Han Wang

List of Publications by Year
in descending order

135 papers	18,162 citations	44069 48 h-index	13379 130 g-index
138 all docs	138 docs citations	138 times ranked	19360 citing authors

#	Article	IF	Citations
1	Mechanistic Advantages of Organotin Molecular EUV Photoresists. ACS Applied Materials & Interfaces, 2022, 14, 5514-5524.	8.0	11
2	Defect tolerance in CsPbI₃: reconstruction of the potential energy landscape and band degeneracy in spinâ€“orbit coupling. Journal of Materials Chemistry A, 2022, 10, 3018-3024.	10.3	9
3	Low voltage control of magnetism in BaFe10.2Sc1.8O19/BaTiO3 bilayer epitaxial thin film at temperatures up to 390â€‰K. Applied Physics Letters, 2022, 120, 062401.	3.3	1
4	Defects in Statically Unstable Solids: The Case for Cubic Perovskite Î±-CsPbI₃. Chinese Physics Letters, 2022, 39, 046101.	3.3	12
5	Spinâ€“Phonon Coupling in Ferromagnetic Monolayer Chromium Tribromide. Advanced Materials, 2022, 34, e2108506.	21.0	8
6	Monolayer Sc₂CF₂ as a Potential Selective and Sensitive NO₂ Sensor: Insight from First-Principles Calculations. ACS Omega, 2022, 7, 9267-9275.	3.5	3
7	Conical intersection and coherent vibrational dynamics in alkyl iodides captured by attosecond transient absorption spectroscopy. Journal of Chemical Physics, 2022, 156, 114304.	3.0	10
8	Integration of Self-Assembled BaZrO₃-Co Vertically Aligned Nanocomposites on Mica Substrates toward Flexible Spintronics. Crystal Growth and Design, 2022, 22, 718-725.	3.0	4
9	Circuitâ€Level Memory Technologies and Applications based on 2D Materials. Advanced Materials, 2022, 34, .	21.0	17
10	Orientation-Controlled Anisotropy in Single Crystals of Quasi-1D BaTiS₃. Chemistry of Materials, 2022, 34, 5680-5689.	6.7	6
11	Activating Thick Buried p-GaN for Device Applications. IEEE Transactions on Electron Devices, 2022, 69, 4224-4230.	3.0	4
12	Roadmap on emerging hardware and technology for machine learning. Nanotechnology, 2021, 32, 012002.	2.6	104
13	Emerging low-dimensional materials for mid-infrared detection. Nano Research, 2021, 14, 1863-1877.	10.4	22
14	Real-time observation and control of optical chaos. Science Advances, 2021, 7, .	10.3	20
15	Electrical properties and charge compensation mechanisms of Cr-doped rutile, TiO₂. Physical Chemistry Chemical Physics, 2021, 23, 22133-22146.	2.8	8
16	Backbonding contributions to small molecule chemisorption in a metalâ€“organic framework with open copper(<scp>i</scp>) centers. Chemical Science, 2021, 12, 2156-2164.	7.4	21
17	Role of ALD Al₂O₃ Surface Passivation on the Performance of p-Type Cu₂O Thin Film Transistors. ACS Applied Materials & Interfaces, 2021, 13, 4156-4164.	8.0	31
18	Multifunctional Metalâ€“Oxide Nanocomposite Thin Film with Plasmonic Au Nanopillars Embedded in Magnetic La_{0.67}Sr_{0.33}MnO₃ Matrix. Nano Letters, 2021, 21, 1032-1039.	9.1	26

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19	Nano-optoelectrodes Integrated with Flexible Multifunctional Fiber Probes by High-Throughput Scalable Fabrication. ACS Applied Materials & Interfaces, 2021, 13, 9156-9165.	8.0	13
20	A Tantalum Disulfide Charge-Density-Wave Stochastic Artificial Neuron for Emulating Neural Statistical Properties. Nano Letters, 2021, 21, 3465-3472.	9.1	15
21	Ultra-high heating rate effects on the sintering of ceramic nanoparticles: an inÂsitu TEM study. Materials Research Letters, 2021, 9, 373-381.	8.7	13
22	Mapping wave packet bifurcation at a conical intersection in CH3I by attosecond XUV transient absorption spectroscopy. Journal of Chemical Physics, 2021, 154, 234301.	3.0	18
23	Two-dimensional heterostructures and their device applications: progress, challenges and opportunitiesâ€"review. Journal Physics D: Applied Physics, 2021, 54, 433001.	2.8	30
24	Reconfigurable Stochastic neurons based on tin oxide/MoS2 hetero-memristors for simulated annealing and the Boltzmann machine. Nature Communications, 2021, 12, 5710.	12.8	14
25	Tri-Gate GaN Junction HEMTs: Physics and Performance Space. IEEE Transactions on Electron Devices, 2021, 68, 4854-4861.	3.0	14
26	Linking far-from-equilibrium defect structures in ceramics to electromagnetic driving forces. Journal of Materials Chemistry A, 2021, 9, 8425-8434.	10.3	2
27	Magnetic anisotropy of iridium dimers on two-dimensional materials. Physical Chemistry Chemical Physics, 2020, 22, 238-244.	2.8	11
28	Tellurene Photodetector with High Gain and Wide Bandwidth. ACS Nano, 2020, 14, 303-310.	14.6	101
29	Fieldâ€assisted heating of Gdâ€doped ceria thin film. Journal of the American Ceramic Society, 2020, 103, 2309-2314.	3.8	11
30	Beyond Graphene: Low-Symmetry and Anisotropic 2D Materials. Journal of Applied Physics, 2020, 128, 140401.	2.5	13
31	Tri-gate GaN junction HEMT. Applied Physics Letters, 2020, 117, .	3.3	29
32	Tailorable Fe nanostructures and magnetic anisotropy in (La0.5Sr0.5FeO3)1-x:Fex thin films integrated on SrTiO3 and silicon substrates. Materials Today Advances, 2020, 8, 100112.	5.2	8
33	Strain Effects on the Growth of La_{0.7}Sr_{0.3}MnO₃ (LSMO)â€"NiO Nanocomposite Thin Films via Substrate Control. ACS Omega, 2020, 5, 23793-23798.	3.5	5
34	Carrier Dynamics and Transfer across the CdS/MoS₂ Interface upon Optical Excitation. Journal of Physical Chemistry Letters, 2020, 11, 6544-6550.	4.6	13
35	Effective doping control in Sm-doped BiFeO₃ thin films via deposition temperature. RSC Advances, 2020, 10, 40229-40233.	3.6	5
36	Exchange Bias in a La_{0.67}Sr_{0.33}MnO₃/NiO Heterointerface Integrated on a Flexible Mica Substrate. ACS Applied Materials & Interfaces, 2020, 12, 39920-39925.	8.0	36

