Sangtae Kim

List of Publications by Year
in descending order

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91 papers	5,120 citations	147801 31 h-index	85541 71 g-index
92 all docs	92 docs citations	92 times ranked	8758 citing authors

#	Article	IF	Citations
1	Voltage, stability and diffusion barrier differences between sodium-ion and lithium-ion intercalation materials. Energy and Environmental Science, 2011, 4, 3680.	30.8	1,236
2	Injectable, Cellular-Scale Optoelectronics with Applications for Wireless Optogenetics. Science, 2013, 340, 211-216.	12.6	1,010
3	Microstructured elastomeric surfaces with reversible adhesion and examples of their use in deterministic assembly by transfer printing. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 17095-17100.	7.1	356
4	Flexible piezoelectric polymer-based energy harvesting system for roadway applications. Applied Energy, 2017, 197, 222-229.	10.1	167
5	A comparison of destabilization mechanisms of the layered NaxMO2 and LixMO2 compounds upon alkali de-intercalation. Physical Chemistry Chemical Physics, 2012, 14, 15571.	2.8	158
6	Electrochemically driven mechanical energy harvesting. Nature Communications, 2016, 7, 10146.	12.8	123
7	Pressure-induced changes in the conductivity of AlGaNâ•GaN high-electron mobility-transistor membranes. Applied Physics Letters, 2004, 85, 2962-2964.	3.3	111
8	Multiple stiffening effects of nanoscale knobs on human red blood cells infected with Plasmodium falciparum malaria parasite. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6068-6073.	7.1	108
9	Pitting and Passivation of Al Alloys and Alâ€Based Metal Matrix Composites. Journal of the Electrochemical Society, 1990, 137, 78-82.	2.9	96
10	A highly-efficient, concentrating-photovoltaic/thermoelectric hybrid generator. Nano Energy, 2017, 37, 242-247.	16.0	91
11	Piezoelectric polymer-based roadway energy harvesting via displacement amplification module. Applied Energy, 2018, 216, 741-750.	10.1	86
12	Synthesis of Numerous Edge Sites in MoS₂ via SiO₂ Nanorods Platform for Highly Sensitive Gas Sensor. ACS Applied Materials & Interfaces, 2018, 10, 31594-31602.	8.0	79
13	A comprehensive study on the mechanism of ferroelectric phase formation in hafnia-zirconia nanolaminates and superlattices. Applied Physics Reviews, 2019, 6, .	11.3	73
14	Heterojunction Based on Rh-Decorated WO₃ Nanorods for Morphological Change and Gas Sensor Application Using the Transition Effect. Chemistry of Materials, 2019, 31, 207-215.	6.7	71
15	Reversible transition between the polar and antipolar phases and its implications for wake-up and fatigue in HfO2-based ferroelectric thin film. Nature Communications, 2022, 13, 645.	12.8	66
16	Free-electron creation at the 60Â° twin boundary in Bi2Te3. Nature Communications, 2016, 7, 12449.	12.8	59
17	Dispersion of carbon nanotubes in aluminum improves radiation resistance. Nano Energy, 2016, 22, 319-327.	16.0	55
18	Scalable fabrication of flexible thin-film batteries for smart lens applications. Nano Energy, 2018, 53, 225-231.	16.0	53

