Graphene Squeeze-Film Pressure Sensors

Nano Letters 16, 568-571 DOI: 10.1021/acs.nanolett.5b04251

Citation Report

#	Article	IF	CITATIONS
1	Self-assembled and intercalated film of reduced graphene oxide for a novel vacuum pressure sensor. Scientific Reports, 2016, 6, 38830.	3.3	9
2	Nanoelectromechanical systems based on low dimensional nanomaterials: Beyond carbon nanotube and graphene nanomechanical resonators—a brief review. , 2016, , .		1
3	Rapid Laser Printing of Paper-Based Multilayer Circuits. ACS Nano, 2016, 10, 8895-8903.	14.6	38
4	Microwave heating time dependent synthesis of various dimensional graphene oxide supported hierarchical ZnO nanostructures and its photoluminescence studies. Materials and Design, 2016, 111, 291-300.	7.0	52
5	Colorimetry Technique for Scalable Characterization of Suspended Graphene. Nano Letters, 2016, 16, 6792-6796.	9.1	23
6	Visualizing the Motion of Graphene Nanodrums. Nano Letters, 2016, 16, 2768-2773.	9.1	74
7	The initial stages of melting of graphene between 4000 K and 6000 K. Physical Chemistry Chemical Physics, 2017, 19, 3756-3762.	2.8	72
8	Probing the shape of a graphene nanobubble. Physical Chemistry Chemical Physics, 2017, 19, 7465-7470.	2.8	16
9	Very large scale characterization of graphene mechanical devices using a colorimetry technique. Nanoscale, 2017, 9, 7559-7564.	5.6	14
10	Nonlinear dynamic characterization of two-dimensional materials. Nature Communications, 2017, 8, 1253.	12.8	96
11	Ultra-sensitive graphene sensor for measuring high vacuum pressure. Scientific Reports, 2017, 7, 12604.	3.3	6
12	Optomechanics for thermal characterization of suspended graphene. Physical Review B, 2017, 96, .	3.2	38
13	Probing the chaotic boundary of a membrane resonator with nanowire arrays. Nanoscale, 2017, 9, 17524-17532.	5.6	4
14	High temperature gradient nanogap-Pirani micro-sensor with maximum sensitivity around atmospheric pressure. Applied Physics Letters, 2017, 111, .	3.3	12
15	One-step synthesis of graphene/Au nanoparticle composite by epoxy resin: electrocatalytic detection of H ₂ O ₂ and catalytic reduction of 4-nitrophenol. Materials Research Express, 2017, 4, 105012.	1.6	6
16	Mechanics of thermally fluctuating membranes. Npj 2D Materials and Applications, 2017, 1, .	7.9	41
17	Suspended graphene beams with tunable gap for squeeze-film pressure sensing. , 2017, , .		9
18	Static Capacitive Pressure Sensing Using a Single Graphene Drum. ACS Applied Materials & Interfaces, 2017, 9, 43205-43210.	8.0	47

ARTICLE IF CITATIONS # Nanomechanical Cantilever Array Sensors. Springer Handbooks, 2017, , 457-485. 19 0.6 13 Graphene gas osmometers. 2D Materials, 2017, 4, 011002. 4.4 23 Design of an ultra-low pressure sensor based on the growth of graphene on silicon dioxide surface., 21 2 2017, , . Amplitude calibration of 2D mechanical resonators by nonlinear optical transduction. Applied Physics Letters, 2017, 111, 253104. Experimental characterization of graphene by electrostatic resonance frequency tuning. Journal of 23 2.5 20 Applied Physics, 2017, 122, 234302. A Novel Method for Fabricating Wearable, Piezoresistive, and Pressure Sensors Based on Modified-Graphite/Polyurethane Composite Films. Materials, 2017, 10, 684. Room-Temperature Pressure-Induced Optically-Actuated Fabry-Perot Nanomechanical Resonator with 25 4.1 14 Multilayer Graphene Diaphragm in Air. Nanomaterials, 2017, 7, 366. Lateral Non-covalent Clamping of Graphene at the Edges Using a Lipid Scaffold. ACS Applied Materials & amp; Interfaces, 2018, 10, 11328-11332. 8.0 Van der Waals pressure sensors using reduced graphene oxide composites. Chemical Physics Letters, 27 2.6 5 2018, 697, 12-16. On-chip Heaters for Tension Tuning of Graphene Nanodrums. Nano Letters, 2018, 18, 2852-2858. 9.1 Lithography-based fabrication of nanopore arrays in freestanding SiN and graphene membranes. 29 2.6 64 Nanotechnology, 2018, 29, 145302. Graphene gas pumps., 2018,,. Graphene gas pumps. 2D Materials, 2018, 5, 031009. $\mathbf{31}$ 4.4 15 Size- and temperature-dependent bending rigidity of graphene using modal analysis. Carbon, 2018, 139, 334-341. Opto-thermally excited multimode parametric resonance in graphene membranes. Scientific Reports, 33 3.3 42 2018, 8, 9366. Perovskite LaBaCo2O5+l² (LBCO) single-crystal thin films for pressure sensing applications. Applied Physics Letters, 2018, 112, 173505. Piezoelectrically-driven capacitively-sensed squeeze-film pressure sensors., 2018, , . 35 1 Rupture of amorphous graphene<i>via</i>void formation. Physical Chemistry Chemical Physics, 2018, 2.8 20, 16966-16972.

