Si by low pressure chemical vapor deposition. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2017 , 35, 011208	1.3	8
96	Local-gate electrical actuation, detection, and tuning of atomic-layer MoS ₂ nanoelectromechanical resonators 2017 ,		3
95	Wide bandgap β -Ga ₂ O ₃ nanomechanical resonators for detection of middle-ultraviolet (MUV) photon radiation 2017 ,		1
94	Dynamic manipulation and patterning of breast cancer cells in biosolution 2017 ,		1
93	3C-SiC microdisk mechanical resonators with multimode resonances at radio frequencies. <i>Journal of Micromechanics and Microengineering</i> , 2017 , 27, 074001	2	3
92	Tuning Optical Signatures of Single- and Few-Layer MoS by Blown-Bubble Bulge Straining up to Fracture. <i>Nano Letters</i> , 2017 , 17, 4568-4575	11.5	45
91	The study of radiation effects in emerging micro and nano electro mechanical systems (M and NEMS). <i>Semiconductor Science and Technology</i> , 2017 , 32, 013005	1.8	21
90	Atomic layer MoS-graphene van der Waals heterostructure nanomechanical resonators. <i>Nanoscale</i> , 2017 , 9, 18208-18215	7.7	36
89	Effects of asymmetric Schottky contacts on photoresponse in tungsten diselenide (WSe ₂) phototransistor. <i>Journal of Applied Physics</i> , 2017 , 122, 085704	2.5	11
88	A battery-less, 255 nA quiescent current temperature sensor with voltage regulator fully powered by harvesting ambient vibrational energy 2017 ,		3
87	Hexagonal boron nitride nanomechanical resonators with spatially visualized motion. <i>Microsystems and Nanoengineering</i> , 2017 , 3, 17038	7.7	39
86	Carbon nanofiber high frequency nanomechanical resonators. <i>Nanoscale</i> , 2017 , 9, 11864-11870	7.7	5
85	mm-Scale and MEMS piezoelectric energy harvesters powering on-chip CMOS temperature sensing for IoT applications 2017 ,		3
84	MEMS/NEMS Devices and Applications. <i>Springer Handbooks</i> , 2017 , 395-429	1.3	7
83	Ultrawide Band Gap β -GaO Nanomechanical Resonators with Spatially Visualized Multimode Motion. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 43090-43097	9.5	23

82	2017,		4
81	Energetic ion radiation effects on a silicon carbide (SiC) multimode resonating diaphragm 2017,		2
80	Nanoelectromechanical Systems Secure FPGA and Security Primitives 2017, 307-326		
79	A programmable CMOS feedback IC for reconfigurable MEMS-referenced oscillators 2016,		3
78	Effects of β ray radiation on two-dimensional molybdenum disulfide (MoS ₂) nanomechanical resonators. <i>Applied Physics Letters</i> , 2016 , 108, 023106	3-4	33
77	Single- and few-layer WTe ₂ and their suspended nanostructures: Raman signatures and nanomechanical resonances. <i>Nanoscale</i> , 2016 , 8, 7854-60	7-7	37
76	Atmospheric-Pressure Plasma Reduction of Metal Cation-Containing Polymer Films to Produce Electrically Conductive Nanocomposites by an Electrodiffusion Mechanism. <i>Plasma Chemistry and Plasma Processing</i> , 2016 , 36, 295-307	3-6	18
75	Single- and few-layer transfer-printed CVD MoS ₂ nanomechanical resonators with enhancement by thermal annealing 2016,		3
74	Interferometric Motion Detection in Atomic Layer 2D Nanostructures: Visualizing Signal Transduction Efficiency and Optimization Pathways. <i>Scientific Reports</i> , 2016 , 6, 28923	4-9	11
73	All-electrical readout of atomically-thin MoS ₂ nanoelectromechanical resonators in the VHF band 2016,		6
72	2016,		1
71	Large-scale arrays of single- and few-layer MoS ₂ nanomechanical resonators. <i>Nanoscale</i> , 2016 , 8, 10677-85		25
70	Environmental Instability and Degradation of Single- and Few-Layer WTe Nanosheets in Ambient Conditions. <i>Small</i> , 2016 , 12, 5802-5808	11	69
69	Resolving and Tuning Mechanical Anisotropy in Black Phosphorus via Nanomechanical Multimode Resonance Spectromicroscopy. <i>Nano Letters</i> , 2016 , 16, 5394-400	11-5	48
68	Culturing and probing physical behavior of individual breast cancer cells on SiC microdisk resonators 2015,		7
67	High frequency torsional-mode nanomechanical resonators enabled by very thin nanocrystalline diamond diaphragms. <i>Diamond and Related Materials</i> , 2015 , 54, 19-25	3-5	4
66	Design of black phosphorus 2D nanomechanical resonators by exploiting the intrinsic mechanical anisotropy. <i>2D Materials</i> , 2015 , 2, 021001	5-9	34
65	Environmental, thermal, and electrical susceptibility of black phosphorus field effect transistors. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2015 , 33, 052202	1-3	18

