Soonjae Pyo

List of Publications by Year in descending order

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100 papers	2,594 citations	218677 26 h-index	197818 49 g-index
104 all docs	104 docs citations	104 times ranked	3356 citing authors

#	Article	IF	Citations
1	Recent Progress in Flexible Tactile Sensors for Humanâ€Interactive Systems: From Sensors to Advanced Applications. Advanced Materials, 2021, 33, e2005902.	21.0	216
2	A Highly Sensitive Hydrogen Sensor with Gas Selectivity Using a PMMA Membrane-Coated Pd Nanoparticle/Single-Layer Graphene Hybrid. ACS Applied Materials & Interfaces, 2015, 7, 3554-3561.	8.0	184
3	MoS 2 gas sensor functionalized by Pd for the detection of hydrogen. Sensors and Actuators B: Chemical, 2017, 250, 686-691.	7.8	161
4	Ultrasensitive Strain Sensor Based on Separation of Overlapped Carbon Nanotubes. Small, 2019, 15, e1805120.	10.0	144
5	Multiâ€Layered, Hierarchical Fabricâ€Based Tactile Sensors with High Sensitivity and Linearity in Ultrawide Pressure Range. Advanced Functional Materials, 2019, 29, 1902484.	14.9	130
6	A high power density miniaturized microbial fuel cell having carbon nanotube anodes. Journal of Power Sources, 2015, 273, 823-830.	7.8	112
7	Molecularly Engineered Surface Triboelectric Nanogenerator by Self-Assembled Monolayers (METS). Chemistry of Materials, 2015, 27, 4749-4755.	6.7	111
8	Flexible, Transparent, Sensitive, and Crosstalkâ€Free Capacitive Tactile Sensor Array Based on Graphene Electrodes and Air Dielectric. Advanced Electronic Materials, 2018, 4, 1700427.	5.1	100
9	Development of a flexible three-axis tactile sensor based on screen-printed carbon nanotube-polymer composite. Journal of Micromechanics and Microengineering, 2014, 24, 075012.	2.6	78
10	Aligned Carbon Nanotube Arrays for Degradationâ€Resistant, Intimate Contact in Micromechanical Devices. Advanced Materials, 2011, 23, 2231-2236.	21.0	59
11	Highly sensitive hydrogen sensor based on suspended, functionalized single tungsten nanowire bridge. Sensors and Actuators B: Chemical, 2009, 136, 92-98.	7.8	56
12	Flexible and multi-directional piezoelectric energy harvester for self-powered human motion sensor. Smart Materials and Structures, 2018, 27, 035001.	3.5	55
13	A flexible hybrid strain energy harvester using piezoelectric and electrostatic conversion. Smart Materials and Structures, 2014, 23, 045040.	3.5	51
14	Ultrasonic Bonding for MEMS Sealing and Packaging. IEEE Transactions on Advanced Packaging, 2009, 32, 461-467.	1.6	49
15	Light-assisted recovery of reacted MoS₂ for reversible NO₂ sensing at room temperature. Nanotechnology, 2019, 30, 355504.	2.6	48
16	Highly Sensitive Detection of Benzene, Toluene, and Xylene Based on CoPP-Functionalized TiO₂ Nanoparticles with Low Power Consumption. ACS Sensors, 2020, 5, 754-763.	7.8	48
17	Heterogeneous Integration of Carbon-Nanotube-Graphene for High-Performance, Flexible, and Transparent Photodetectors. Small, 2017, 13, 1700918.	10.0	47
18	A High-Efficiency DCâ€“DC Boost Converter for a Miniaturized Microbial Fuel Cell. IEEE Transactions on Power Electronics, 2015, 30, 2041-2049.	7.9	45