ARTICLE IF CITATIONS # Laterally vibrating MEMS resonant vacuum sensor based on cavity-SOI process for evaluation of wide 37 2.0 21 range of sealed cavity pressure. Microsystem Technologies, 2019, 25, 487-497. Sealing Graphene Nanodrums. Nano Letters, 2019, 19, 5313-5318. 9.1 39 Design and Characterization of a CMOS MEMS Capacitive Squeeze-Film Pressure Sensor., 2019, , . 3 Discontinuous evolution of the structure of stretching polycrystalline graphene. Physical Review B, 2019, 100, . Mass measurement of graphene using quartz crystal microbalances. Applied Physics Letters, 2019, 115, . 41 3.3 10 Suspended Graphene Membranes with Attached Silicon Proof Masses as Piezoresistive 9.1 Nanoelectromechanical Systems Accelerometers. Nano Letters, 2019, 19, 6788-6799. Polymer-Assisted Pressure Sensor with Piezoresistive Suspended Graphene and Its Temperature 43 1.0 8 Characteristics. Nano, 2019, 14, 1950130. Squeeze film pressure sensors based on SiN membrane sandwiches. Sensors and Actuators A: Physical, 2019, 298, 111588. 4.1 44 45 Hexagonal Boron Nitride Cavity Optomechanics. Nano Letters, 2019, 19, 1343-1350. 9.1 32 High-Frequency Stochastic Switching of Graphene Resonators Near Room Temperature. Nano Letters, 9.1 39 2019, 19, 1282-1288. Modeling and experimental characterization of squeeze film effects in nonlinear capacitive circular 47 8.0 13 microplates. Mechanical Systems and Signal Processing, 2019, 127, 68-88. Graphene-coated microballs for a hyper-sensitive vacuum sensor. Scientific Reports, 2019, 9, 4910. 3.3 High performance and low-cost graphene vacuum pressure sensor based on one-step laser scribing. 49 3.3 12 Applied Physics Letters, 2019, 114, 2D Layered Materials: Synthesis, Nonlinear Optical Properties, and Device Applications. Laser and Photonics Reviews, 2019, 13, 1800327. 8.7 Nonlinear dynamic identification of graphene's elastic modulus via reduced order modeling of 51 4.8 17 atomistic simulations. Journal of the Mechanics and Physics of Solids, 2019, 122, 161-176. Mechanical properties of two-dimensional materials and their applications. Journal Physics D: Applied 2.8 Physics, 2019, 52, 083001. Design and Characterization of Capacitively Sensed Squeeze-Film Pressure Sensors. IEEE Sensors 53 4.7 4 Journal, 2019, 19, 1653-1660. A Resonant Gas Sensor Based on Multimode Excitation of a Buckled Microbeam. IEEE Sensors Journal, 54 2020, 20, 1778-1785.