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19	Alternative interpretations for decreasing voltage with increasing charge in ferroelectric capacitors. Scientific Reports, 2016, 6, 20825.	3.3	43
20	Automatic resonance tuning mechanism for ultra-wide bandwidth mechanical energy harvesting. Nano Energy, 2020, 77, 104986.	16.0	43
21	Nanogap-controlled Pd coating for hydrogen sensitive switches and hydrogen sensors. Sensors and Actuators B: Chemical, 2018, 255, 1841-1848.	7.8	42
22	Small-Satellite Synthetic Aperture Radar for Continuous Global Biospheric Monitoring: A Review. Remote Sensing, 2020, 12, 2546.	4.0	42
23	Optimization of Reconfigurable Satellite Constellations Using Simulated Annealing and Genetic Algorithm. Sensors, 2019, 19, 765.	3.8	41
24	Morphological Evolution Induced through a Heterojunction of W-Decorated NiO Nanoigloos: Synergistic Effect on High-Performance Gas Sensors. ACS Applied Materials & Interfaces, 2019, 11, 7529-7538.	8.0	39
25	Laser-irradiated inclined metal nanocolumns for selective, scalable, and room-temperature synthesis of plasmonic isotropic nanospheres. Journal of Materials Chemistry C, 2018, 6, 6038-6045.	5.5	37
26	Rational Design for Optimizing Hybrid Thermo-triboelectric Generators Targeting Human Activities. ACS Energy Letters, 2019, 4, 2069-2074.	17.4	37
27	Vertically integrated submicron amorphous-In2Ga2ZnO7 thin film transistor using a low temperature process. Applied Physics Letters, 2012, 100, 203510.	3.3	34
28	Performance Variation According to Device Structure and the Source/Drain Metal Electrode of a-IGZO TFTs. IEEE Transactions on Electron Devices, 2012, 59, 3357-3363.	3.0	34
29	Ionicâ€Activated Chemiresistive Gas Sensors for Roomâ€Temperature Operation. Small, 2019, 15, e1902065.	10.0	34
30	Metal-free, flexible triboelectric generator based on MWCNT mesh film and PDMS layers. Applied Surface Science, 2018, 442, 693-699.	6.1	33
31	Design principles for coupled piezoelectric and electromagnetic hybrid energy harvesters for autonomous sensor systems. Nano Energy, 2020, 75, 104921.	16.0	33
32	Machine Learning and Scaling Laws for Prediction of Accurate Adsorption Energy. Journal of Physical Chemistry A, 2020, 124, 247-254.	2.5	32
33	Downsizing gas sensors based on semiconducting metal oxide: Effects of electrodes on gas sensing properties. Sensors and Actuators B: Chemical, 2017, 248, 949-956.	7.8	31
34	Self-powered flexible touch sensors based on PZT thin films using laser lift-off. Sensors and Actuators A: Physical, 2017, 261, 288-294.	4.1	30
35	Hydrogen-induced reversible changes in drain current in Sc2O3/AlGaN/GaN high electron mobility transistors. Applied Physics Letters, 2004, 84, 4635-4637.	3.3	29
36	Carbon-free Mn-doped LiFePO4 cathode for highly transparent thin-film batteries. Journal of Power Sources, 2019, 434, 226713.	7.8	29

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37	Thermodynamic stability of various phases of zinc tin oxides from ab initio calculations. Journal of Materials Chemistry C, 2013, 1, 6364.	5.5	28
38	Theoretical and experimental studies on the electronic structure of crystalline and amorphous ZnSnO3 thin films. Applied Physics Letters, 2013, 102, .	3.3	25
39	Versatile approaches to tune a nanocolumnar structure for optimized electrical properties of In2O3 based gas sensor. Sensors and Actuators B: Chemical, 2017, 248, 894-901.	7.8	23
40	Reduction of the Hysteresis Voltage in Atomicâ€Layerâ€Deposited pâ€Type SnO Thinâ€Film Transistors by Adopting an Al₂O₃ Interfacial Layer. Advanced Electronic Materials, 2019, 5, 1900371.	5.1	23
41	Analysis of Machining Stability for a Parallel Machine Tool. Mechanics Based Design of Structures and Machines, 2003, 31, 509-528.	4.7	20
42	Effect of oxygen vacancy on the structural and electronic characteristics of crystalline Zn₂SnO₄. Journal of Materials Chemistry C, 2014, 2, 8381-8387.	5.5	19
43	Mechanical Fatigue Resistance of Piezoelectric PVDF Polymers. Micromachines, 2018, 9, 503.	2.9	19
44	Ferroelectric switching in bilayer 3R MoS2 via interlayer shear mode driven by nonlinear phononics. Scientific Reports, 2019, 9, 14919.	3.3	19
45	Study on the defects in metalâ€“organic chemical vapor deposited zinc tin oxide thin films using negative bias illumination stability analysis. Journal of Materials Chemistry C, 2013, 1, 6695.	5.5	18
46	The Electrical Properties of Asymmetric Schottky Contact Thin-Film Transistors with Amorphous-$hbox{In}_{2}hbox{Ga}_{2}hbox{ZnO}_{7}$. IEEE Transactions on Electron Devices, 2013, 60, 1128-1135.	3.0	18
47	Resistance switching behavior of atomic layer deposited SrTiO3 film through possible formation of Sr2Ti6O13 or Sr1Ti11O20 phases. Scientific Reports, 2016, 6, 20550.	3.3	17
48	Equilibrium crystal shape of GaAs and InAs considering surface vibration and new (111)B reconstruction: ab-initio thermodynamics. Scientific Reports, 2019, 9, 1127.	3.3	16
49	Surface reconstruction of InAs (001) depending on the pressure and temperature examined by density functional thermodynamics. Scientific Reports, 2017, 7, 10691.	3.3	14
50	Atomistic Understanding of the Ferroelectric Properties of a Wurtziteâ€Structure (AlN)_n/(ScN)_m Superlattice. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2100009.	2.4	14
51	Growth and Characterization of BeO Thin Films Grown by Atomic Layer Deposition Using H₂O and O₃ as Oxygen Sources. Journal of Physical Chemistry C, 2017, 121, 17498-17504.	3.1	13
52	Flexible-detachable dual-output sensors of fluid temperature and dynamics based on structural design of thermoelectric materials. Nano Energy, 2018, 50, 733-743.	16.0	13
53	Strong stress-composition coupling in lithium alloy nanoparticles. Nature Communications, 2019, 10, 3428.	12.8	13
54	Phase Stability in Processing and Microstructure Control in High Temperature Mo-Si-B Alloys. Materials Research Society Symposia Proceedings, 2000, 646, 20.	0.1	12