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19	Flexible Energy Harvester with Piezoelectric and Thermoelectric Hybrid Mechanisms for Sustainable Harvesting. International Journal of Precision Engineering and Manufacturing - Green Technology, 2019, 6, 691-698.	4.9	45
20	A Fully Transparent, Flexible, Sensitive, and Visibleâ€Blind Ultraviolet Sensor Based on Carbon Nanotubeâ€“Graphene Hybrid. Advanced Electronic Materials, 2019, 5, 1800737.	5.1	44
21	Microfabricated Torsional Actuators Using Self-Aligned Plastic Deformation of Silicon. Journal of Microelectromechanical Systems, 2006, 15, 553-562.	2.5	43
22	Deformable Carbon Nanotube-Contact Pads for Inertial Microswitch to Extend Contact Time. IEEE Transactions on Industrial Electronics, 2012, 59, 4914-4920.	7.9	43
23	Large-Area, Crosstalk-Free, Flexible Tactile Sensor Matrix Pixelated by Mesh Layers. ACS Applied Materials & Interfaces, 2021, 13, 12259-12267.	8.0	41
24	Piezoelectric energy harvester converting strain energy into kinetic energy for extremely low frequency operation. Applied Physics Letters, 2014, 104, .	3.3	33
25	All-textile wearable triboelectric nanogenerator using pile-embroidered fibers for enhancing output power. Smart Materials and Structures, 2020, 29, 055026.	3.5	30
26	Suspended GaN nanowires as NO2 sensor for high temperature applications. Analyst, The, 2013, 138, 2432.	3.5	26
27	Humidityâ€Resistant, Fabricâ€Based, Wearable Triboelectric Energy Harvester by Treatment of Hydrophobic Selfâ€Assembled Monolayers. Advanced Materials Technologies, 2018, 3, 1800048.	5.8	26
28	Monolithic 2-D scanning mirror using self-aligned angular vertical comb drives. IEEE Photonics Technology Letters, 2005, 17, 2307-2309.	2.5	25
29	Integrated Carbon Nanotube Array as Dry Adhesive for Highâ€Temperature Silicon Processing. Advanced Materials, 2011, 23, 4285-4289.	21.0	25
30	Engineered neural circuits for modeling brain physiology and neuropathology. Acta Biomaterialia, 2021, 132, 379-400.	8.3	25
31	Batch-processed carbon nanotube wall as pressure and flow sensor. Nanotechnology, 2010, 21, 105502.	2.6	23
32	A highly sensitive flexible strain sensor based on the contact resistance change of carbon nanotube bundles. Nanotechnology, 2016, 27, 205502.	2.6	22
33	Suspended CoPP-ZnO nanorods integrated with micro-heaters for highly sensitive VOC detection. Sensors and Actuators B: Chemical, 2018, 264, 249-254.	7.8	21
34	Humidity-resistant triboelectric energy harvester using electrospun PVDF/PU nanofibers for flexibility and air permeability. Nanotechnology, 2019, 30, 275401.	2.6	21
35	All Paperâ€Based, Multilayered, Inkjetâ€Printed Tactile Sensor in Wide Pressure Detection Range with High Sensitivity. Advanced Materials Technologies, 2022, 7, 2100428.	5.8	21
36	Sensitivity enhancement in photoionization detector using microelectrodes with integrated 1D nanostructures. Sensors and Actuators B: Chemical, 2019, 288, 618-624.	7.8	20