	Сітаті	CITATION REPORT	
#	ARTICLE	IF	CITATIONS
55	Recent Progress of Miniature MEMS Pressure Sensors. Micromachines, 2020, 11, 56.	2.9	119
56	Ultrathin complex oxide nanomechanical resonators. Communications Physics, 2020, 3, .	5.3	24
57	A high-performance bionic pressure memory device based on piezo-OLED and piezo-memristor as luminescence-fish neuromorphic tactile system. Nano Energy, 2020, 77, 105120.	16.0	41
58	Broad-Range Fast Response Vacuum Pressure Sensors Based on a Graphene Nanocomposite with Hollow α-Fe ₂ O ₃ Microspheres. ACS Applied Electronic Materials, 2020, 2, 2429-2439.	4.3	11
59	Sensitive capacitive pressure sensors based on graphene membrane arrays. Microsystems and Nanoengineering, 2020, 6, 102.	7.0	44
60	Resonant nano-electromechanical systems from 2D materials. Europhysics Letters, 2020, 131, 58001.	2.0	10
61	Single-Layer MoS ₂ Mechanical Resonant Piezo-Sensors with High Mass Sensitivity. ACS Applied Materials & Interfaces, 2020, 12, 41991-41998.	8.0	39
62	Intrinsic Dissipation Due to Mode Coupling in Two-Dimensional-Material Resonators Revealed Through a Multiscale Approach. Physical Review Applied, 2020, 14, .	3.8	5
63	Membrane sandwich squeeze film pressure sensors. Journal of Applied Physics, 2020, 128, .	2.5	9
64	Development of CMOS Micromachined Capacitive Squeeze-Film Pressure Sensors. IEEE Sensors Journal, 2020, 20, 9698-9705.	4.7	5
65	Design and Characterization of a CMOS MEMS Capacitive Squeeze-Film Pressure Sensor with High Sensitivity. , 2020, , .		2
66	Frontiers of graphene and 2D material-based gas sensors for environmental monitoring. 2D Materials, 2020, 7, 032002.	4.4	103
67	Realization of Closed Cavity Resonator Formed by Graphene-PMMA Membrane for Sensing Audio Frequency. IEEE Sensors Journal, 2020, 20, 4618-4627.	4.7	9
68	Raman intensity oscillation of graphene over SiO2/Si micro-cavity. Japanese Journal of Applied Physics, 2020, 59, 028001.	1.5	1
69	Manufacture and characterization of graphene membranes with suspended silicon proof masses for MEMS and NEMS applications. Microsystems and Nanoengineering, 2020, 6, 17.	7.0	46
70	Tunable parametric amplification of a graphene nanomechanical resonator in the nonlinear regime. Nanotechnology, 2021, 32, 155203.	2.6	3
71	Graphene-based metal matrix nanocomposites: Recent development and challenges. Journal of Composite Materials, 2021, 55, 2369-2413.	2.4	26
72	Suspended graphene electromechanical switches for energy efficient electronics. Progress in Quantum Electronics, 2021, 76, 100315.	7.0	10

#	Article	IF	CITATIONS
73	Nonlinear forced vibrations of initially curved rectangular single layer graphene sheets: An analytical approach. Physica E: Low-Dimensional Systems and Nanostructures, 2021, 127, 114568.	2.7	6
74	NEMS Sensors Based on Suspended Graphene. , 2021, , .		0
75	Anomalous Flexural Elasticities of Graphene Membranes Unveiled by Manipulating Topology. Physical Review Letters, 2021, 126, 146101.	7.8	3
76	Efficient Structural Relaxation of Polycrystalline Graphene Models. Nanomaterials, 2021, 11, 1242.	4.1	3
77	Tunable coupling of two mechanical resonators by a graphene membrane. 2D Materials, 2021, 8, 035039.	4.4	8
78	Phonon lasing with an atomic thin membrane resonator at room temperature. Optics Express, 2021, 29, 16241.	3.4	4
79	Multi-layer graphene pirani pressure sensors. Nanotechnology, 2021, 32, 335501.	2.6	12
80	Proof of Concept: Glass-Membrane Based Differential Pressure Sensor. , 2021, , .		2
81	A Review on the Applications of Graphene in Mechanical Transduction. Advanced Materials, 2022, 34, e2101326.	21.0	59
82	Realization of a Graphene/PMMA Acoustic Capacitive Sensor Released by Silicon Dioxide Sacrificial Layer. ACS Applied Materials & amp; Interfaces, 2021, 13, 38792-38798.	8.0	13
83	Effect of PMMA Removal Methods on Opto-Mechanical Behaviors of Optical Fiber Resonant Sensor With Graphene Diaphragm. Photonic Sensors, 2022, 12, 140-151.	5.0	5
84	Precise measurement of the configurational energy of bent graphene membranes via three-dimensional force field spectroscopy. Physical Review B, 2021, 104, .	3.2	2
85	Squeeze-Film Effect on Atomically Thin Resonators in the High-Pressure Limit. Nano Letters, 2021, 21, 7617-7624.	9.1	5
86	Dynamics of 2D material membranes. 2D Materials, 2021, 8, 042001.	4.4	41
87	Dissipation from Interlayer Friction in Graphene Nanoelectromechanical Resonators. Nano Letters, 2021, 21, 8058-8065.	9.1	14
88	Single pixel wide gamut dynamic color modulation based on a graphene micromechanical system. Optics Express, 2021, 29, 32491.	3.4	4
89	A Flexible Pressure Sensor Based on PDMS-CNTs Film for Multiple Applications. IEEE Sensors Journal, 2022, 22, 3033-3039.	4.7	14
90	Design and applications of graphene-based flexible and wearable physical sensing devices. 2D Materials, 2021, 8, 022001.	4.4	16