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55	Reduction of Charge Trapping in $hbox{HfO}_{2}$ Film on Ge Substrates by Atomic Layer Deposition of Various Passivating Interfacial Layers. IEEE Transactions on Electron Devices, 2012, 59, 2350-2356.	3.0	12
56	Double-layered vertically integrated amorphous-In2Ga2ZnO7 thin-film transistor. Applied Physics Letters, 2013, 103, .	3.3	12
57	Double layered dielectric elastomer by vapor encapsulation casting for highly deformable and strongly adhesive triboelectric materials. Nano Energy, 2019, 62, 144-153.	16.0	12
58	Li alloy-based non-volatile actuators. Nano Energy, 2019, 57, 653-659.	16.0	11
59	Ab initio study on the structural characteristics of amorphous Zn2SnO4. Applied Physics Letters, 2013, 103, 252102.	3.3	10
60	Correct extraction of frequency dispersion in accumulation capacitance in InGaAs metal-insulator-semiconductor devices. Electronic Materials Letters, 2016, 12, 768-772.	2.2	9
61	Atomic engineering of metastable BeO6 octahedra in a rocksalt framework. Applied Surface Science, 2020, 501, 144280.	6.1	8
62	Atomistic prediction on the configuration- and temperature-dependent dielectric constant of Be_{0.25}Mg_{0.75}O superlattice as a high-Îdielectric layer. Journal of Materials Chemistry C, 2021, 9, 851-859.	5.5	7
63	Annealing temperature stability of Ir and Ni-based Ohmic contacts on AlGaNâ•GaN high electron mobility transistors. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2004, 22, 2635.	1.6	6
64	A novel class of oxynitrides stabilized by nitrogen dimer formation. Scientific Reports, 2018, 8, 14471.	3.3	6
65	Sun-synchronous repeat ground tracks and other useful orbits for future space missions. Aeronautical Journal, 2020, 124, 917-939.	1.6	6
66	Scalable excitatory synaptic circuit design using floating gate based leaky integrators. Scientific Reports, 2017, 7, 17579.	3.3	5
67	Atomistic interpretation of the ac-dc crossover frequency in crystalline and glassy ionic conductors. Journal of Chemical Physics, 2018, 148, 204507.	3.0	5
68	Optimal Endurance and Range of Electric Aircraft with Battery Degradation. Transactions of the Japan Society for Aeronautical and Space Sciences, 2020, 63, 62-65.	0.7	5
69	Predicting ligand-dependent nanocrystal shapes of InP quantum dots and their electronic structures. Applied Surface Science, 2022, 578, 151972.	6.1	5
70	ATOMIC STRUCTURE OF A {001} SURFACE OF THE ALLOY FeRh. Surface Review and Letters, 1999, 06, 133-136.	1.1	4
71	Orientation-dependent structural and electronic properties of Ge/a-GeO₂ interfaces: first-principles study. Journal Physics D: Applied Physics, 2019, 52, 155101.	2.8	4
72	Inâ€Depth Analysis of One Selectorâ€“One Resistor Crossbar Array for Its Writing and Reading Operations for Hardware Neural Network with Finite Wire Resistance. Advanced Intelligent Systems, 0, , 2100174.	6.1	4