64	NEMS switches: Opportunities and challenges in emerging IC technologies 2015 ,			3
63	Hexagonal boron nitride (h-BN) nanomechanical resonators with temperature-dependent multimode operations 2015 ,			2
62	Electromechanical coupling and design considerations in single-layer MoS2 suspended-channel transistors and resonators. <i>Nanoscale</i> , 2015 , 7, 19921-9	7.7		5
61	Black phosphorus nanoelectromechanical resonators vibrating at very high frequencies. <i>Nanoscale</i> , 2015 , 7, 877-84	7.7		105
60	Calibrating temperature coefficient of frequency (TCF) and thermal expansion coefficient (α) of MoS2 nanomechanical resonators 2015 ,			3
59	Two-dimensional MoS2 nanomechanical resonators freelysuspended on microtrenches on flexible substrate 2015 ,			3
58	Observation of strong temperature hysteresis in molybdenum disulfide (MoS2) vibrating nanomechanical resonators 2015 ,			1
57	. <i>IEEE Journal of the Electron Devices Society</i> , 2015 , 3, 323-335	2.3		7
56	Probing contact-mode characteristics of silicon nanowire electromechanical systems with embedded piezoresistive transducers. <i>Journal of Micromechanics and Microengineering</i> , 2015 , 25, 095014 ²			4
55	Capacitance-voltage (C-V) characterization in very thin suspended silicon nanowires for NEMS-CMOS integration in 160nm Silicon-on-Insulator (SOI) 2015 ,			1
54	Scanning electron microscopy characterization of structural features in suspended and non-suspended graphene by customized CVD growth. <i>Diamond and Related Materials</i> , 2015 , 54, 64-73	3.5		15
53	Embracing structural nonidealities and asymmetries in two-dimensional nanomechanical resonators. <i>Scientific Reports</i> , 2014 , 4, 3919	4.9		29
52	Temperature dependence of torsional and flexural modes in 6H-SiC microdisk resonators 2014 ,			3
51	Interrogating contact-mode silicon carbide (SiC) nanoelectromechanical switching dynamics by ultrasensitive laser interferometry 2014 ,			5
50	Exploring parametric resonance effects in bulk-mode CMOS-MEMS resonators 2014 ,			1
49	High-frequency SiC microdisk resonators operating in water with responses to H2O2 and NH4OH 2014 ,			1
48	Electrical breakdown of multilayer MoS2 field-effect transistors with thickness-dependent mobility. <i>Nanoscale</i> , 2014 , 6, 12383-90	7.7		63
47	Spatial mapping of multimode Brownian motions in high-frequency silicon carbide microdisk resonators. <i>Nature Communications</i> , 2014 , 5, 5158	17.4		52

46	Fabrication of electrically conductive metal patterns at the surface of polymer films by microplasma-based direct writing. <i>ACS Applied Materials & Interfaces</i> , 2014 , 6, 3099-104	9.5	36
45	Atomically-thin MoS2 resonators for pressure sensing 2014 ,		2
44	Dynamic range of atomically thin vibrating nanomechanical resonators. <i>Applied Physics Letters</i> , 2014 , 104, 103109	3.4	22
43	Biomedical Implantable Systems [History, Design, and Trends 2014 , 381-410		1
42	3C-SiC Nanobeam Optomechanical Crystals 2014 ,		2
41	Smart-cut 6H-silicon carbide (SiC) microdisk torsional resonators with sensitive photon radiation detection 2014 ,		6
40	Multimode characteristics of high-frequency CMOS-MEMS resonators 2014 ,		1
39	Two-dimensional nanoelectromechanical systems (2D NEMS) via atomically-thin semiconducting crystals vibrating at radio frequencies 2014 ,		7
38	High Q silicon carbide microdisk resonator. <i>Applied Physics Letters</i> , 2014 , 104, 181103	3.4	44
37	Multilayer MoS2 transistors enabled by a facile dry-transfer technique and thermal annealing. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2014 , 32, 061203	1.3	74
36	Air damping of atomically thin MoS2 nanomechanical resonators. <i>Applied Physics Letters</i> , 2014 , 105, 023104	3.4	48
35	6H-SiC microdisk torsional resonators in a smart-cut technology. <i>Applied Physics Letters</i> , 2014 , 104, 091906	3.4	9
34	Nano Carbon 1D and 2D Nanomechanical Resonators. <i>Materials Research Society Symposia Proceedings</i> , 2014 , 1693, 37		0
33	Silicon nanowire and cantilever electromechanical switches with integrated piezoresistive transducers 2013 ,		7
32	2013 ,		12
31	Dual-gate silicon carbide (SiC) lateral nanoelectromechanical switches 2013 ,		7
30	Polytype control of spin qubits in silicon carbide. <i>Nature Communications</i> , 2013 , 4, 1819	17.4	229
29	High frequency MoS2 nanomechanical resonators. <i>ACS Nano</i> , 2013 , 7, 6086-91	16.7	199

