Seung-Hyub Baek

List of Publications by Year
in descending order

122	6,585	117625 34	64796 79
papers	citations	h-index	g-index

122	122	122	8620
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Electrical control of antiferromagnetic domains in multiferroic BiFeO3 films at room temperature. Nature Materials, 2006, 5, 823-829.	27.5	1,160
2	Spontaneous Vortex Nanodomain Arrays at Ferroelectric Heterointerfaces. Nano Letters, 2011, 11, 828-834.	9.1	419
3	Ferroelastic switching for nanoscale non-volatile magnetoelectric devices. Nature Materials, 2010, 9, 309-314.	27.5	407
4	Giant Piezoelectricity on Si for Hyperactive MEMS. Science, 2011, 334, 958-961.	12.6	394
5	Domain Dynamics During Ferroelectric Switching. Science, 2011, 334, 968-971.	12.6	320
6	Domain Engineering for Enhanced Ferroelectric Properties of Epitaxial (001) BiFeO Thin Films. Advanced Materials, 2009, 21, 817-823.	21.0	277
7	Thick lead-free ferroelectric films with high Curie temperatures through nanocomposite-induced strain. Nature Nanotechnology, 2011, 6, 491-495.	31.5	220
8	High Output Piezo/Triboelectric Hybrid Generator. Scientific Reports, 2015, 5, 9309.	3.3	216
9	Revealing the role of defects in ferroelectric switching with atomic resolution. Nature Communications, 2011, 2, 591.	12.8	214
10	Template engineering of Co-doped BaFe2As2 single-crystal thin films. Nature Materials, 2010, 9, 397-402.	27.5	185
11	Powerful curved piezoelectric generator for wearable applications. Nano Energy, 2015, 13, 174-181.	16.0	159
12	Atomic-scale mechanisms of ferroelastic domain-wall-mediated ferroelectric switching. Nature Communications, 2013, 4, .	12.8	152
13	Wafer-scale growth of MoS₂thin films by atomic layer deposition. Nanoscale, 2016, 8, 10792-10798.	5.6	139
14	Ferroelastic domain switching dynamics under electrical and mechanical excitations. Nature Communications, 2014, 5, 3801.	12.8	135
15	The Nature of Polarization Fatigue in BiFeO₃. Advanced Materials, 2011, 23, 1621-1625.	21.0	127
16	Epitaxial integration of perovskite-based multifunctional oxides on silicon. Acta Materialia, 2013, 61, 2734-2750.	7.9	95
17	A highly-efficient, concentrating-photovoltaic/thermoelectric hybrid generator. Nano Energy, 2017, 37, 242-247.	16.0	91
18	Fabrication of high-performance p-type thin film transistors using atomic-layer-deposited SnO films. Journal of Materials Chemistry C, 2017, 5, 3139-3145.	5.5	81

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19	Phaseâ€Transition Temperatures of Strained Singleâ€Crystal SrRuO₃ Thin Films. Advanced Materials, 2010, 22, 759-762.	21.0	78
20	Active Control of Ferroelectric Switching Using Defectâ€Dipole Engineering. Advanced Materials, 2012, 24, 6490-6495.	21.0	76
21	Synthesis of SnS Thin Films by Atomic Layer Deposition at Low Temperatures. Chemistry of Materials, 2017, 29, 8100-8110.	6.7	68
22	Precision Interface Engineering of an Atomic Layer in Bulk Bi₂Te₃ Alloys for High Thermoelectric Performance. ACS Nano, 2019, 13, 7146-7154.	14.6	66
23	Free-electron creation at the 60Â° twin boundary in Bi2Te3. Nature Communications, 2016, 7, 12449.	12.8	59
24	Direct Observations of Retention Failure in Ferroelectric Memories. Advanced Materials, 2012, 24, 1106-1110.	21.0	56
25	Giant piezoelectricity in PMN-PT thin films: Beyond PZT. MRS Bulletin, 2012, 37, 1022-1029.	3.5	55
26	Metallicity in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>LaTiO</mml:mtext></mml:mrow><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math> films induced by lattice deformation. Physical Review B, 2010, 81, .	3.2	54
27	All villi-like metal oxide nanostructures-based chemiresistive electronic nose for an exhaled breath analyzer. Sensors and Actuators B: Chemical, 2018, 257, 295-302.	7.8	51
28	Nonâ€Volatile Control of 2DEG Conductivity at Oxide Interfaces. Advanced Materials, 2013, 25, 4612-4617.	21.0	47
29	Gate-tunable giant nonreciprocal charge transport in noncentrosymmetric oxide interfaces. Nature Communications, 2019, 10, 4510.	12.8	44
30	Self-assembled oxide nanopillars in epitaxial BaFe2As2 thin films for vortex pinning. Applied Physics Letters, 2011, 98, .	3.3	42
31	Continuous Control of Charge Transport in Biâ€Deficient BiFeO₃ Films Through Local Ferroelectric Switching. Advanced Functional Materials, 2012, 22, 4962-4968.	14.9	40
32	Structural approaches for enhancing output power of piezoelectric polyvinylidene fluoride generator. Nano Energy, 2016, 22, 514-523.	16.0	38
33	Nonlocal Spin Diffusion Driven by Giant Spin Hall Effect at Oxide Heterointerfaces. Nano Letters, 2017, 17, 36-43.	9.1	37
34	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
35	SnO 2 thin films grown by atomic layer deposition using a novel Sn precursor. Applied Surface Science, 2014, 320, 188-194.	6.1	35
36	Growth and thermoelectric properties of Bi2Te3 films deposited by modified MOCVD. Journal of Crystal Growth, 2012, 346, 17-21.	1.5	31