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37	Frequency Up-Conversion Hybrid Energy Harvester Combining Piezoelectric and Electromagnetic Transduction Mechanisms. International Journal of Precision Engineering and Manufacturing - Green Technology, 2022, 9, 241-251.	4.9	20
38	Thickness-, alignment- and defect-tunable growth of carbon nanotube arrays using designed mechanical loads. Carbon, 2014, 66, 126-133.	10.3	19
39	Development of MEMS Multi-Mode Electrostatic Energy Harvester Based on the SOI Process. Micromachines, 2017, 8, 51.	2.9	18
40	Simple fabrication method of silicon/tungsten oxide nanowires heterojunction for NO2 gas sensors. Sensors and Actuators B: Chemical, 2018, 265, 522-528.	7.8	18
41	Multidirectional flexible force sensors based on confined, self-adjusting carbon nanotube arrays. Nanotechnology, 2018, 29, 055501.	2.6	17
42	Improved photo- and chemical-responses of graphene via porphyrin-functionalization for flexible, transparent, and sensitive sensors. Nanotechnology, 2019, 30, 215501.	2.6	17
43	Highly Sensitive Flexible Tactile Sensors in Wide Sensing Range Enabled by Hierarchical Topography of Biaxially Strained and Capillaryâ€Densified Carbon Nanotube Bundles. Small, 2021, 17, e2105334.	10.0	16
44	Fabrication of suspended nanowires for highly sensitive gas sensing. Sensors and Actuators B: Chemical, 2019, 284, 362-368.	7.8	14
45	Using Confined Self-Adjusting Carbon Nanotube Arrays as High-Sensitivity Displacement Sensing Element. ACS Applied Materials & Interfaces, 2014, 6, 10181-10187.	8.0	13
46	Patterned Carbon Nanotube Bundles as Stretchable Strain Sensors for Human Motion Detection. ACS Applied Nano Materials, 2020, 3, 11408-11415.	5.0	13
47	Vertically aligned carbon nanotube arrays as vertical comb structures for electrostatic torsional actuator. Microelectronic Engineering, 2012, 98, 405-408.	2.4	12
48	Investigation of Interfacial Adhesion between the Top Ends of Carbon Nanotubes. ACS Applied Materials & Interfaces, 2014, 6, 6598-6605.	8.0	12
49	Humidity sensing characteristics of focused ion beam-induced suspended single tungsten nanowire. Sensors and Actuators B: Chemical, 2014, 194, 38-44.	7.8	11
50	Piezoelectric and electromagnetic hybrid energy harvester using two cantilevers for frequency up-conversion. , 2017, , .		11
51	Integration of a Carbon Nanotube Network on a Microelectromechanical Switch for Ultralong Contact Lifetime. ACS Applied Materials & Interfaces, 2019, 11, 18617-18625.	8.0	11
52	Detection of Mixed BTEX With Suppressed Reaction Specificity Using Tin Oxide Nanoparticles Functionalized by Multi-Metalloporphyrins. IEEE Sensors Journal, 2019, 19, 11791-11796.	4.7	11
53	Low-Temperature Selective Growth of Tungsten Oxide Nanowires by Controlled Nanoscale Stress Induction. Scientific Reports, 2015, 5, 18265.	3.3	8
54	Fabrication of fine-pored polydimethylsiloxane using an isopropyl alcohol and water mixture for adjustable mechanical, optical, and thermal properties. RSC Advances, 2021, 11, 18061-18067.	3.6	8

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55	Recent Progress in Flexible Tactile Sensors for Humanâ€Interactive Systems: From Sensors to Advanced Applications (Adv. Mater. 47/2021). Advanced Materials, 2021, 33, .	21.0	8
56	Frequency Tuning of Nanowire Resonator Using Electrostatic Spring Effect. IEEE Transactions on Magnetics, 2009, 45, 2332-2335.	2.1	7
57	Fabrication of carbon nanotube-coated fabric for highly sensitive pressure sensor. , 2017, , .		6
58	Carbon-Doped WO₃ Nanostructure Based on CNT Sacrificial Template and its Application to Highly Sensitive NO₂ Sensor. IEEE Sensors Journal, 2020, 20, 5705-5711.	4.7	6
59	Resonant Frequency Tuning of Torsional Microscanner by Mechanical Restriction using MEMS Actuator. , 2009, , .		5
60	Highly sensitive cantilever type chemo-mechanical hydrogen sensor based on contact resistance of self-adjusted carbon nanotube arrays. Sensors and Actuators B: Chemical, 2014, 197, 414-421.	7.8	5
61	Flexible piezoelectric strain energy harvester responsive to multi-directional input forces and its application to self-powered motion sensor. , 2017, , .		5
62	Integration of Gold Nanoparticleâ€“Carbon Nanotube Composite for Enhanced Contact Lifetime of Microelectromechanical Switches with Very Low Contact Resistance. ACS Applied Materials & Interfaces, 2021, 13, 16959-16967.	8.0	5
63	Microswitch with self-assembled carbon nanotube arrays for high current density and reliable contact. , 2011, , .		4
64	Defective carbon nanotube-silicon heterojunctions for photodetector and chemical sensor with improved responses. Journal of Micromechanics and Microengineering, 2015, 25, 115004.	2.6	4
65	Carbon nanotubes network contact lubrication for highly reliable MEMS switch. , 2017, , .		4
66	Highly sensitive detection of VOC using impact ionization induced by photoelectron. , 2017, , .		4
67	Micromachined Resonant Frequency Tuning Unit for Torsional Resonator. Micromachines, 2017, 8, 342.	2.9	4
68	Self-Powered Wind Sensor Based on Triboelectric Generator with Curved Flap Array for Multi-Directional Wind Speed Detection. , 2020, , .		4
69	Ethanol-sensing properties of cobalt porphyrin-functionalized titanium dioxide nanoparticles as chemiresistive materials that are integrated into a low power microheater. Micro and Nano Systems Letters, 2022, 10, .	3.7	4
70	Bidirectional Electrothermal Electromagnetic Torsional Microactuators. , 2009, , .		3
71	A novel accelerometer based on contact resistance of integrated carbon nanotubes. , 2011, , .		3
72	Acid-sensitive pH sensor using electrolysis and a microfluidic channel for read-out amplification. RSC Advances, 2014, 4, 39634.	3.6	3