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73	The Contrasting Impacts of the Al₂O₃ and Y₂O₃ Insertion Layers on the Crystallization of ZrO₂ Films for Dynamic Random Access Memory Capacitors. Advanced Electronic Materials, 2022, 8, .	5.1	4
74	Atomic and electronic structures of a-ZnSnO3/a-SiO2interface byab initiomolecular dynamics simulations. Physica Status Solidi (B): Basic Research, 2016, 253, 1765-1770.	1.5	3
75	Role of the Shortâ€Range Order in Amorphous Oxide on MoS₂/aâ€SiO₂ and MoS₂/aâ€HfO₂ Interfaces. Physica Status Solidi (B): Basic Research, 2019, 256, 1900002.	1.5	3
76	Tunneling Properties of the Charge Carriers through Sub-2-nm-Thick Oxide in Ge/a - GeO2/Ge Structures Using the First-Principles Scattering-State Method. Physical Review Applied, 2019, 11, .	3.8	3
77	Tunable current duration in triboelectric generators via capacitive air gaps. International Journal of Energy Research, 2021, 45, 5619-5628.	4.5	3
78	Fully implantable and resorbable wireless medical devices for postsurgical infection abatement. , 2015, , .		2
79	Recessedâ€channel reconfigurable fieldâ€effect transistor. Electronics Letters, 2016, 52, 1640-1642.	1.0	2
80	Impact of Battery Degradation on Lifetime Ranges of Electric Aircraft and Unmanned Underwater Vehicles. , 2019, , .		2
81	Space-based Earth remote sensing: Part 1. Satellite orbit theory. Satellite Oceanography and Meteorology, 2023, 3, .	0.2	2
82	Simulation studies of domain wall width changes in various nanocontact shapes. , 2006, , .		0
83	Effects of post-annealing on magnetic properties and microstructure of CoCrPt-SiO2 perpendicular magnetic recording media. , 2006, , .		0
84	Reliable resistive switching device based on bi-layers of ZrO<inf>x</inf>/HfO<inf>x</inf> films. , 2009, , .		0
85	In-situ observation of microstructural changes and electro-mechanical behaviors on ZnO nanowires under thermal condition. Microscopy and Microanalysis, 2012, 18, 752-753.	0.4	0
86	Characterization of optical properties of the dislocations in GaN films using transmission electron microscopy cathodoluminescence. Microscopy and Microanalysis, 2012, 18, 1840-1841.	0.4	0
87	Allâ€electron scalar relativistic calculations of atomic hydrogen adsorption on cuboâ€octahedron Pt₅₅ nanoparticles. Physica Status Solidi (B): Basic Research, 2012, 249, 2145-2149.	1.5	0
88	A First-Principles Study on the Oxygen Adsorption and Interface Characteristics with a-GeO2 of Ge[001] Nanowire. Journal of the Korean Physical Society, 2019, 75, 283-287.	0.7	0
89	Sensors/Biosensors: Ionic-Activated Chemiresistive Gas Sensors for Room-Temperature Operation (Small 40/2019). Small, 2019, 15, 1970214.	10.0	0
90	Two/Three-dimensional Battery Pack Topologies and Their Internal Short Circuit Detectability. , 2019, , .		0

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91	Ultrahigh thermopower waves in carbon nanotubeâ€antimony telluride composites enabled by thermal decomposition of formaldehyde. International Journal of Energy Research, 0, , .	4.5	0