#	Article	IF	CITATIONS
91	Variational method enabling simplified solutions to the linearized Boltzmann equation for oscillatory gas flows. Physical Review Fluids, 2018, 3, .	2.5	3
92	Graphene as a nanoelectromechanical reference piezoresistor. Physical Review Research, 2020, 2, .	3.6	7
93	Three-dimensional-printed Fabry–Perot interferometer on an optical fiber tip for a gas pressure sensor. Applied Optics, 2020, 59, 2173.	1.8	39
94	Nanoelectromechanical Sensors Based on Suspended 2D Materials. Research, 2020, 2020, 8748602.	5.7	93
95	Photon-excited carriers and emission of graphene in terahertz radiation fields. Wuli Xuebao/Acta Physica Sinica, 2018, 67, 027801.	0.5	1
96	In Situ Measurement of the Kinetic Friction of Si Nanowires on SiC Substrates in SEM with a Microprobe. , 2021, , .		0
97	Deformation Behavior and Mechanical Properties of Suspended Double‣ayer Graphene Ribbons Induced by Large Atomic Force Microscopy Indentation Forces. Advanced Engineering Materials, 0, , 2100826.	3.5	1
98	A Review on Graphene-Based Nano-Electromechanical Resonators: Fabrication, Performance, and Applications. Micromachines, 2022, 13, 215.	2.9	13
99	Giant parametric amplification and spectral narrowing in atomically thin MoS2 nanomechanical resonators. Applied Physics Reviews, 2022, 9, .	11.3	7
100	A Highly-Sensitive Pressure Sensor Based on Percolative Nanoparticle Arrays Formed by Dewetting Effect. , 2022, , .		2
101	Self-Sealing Complex Oxide Resonators. Nano Letters, 2022, 22, 1475-1482.	9.1	10
102	Research progress of electromechanical graphene resonant sensors. Wuli Xuebao/Acta Physica Sinica, 2022, 71, 126801.	0.5	1
103	Effect of induced current loss on quality factor of graphene resonators. AIP Advances, 2022, 12, .	1.3	1
104	Green syntheses of graphene and its applications in internet of things (IoT)—a status review. Nanotechnology, 2022, 33, 322003.	2.6	7
105	Towards Repeatable, Scalable Graphene Integrated Micro-Nano Electromechanical Systems (MEMS/NEMS). Micromachines, 2022, 13, 27.	2.9	6
106	A High-Sensitivity Resonant Magnetic Sensor Based on Graphene Nanomechanical Resonator. Micromachines, 2022, 13, 628.	2.9	0
107	Enhancing the sensitivity and selectivity of pyrene-based sensors for detection of small gaseous molecules via destructive quantum interference. Physical Review B, 2022, 105, .	3.2	2
108	A Resonant Graphene NEMS Vibrometer. Small, 2022, 18, .	10.0	5