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37	Low-temperature wafer-scale synthesis of two-dimensional SnS₂. Nanoscale, 2018, 10, 17712-17721.	5.6	30
38	Design and Experimental Investigation of Thermoelectric Generators for Wearable Applications. Advanced Materials Technologies, 2017, 2, 1600292.	5.8	28
39	Effect of spark plasma sintering conditions on the thermoelectric properties of (Bi0.25Sb0.75)2Te3 alloys. Journal of Alloys and Compounds, 2016, 678, 396-402.	5.5	25
40	Tailoring the domain structure of epitaxial BiFeO3 thin films. Current Opinion in Solid State and Materials Science, 2014, 18, 39-45.	11.5	24
41	Enhancement of Mechanical Hardness in SnO_xN_y with a Dense High-Pressure Cubic Phase of SnO₂. Chemistry of Materials, 2016, 28, 7051-7057.	6.7	23
42	Impurity-free, mechanical doping for the reproducible fabrication of the reliable n-type Bi2Te3-based thermoelectric alloys. Acta Materialia, 2018, 150, 153-160.	7.9	23
43	Structural Consequences of Ferroelectric Nanolithography. Nano Letters, 2011, 11, 3080-3084.	9.1	22
44	Impact of parasitic thermal effects on thermoelectric property measurements by Harman method. Review of Scientific Instruments, 2014, 85, 045108.	1.3	21
45	Control of the initial growth in atomic layer deposition of Pt films by surface pretreatment. Nanotechnology, 2015, 26, 304003.	2.6	21
46	Enhanced piezoelectric properties of vertically aligned single-crystalline NKN nano-rod arrays. Scientific Reports, 2015, 5, 10151.	3.3	20
47	Wafer-Scale, Conformal, and Low-Temperature Synthesis of Layered Tin Disulfides for Emerging Nonplanar and Flexible Electronics. ACS Applied Materials & Interfaces, 2020, 12, 2679-2686.	8.0	20
48	Hardening of Biâ€“Te based alloys by dispersing B4C nanoparticles. Acta Materialia, 2015, 97, 68-74.	7.9	19
49	Harman Measurements for Thermoelectric Materials and Modules under Non-Adiabatic Conditions. Scientific Reports, 2016, 6, 39131.	3.3	19
50	Interface Engineering for Extremely Large Grains in Explosively Crystallized TiO₂ Films Grown by Low-Temperature Atomic Layer Deposition. Chemistry of Materials, 2017, 29, 2046-2054.	6.7	19
51	Sn doping in thermoelectric Bi2Te3 films by metal-organic chemical vapor deposition. Applied Surface Science, 2015, 353, 232-237.	6.1	18
52	Thermoelectric Properties of Indium-Selenium Nanocomposites Prepared by Mechanical Alloying and Spark Plasma Sintering. Journal of Electronic Materials, 2012, 41, 1354-1359.	2.2	17
53	Atomic layer deposition of SnO2 thin films using tetraethyltin and H2O2. Ceramics International, 2019, 45, 20600-20605.	4.8	17
54	Dramatic enhancement of the saturation magnetization of a sol-gel synthesized Y 3 Fe 5 O 12 by a mechanical pressing process. Journal of Alloys and Compounds, 2017, 711, 693-697.	5.5	16