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73	Flexible and transparent NO<inf>2</inf> sensor using functionalized MoS<inf>2</inf> with light-enhanced response. , 2017, , .		3
74	Impact Ionization Induced by Accelerated Photoelectrons for Wide-Range and Highly Sensitive Detection of Volatile Organic Compounds at Room Temperature. ACS Applied Materials & Interfaces, 2019, 11, 20491-20499.	8.0	3
75	Length controlled in-plane synthesis of aligned carbon nanotube array by micromechanical spring. , 2012, , .		2
76	Low-voltage and low-power field-ionization gas sensor based on micro-gap between suspended silver nanowires electrodes for toluene detection. , 2017, , .		2
77	Wind-powered triboelectric energy harvester using curved flapping film array. , 2017, , .		2
78	Development of a Highly Stretchable Strain Sensor Based on Patterned and Rolled Carbon Nanotubes. , 2019, , .		2
79	A Textile-Based Resistive Tactile Sensor with High Sensitivity in a Wide Pressure Range. , 2019, , .		2
80	CoPP-Functionalized TIO₂ Nanoparticles for Highly Sensitive and Reliable VOC Detection. , 2019, , .		2
81	Crosstalk-Free Mesh-Embedded Tactile Sensor Array with Electrically Isolated Sensing Cells. , 2020, , .		2
82	Toluene sensing characteristics of tin oxide-based gas sensor deposited with various amounts of metalloporphyrin. Micro and Nano Systems Letters, 2022, 10, .	3.7	2
83	Transparent and flexible toluene sensor with enhanced sensitivity using adsorption catalyst-functionalized graphene. , 2013, , .		1
84	Triboelectric energy harvester using frequency up-conversion to generate from extremely low frequency strain inputs. , 2017, , .		1
85	Improvement of photoresponse in MoS<inf>2</inf> BY SnO<inf>2</inf>-functionalization and its application to flexible and transparaent photodetector. , 2018, , .		1
86	Suspended Alumina Membrane for GA2O3 Gas Sensor with Enhanced Lifetime at High-Temperature. , 2020, , .		1
87	Microelectromechanical Switch with Carbon Nanotube Arrays for High-Temperature Operation. , 2020, , .		1
88	Washable, Inkjet-Printed Flexible Tactile Sensor on Fabric with Temperature Tolerance. , 2022, , .		1
89	Thermally Driven Bimorph Nano Actuators Fabricated using Focused Ion Beam Chemical Vapor Deposition. , 2007, , .		0
90	Carbon Nanotubes: Integrated Carbon Nanotube Array as Dry Adhesive for Highâ€Temperature Silicon Processing (Adv. Mater. 37/2011). Advanced Materials, 2011, 23, 4208-4208.	21.0	0

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91	An electrodynamic preconcentrator-integrated thermoelectric biosensor chip for continuous monitoring. , 2011, , .		0
92	Continuously latchable shuttle using carbon nanotubes on sidewall surfaces. , 2012, , .		0
93	Integrated carbon nanotube arrays for reliable contact in electromechanical memory device. , 2012, , .		0
94	Carbon nanotube based anodes in a miniaturized microbial fuel cell (MFC) towards high power density and efficiency. , 2012, , .		0
95	Variable capacitor with switching mechanism for wide tuning range. , 2014, , .		0
96	Fabrication of suspended nanowires using suspended carbon nanotubes as template for gas sensing. , 2017, , .		0
97	Gold-Decorated Carbon Nanotube Network as Contact Surface of MEM Switch for Extended Lifetime. , 2019, , .		0
98	Highly Transparent Porous Polydimethylsiloxane with Micro-Size Pores Using Water and Isopropanol Mixture. , 2020, , .		0
99	Location-specific fabrication of suspended nanowires using electrospun fibers on designed microstructure. Nanotechnology, 2021, 32, 355602.	2.6	0
100	Vertically-Aligned Carbon Nanotubes-Embedded PDMS Microstructures For Flexible Tactile Sensor Array with High Sensitivity and Durability. , 2022, , .		0