#	Article	IF	CITATIONS
109	Gram-Scale Preparation of Black Phosphorus Nanosheets via Shock-Induced Phase Transformation. Journal of Materials Chemistry C, 0, , .	5.5	1
110	Highly Sensitive Hydrogen Sensor Based on an Optical Driven Nanofilm Resonator. ACS Applied Materials & Interfaces, 2022, 14, 29357-29365.	8.0	7
112	Parallel Measurements of Vibrational Modes in a Few-Layer Graphene Nanomechanical Resonator Using Software-Defined Radio Dongles. IEEE Access, 2022, 10, 69981-69991.	4.2	1
113	Nano-optomechanical Resonators for Sensitive Pressure Sensing. ACS Applied Materials & Interfaces, 2022, 14, 39211-39219.	8.0	8
114	The Effect of Annealing and Optical Radiation Treatment on Graphene Resonators. Nanomaterials, 2022, 12, 2725.	4.1	4
115	Nanomechanical Resonators: Toward Atomic Scale. ACS Nano, 2022, 16, 15545-15585.	14.6	55
116	Bending and stretching behavior of graphene structures using continuum models calibrated with modal analysis. Applied Mathematical Modelling, 2023, 114, 466-487.	4.2	7
117	Gas permeation rates of ultrathin graphite sealed SiO2 cavities. Journal of Chemical Physics, 2022, 157, .	3.0	1
118	Resonant frequency decay in graphene nanomechanical resonators fabricated by focused ion beam lithography. , 2023, , .		0
119	The fast–slow light transitions induced by Fano resonance in multiple nanomechanical resonators. Optics and Laser Technology, 2023, 161, 109242.	4.6	6
120	A Closed Cavity Ultrasonic Resonator Formed by Graphene/PMMA Membrane for Acoustic Application. Micromachines, 2023, 14, 810.	2.9	1
121	Very high-frequency, gate-tunable CrPS ₄ nanomechanical resonator with single mode. Optics Letters, 2023, 48, 2571.	3.3	2
122	Composite Nanofilm Based Resonator with Optical actuation for Hydrogen Sensing. , 2022, , .		0
123	Anisotropic rheology and friction of suspended graphene. Physical Review Materials, 2023, 7, .	2.4	3
124	Triple Fano resonance-induced slow light in multiple-mode coupling nanomechanical resonators. Results in Physics, 2023, 50, 106563.	4.1	0
125	Electrostatic frequency tuning of flat and curved microplates. Nonlinear Dynamics, 0, , .	5.2	0
126	High-Sensitivity Graphene MOEMS Resonant Pressure Sensor. ACS Applied Materials & Interfaces, 2023, 15, 30479-30485.	8.0	3
127	Pressure-induced nonlinear resonance frequency changes for extracting Young's modulus of nanodrums. Nonlinear Dynamics, 2023, 111, 14751-14761.	5.2	0

	Сітат	ion Report	
#	Article	IF	Citations
128	Nanoelectromechanical systems from two-dimensional materials. Applied Physics Reviews, 2023, 10, .	11.3	4
129	High-Sensitivity Force Sensors Based on Novel Materials. Advanced Devices & Instrumentation, 2023, 4, .	6.5	2
130	Photothermal Actuated Miniature Graphene Resonator for High-Sensitivity Pressure Detection. IEEE Sensors Journal, 2023, 23, 22332-22339.	4.7	0
131	A Review of Acoustic Devices Based on Suspended 2D Materials and Their Composites. Advanced Functional Materials, 2024, 34, .	14.9	Ο
132	An On-Chip Nanoscale Vacuum Sensor Based on Electroformed Silicon Oxide. IEEE Electron Device Letters, 2023, 44, 1760-1763.	3.9	0
133	A highly sensitive pressure sensor based on Ag-graphene-PDMS film and its applications. Journal of Reinforced Plastics and Composites, 0, , .	3.1	0
134	Micromachined Mechanical Resonant Sensors: From Materials, Structural Designs to Applications. Advanced Materials Technologies, 2024, 9, .	5.8	0
135	Industrially Scalable Piezoresistive Smart-Textile Sensor for Flexible Electronics Application. ACS Sensors, 2023, 8, 4801-4809.	7.8	Ο
136	Research on Fabrication of Phononic Crystal Soft-Supported Graphene Resonator. Nanomaterials, 2024, 14, 130.	4.1	0
138	A MEMS Friction Gauge For High Vacuum Measurement. IEEE Transactions on Electron Devices, 2024, 71, 1231-1237.	, 3.0	0
139	Pressure sensing in Ti3C2Tx MXene photothermal actuated nanomechanical resonator. , 2023, , .		0
140	A MEMS Resonant Pressure Sensor Based on 2D Graphene Material. , 2023, , .		0
141	Effect of air-loading on the performance limits of graphene microphones. Applied Physics Letters, 2024, 124, .	3.3	0
142	Modeling and Simulation of Graphene-Based Transducers in NEMS Accelerometers. Micromachines, 2024, 15, 409.	2.9	0
143	Self-Calibrating Gas Pressure Sensor with a 10-Decade Measurement Range. ACS Photonics, 2024, 11, 1438-1446.	6.6	0