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55	Mechanically Robust, Stretchable Solar Absorbers with Submicron-Thick Multilayer Sheets for Wearable and Energy Applications. ACS Applied Materials & Interfaces, 2017, 9, 18061-18068.	8.0	16
56	Domain engineering in BiFeO3 thin films. Current Applied Physics, 2017, 17, 688-703.	2.4	16
57	Full Range Dielectric Characteristics of Calcium Copper Titanate Thin Films Prepared by Continuous Composition-Spread Sputtering. ACS Combinatorial Science, 2014, 16, 478-484.	3.8	15
58	Nonlinearity in the high-electric-field piezoelectricity of epitaxial BiFeO3 on SrTiO3. Applied Physics Letters, 2012, 100, 062906.	3.3	14
59	Tunable conductivity at LaAlO3/SrxCa1â^'xTiO3 (0â€‰â‰€â€‰xâ€‰â‰€â€‰1) heterointerfaces. Applied Physics Letters, 2013, 102, 012903.	3.3	14
60	Enhancement of Initial Growth of ZnO Films on Layer-Structured Bi₂Te₃ by Atomic Layer Deposition. Chemistry of Materials, 2014, 26, 6448-6453.	6.7	14
61	Effect of Heat Treatment on the Thermoelectric Properties of Bismuthâ€“Antimonyâ€“Telluride Prepared by Mechanical Deformation and Mechanical Alloying. Journal of Electronic Materials, 2014, 43, 2255-2261.	2.2	14
62	Wide-temperature (up to 100ÂÂ°C) operation of thermostable vanadium oxide based microbolometers with Ti/MgF2 infrared absorbing layer for long wavelength infrared (LWIR) detection. Applied Surface Science, 2021, 547, 149142.	6.1	14
63	Strain-assisted, low-temperature synthesis of high-performance thermoelectric materials. Physical Chemistry Chemical Physics, 2014, 16, 3529.	2.8	13
64	Electric-field-induced Shift in the Threshold Voltage in LaAlO3/SrTiO3 Heterostructures. Scientific Reports, 2015, 5, 8023.	3.3	13
65	Selective growth and texturing of VO2(B) thin films for high-temperature microbolometers. Journal of the European Ceramic Society, 2020, 40, 5582-5588.	5.7	13
66	Anisotropic relaxation and crystallographic tilt in BiFeO3 on miscut SrTiO3 (001). Applied Physics Letters, 2010, 96, 051901.	3.3	12
67	Large linear magnetoresistance in heavily-doped Nb:SrTiO3 epitaxial thin films. Scientific Reports, 2016, 6, 34295.	3.3	12
68	Comprehensive study on critical role of surface oxygen vacancies for 2DEG formation and annihilation in LaAlO3/SrTiO3 heterointerfaces. Electronic Materials Letters, 2016, 12, 243-250.	2.2	12
69	Thickness-Dependent Electrocaloric Effect in Pb0.9La0.1Zr0.65Ti0.35O3 Films Grown by Solâ€“Gel Process. Journal of Electronic Materials, 2016, 45, 1057-1064.	2.2	12
70	Texture-induced reduction in electrical resistivity of p-type (Bi,Sb)2Te3 by a hot extrusion. Journal of Alloys and Compounds, 2018, 764, 261-266.	5.5	12
71	Dynamic temperature response of electrocaloric multilayer capacitors. Applied Physics Letters, 2014, 104, .	3.3	11
72	Correction of the Electrical and Thermal Extrinsic Effects in Thermoelectric Measurements by the Harman Method. Scientific Reports, 2016, 6, 26507.	3.3	11