28	MEMS wireless implantable systems: historical review and perspectives 2013 , 401-423		1
27	Silicon carbide microdisk resonator. <i>Optics Letters</i> , 2013 , 38, 1304-6	3	44
26	High frequency top-down junction-less silicon nanowire resonators. <i>Nanotechnology</i> , 2013 , 24, 435203	3.4	11
25	Time-domain AC characterization of silicon carbide (SiC) nanoelectromechanical switches toward high-speed operations 2013 ,		7
24	A piezoresistive CMOS-MEMS resonator with high Q and low TCF 2013 ,		1
23	Nanomechanical non-volatile memory for computing at extreme 2013 ,		3
22	Silicon carbide (SiC) nanoelectromechanical switches and logic gates with long cycles and robust performance in ambient air and at high temperature 2013 ,		13
21	Extraction of a low-current discharge from a microplasma for nanoscale patterning applications at atmospheric pressure. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2012 , 30, 010603	1.3	10
20	Diaphragm-based microsystems using thin film silicon carbide 2012 ,		1
19	Pressure dependence of thin polycrystalline silicon carbide diaphragm resonators 2012 ,		2
18	High frequency graphene nanomechanical resonators and transducers 2012 ,		3
17	Focused Ion-Beam (FIB) Nanomachining of Silicon Carbide (SiC) Stencil Masks for Nanoscale Patterning. <i>Materials Science Forum</i> , 2012 , 717-720, 889-892	0.4	2
16	Amorphous Silicon Carbide (SiC) Thin Square Membranes for Resonant Micromechanical Devices. <i>Materials Science Forum</i> , 2012 , 717-720, 533-536	0.4	5
15	Characterization of Plasma Synthesized Vertical Carbon Nanofibers for Nanoelectronics Applications. <i>Materials Research Society Symposia Proceedings</i> , 2012 , 1451, 117-122		2
14	Surface adsorbate fluctuations and noise in nanoelectromechanical systems. <i>Nano Letters</i> , 2011 , 11, 1753-9	11.5	78
13	Silicon carbide (SiC) membrane nanomechanical resonators with multiple vibrational modes 2011 ,		6
12	Low voltage nanoelectromechanical switches based on silicon carbide nanowires. <i>Nano Letters</i> , 2010 , 10, 2891-6	11.5	133
11	Silicon carbide (SiC) top-down nanowire electromechanical resonators 2009 ,		6

10	Piezoelectric nanoelectromechanical resonators based on aluminum nitride thin films. <i>Applied Physics Letters</i> , 2009 , 95, 103111	3.4	129
9	Towards single-molecule nanomechanical mass spectrometry. <i>Nature Nanotechnology</i> , 2009 , 4, 445-50	28.7	492
8	Parametric nanomechanical amplification at very high frequency. <i>Nano Letters</i> , 2009 , 9, 3116-23	11.5	69
7	A self-sustaining ultrahigh-frequency nanoelectromechanical oscillator. <i>Nature Nanotechnology</i> , 2008 , 3, 342-6	28.7	215
6	Self-transducing silicon nanowire electromechanical systems at room temperature. <i>Nano Letters</i> , 2008 , 8, 1756-61	11.5	187
5	Very High Frequency Silicon Nanowire Electromechanical Resonators. <i>Nano Letters</i> , 2007 , 7, 1953-1959	11.5	328
4	Quality Factors and Energy Losses of Single-Crystal Silicon Nanowire Electromechanical Resonators 2007 ,		2
3	Phase Noise and Frequency Stability of Very-High Frequency Silicon Nanowire Nanomechanical Resonators 2007 ,		4
2	Zeptogram-scale nanomechanical mass sensing. <i>Nano Letters</i> , 2006 , 6, 583-6	11.5	789
1	VHF, UHF and microwave frequency nanomechanical resonators. <i>New Journal of Physics</i> , 2005 , 7, 247-247.9	11.9	86