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73	Li alloy-based non-volatile actuators. Nano Energy, 2019, 57, 653-659.	16.0	11
74	Combined hot extrusion and spark plasma sintering method for producing highly textured thermoelectric Bi2Te3 alloys. Journal of the European Ceramic Society, 2020, 40, 3042-3048.	5.7	11
75	Direct Growth of Ferroelectric Oxide Thin Films on Polymers through Laser-Induced Low-Temperature Liquid-Phase Crystallization. Chemistry of Materials, 2020, 32, 6483-6493.	6.7	11
76	Enhanced thermal stability of Bi2Te3-based alloys via interface engineering with atomic layer deposition. Journal of the European Ceramic Society, 2020, 40, 3592-3599.	5.7	11
77	Giant Electroresistive Ferroelectric Diode on 2DEG. Scientific Reports, 2015, 5, 10548.	3.3	10
78	Electron beam induced epitaxial crystallization in a conducting and insulating a-LaAlO₃/SrTiO₃system. RSC Advances, 2017, 7, 40279-40285.	3.6	10
79	Carrier Modulation in Bi2Te3-Based Alloys via Interfacial Doping with Atomic Layer Deposition. Coatings, 2020, 10, 572.	2.6	10
80	Thermopower Enhancement of Bi2Te3 Films by Doping I Ions. Journal of Electronic Materials, 2014, 43, 2000-2005.	2.2	9
81	Orientation-Controlled Growth of Pt Films on SrTiO₃ (001) by Atomic Layer Deposition. Chemistry of Materials, 2015, 27, 6779-6783.	6.7	9
82	Substrate Surface Modification for Enlarging Two-Dimensional SnS Grains at Low Temperatures. Chemistry of Materials, 2020, 32, 9026-9033.	6.7	9
83	3D architectures of single-crystalline complex oxides. Materials Horizons, 2020, 7, 1552-1557.	12.2	9
84	Capacitanceâ€“voltage analysis of LaAlO3/SrTiO3 heterostructures. Applied Physics Letters, 2013, 102, 112906.	3.3	8
85	Effect of Sn Doping on the Thermoelectric Properties of n-type Bi2(Te,Se)3 Alloys. Journal of Electronic Materials, 2015, 44, 1926-1930.	2.2	8
86	Defect-Controlled, Scalable Layer-by-Layer Assembly of High-k Perovskite Oxide Nanosheets for All Two-Dimensional Nanoelectronics. Chemistry of Materials, 2021, 33, 8685-8692.	6.7	8
87	Symmetry-dependent interfacial reconstruction to compensate polar discontinuity at perovskite oxide interfaces (LaAlO3/SrTiO3 and LaAlO3/CaTiO3). Applied Physics Letters, 2015, 106, .	3.3	7
88	Growth Enhancement and Nitrogen Loss in ZnO_xN_y Low-Temperature Atomic Layer Deposition with NH₃. Journal of Physical Chemistry C, 2015, 119, 23470-23477.	3.1	7
89	Probing surface electronic properties of a patterned conductive STO by reactive ion etching. Applied Surface Science, 2019, 466, 730-736.	6.1	7
90	Mapping thermoelectric properties of polycrystalline n-type Bi2Te3-xSex alloys by composition and doping level. Journal of Alloys and Compounds, 2020, 844, 155828.	5.5	7

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91	Composition-Dependent Thermoelectric Properties of n-Type Bi2Te2.7Se0.3 Doped with In4Se3. Journal of Electronic Materials, 2013, 42, 2178-2183.	2.2	6
92	A two-step synthesis process of thermoelectric alloys for the separate control of carrier density and mobility. Journal of Alloys and Compounds, 2017, 727, 191-195.	5.5	6
93	Origin of insulating weak-ferromagnetic phase in ultra-thin La0.67Sr0.33MnO3 films on SrTiO3 substrate. AIP Advances, 2017, 7, 085224.	1.3	6
94	A novel class of oxynitrides stabilized by nitrogen dimer formation. Scientific Reports, 2018, 8, 14471.	3.3	6
95	Domain engineering of epitaxial (001) Bi2Te3 thin films by miscut GaAs substrate. Acta Materialia, 2020, 197, 309-315.	7.9	6
96	Twin wall distortions through structural investigation of epitaxial BiFeO₃ thin films. Journal of Materials Research, 2011, 26, 2844-2853.	2.6	5
97	Nonvolatile Resistance Switching on Two-Dimensional Electron Gas. ACS Applied Materials & Interfaces, 2014, 6, 17785-17791.	8.0	5
98	Influence of Gas Ambient on Charge Writing at the LaAlO₃/SrTiO₃ Heterointerface. ACS Applied Materials & Interfaces, 2014, 6, 14037-14042.	8.0	5
99	Thermal stability of 2DEG at amorphous LaAlO3/crystalline SrTiO3 heterointerfaces. Nano Convergence, 2016, 3, 7.	12.1	5
100	Stepwise growth of crystalline MoS₂ in atomic layer deposition. Journal of Materials Chemistry C, 2022, 10, 7031-7038.	5.5	5
101	Thermal stress-assisted annealing to improve the crystalline quality of an epitaxial YSZ buffer layer on Si. Journal of Materials Chemistry C, 2022, 10, 10027-10036.	5.5	5
102	Thermoelectric Properties of Highly Deformed and Subsequently Annealed p-Type (Bi0.25Sb0.75)2Te3 Alloys. Journal of Electronic Materials, 2014, 43, 1726-1732.	2.2	4
103	Epitaxial growth of CdTe films on GaAs-buffered (001) Si substrates by metal organic chemical vapor deposition. Materials Letters, 2012, 87, 139-141.	2.6	3
104	Three-Dimensional Bi2Te3 Nanocrystallites Embedded in 2D Bi2Te3 Films Grown by MOCVD. Journal of Electronic Materials, 2012, 41, 1237-1241.	2.2	3
105	Effect of Mechanical Deformation on Thermoelectric Properties of p-Type(Bi0.225Sb0.775)2Te3Alloys. Journal of Nanomaterials, 2013, 2013, 1-6.	2.7	3
106	Conductance Change Induced by the Rashba Effect in the LaAlO₃/SrTiO₃ Interface. Journal of Nanoscience and Nanotechnology, 2015, 15, 8632-8636.	0.9	3
107	A differential method for measuring cooling performance of a thermoelectric module. Applied Thermal Engineering, 2015, 87, 209-213.	6.0	3
108	Thermoelectric Properties of Sn-Doped Bi0.4Sb1.6Te3 Thin Films. Journal of Electronic Materials, 2015, 44, 1573-1578.	2.2	3

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109	Optical investigation of the metal-insulator transition in the manganite films with the thickness dependence. Current Applied Physics, 2019, 19, 1019-1023.	2.4	3
110	A Structural Investigation of CdTe(001) Thin Films on GaAs/Si(001) Substrates by High-Resolution Electron Microscopy. Journal of Electronic Materials, 2012, 41, 2795-2798.	2.2	2
111	Study of Rashba Spinâ€“Orbit Field at LaAlO3/SrTiO3 Heterointerfaces. Journal of Electronic Materials, 2019, 48, 1347-1352.	2.2	2
112	Hot rolling process for texture development and grain refinement of n-type Bi2Te3 alloys. Materials Letters, 2021, 301, 130278.	2.6	2
113	Effects of oxygen sources on properties of atomic-layer-deposited ferroelectric hafnium zirconium oxide thin films. Ceramics International, 2022, 48, 3280-3286.	4.8	2
114	Oxidation of thermoelectric Bi2Te3-based alloys by atomic layer deposition of Ru metal. Materials Letters, 2022, 320, 132321.	2.6	2
115	Impedance-based interfacial analysis of the LaAlO3/SrTiO3 oxide heterostructure involving a 2-dimensional electron gas layer. Journal of Physics and Chemistry of Solids, 2015, 82, 60-66.	4.0	1
116	A possible superconductor-like state at elevated temperatures near metal electrodes in an LaAlO3/SrTiO3 interface. Scientific Reports, 2018, 8, 11558.	3.3	1
117	Atomically sculptured heart in oxide film using convergent electron beam. Applied Microscopy, 2021, 51, 1.	1.4	1
118	Interface Effects on Static and Dynamic Properties of Multiferroic BiFeO3. Microscopy and Microanalysis, 2012, 18, 320-321.	0.4	0
119	Direct Observations of Retention Failure in Ferroelectric Memories by in situ Transmission Electron Microscopy. Microscopy and Microanalysis, 2012, 18, 1846-1847.	0.4	0
120	A Special Section on Selected Peer-Reviewed Articles from the International Conference on Advanced Electromaterials 2011 (ICAE2011). Journal of Nanoscience and Nanotechnology, 2013, 13, 3254-3259.	0.9	0
121	Impedance-based interpretations in 2-dimensional electron gas conduction formed in the LaAlO 3 /Sr x Ca 1â^'x TiO 3 /SrTiO 3 system. Journal of Physics and Chemistry of Solids, 2016, 93, 131-136.	4.0	0
122	Atomic and Electronic Reconstruction at the a-LAO/STO Interface by E-Beam Induced Crystallization. Microscopy and Microanalysis, 2019, 25, 1894-1895.	0.4	0