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37	A memristor-based hybrid analog-digital computing platform for mobile robotics. Science Robotics, 2020, 5, .	17.6	28
38	Ceramic Material Processing Towards Future Space Habitat: Electric Current-Assisted Sintering of Lunar Regolith Simulant. Materials, 2020, 13, 4128.	2.9	7
39	Revealing electronic state-switching at conical intersections in alkyl iodides by ultrafast XUV transient absorption spectroscopy. Nature Communications, 2020, 11, 4042.	12.8	40
40	Integration of highly anisotropic multiferroic BaTiO3â€“Fe nanocomposite thin films on Si towards device applications. Nanoscale Advances, 2020, 2, 4172-4178.	4.6	13
41	Flash sintering incubation kinetics. Npj Computational Materials, 2020, 6, .	8.7	24
42	Origin of leakage current in vertical GaN devices with nonplanar regrown p-GaN. Applied Physics Letters, 2020, 117, .	3.3	21
43	Temperature effect on mechanical response of flash-sintered ZnO by in-situ compression tests. Acta Materialia, 2020, 200, 699-709.	7.9	21
44	Memristive Device Characteristics Engineering by Controlling the Crystallinity of Switching Layer Materials. ACS Applied Electronic Materials, 2020, 2, 1529-1537.	4.3	7
45	Ultrafast processes in photochromic material YHxOy studied by excited-state density functional theory simulation. Science China Materials, 2020, 63, 1579-1587.	6.3	14
46	High tunnelling electroresistance in a ferroelectric van der Waals heterojunction via giant barrier height modulation. Nature Electronics, 2020, 3, 466-472.	26.0	150
47	Lateral p-GaN/2DEG junction diodes by selective-area p-GaN trench-filling-regrowth in AlGaN/GaN. Applied Physics Letters, 2020, 116, .	3.3	41
48	Emergence of Nontrivial Lowâ€Energy Dirac Fermions in Antiferromagnetic EuCd₂As₂. Advanced Materials, 2020, 32, e1907565.	21.0	51
49	Fluidic Flow Assisted Deterministic Folding of Van der Waals Materials. Advanced Functional Materials, 2020, 30, 1908691.	14.9	5
50	Room-Temperature Ferroelectric LiNb₆Ba₅Ti₄O₃₀ Spinel Phase in a Nanocomposite Thin Film Form for Nonlinear Photonics. ACS Applied Materials & Interfaces, 2020, 12, 23076-23083.	8.0	6
51	Role of Interlayer in 3D Vertically Aligned Nanocomposite Frameworks with Tunable Magnetotransport Properties. Advanced Materials Interfaces, 2020, 7, 1901990.	3.7	7
52	Investigating extreme ultraviolet radiation chemistry with first-principles quantum chemistry calculations. Journal of Micro/ Nanolithography, MEMS, and MOEMS, 2020, 19, .	0.9	4
53	Vertical Ga₂O₃Schottky Barrier Diodes With Small-Angle Beveled Field Plates: A Baligaâ€™s Figure-of-Merit of 0.6 GW/cm². IEEE Electron Device Letters, 2019, 40, 1399-1402.	3.9	139
54	Two-Phase Room-Temperature Multiferroic Nanocomposite with BiMnO3-Tilted Nanopillars in the Bi2W1â€“xMnxO6 Matrix. ACS Applied Materials & Interfaces, 2019, 11, 26261-26267.	8.0	9

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55	A combined multi-reference pump-probe simulation method with application to XUV signatures of ultrafast methyl iodide photodissociation. Journal of Chemical Physics, 2019, 151, 124106.	3.0	12
56	Integration of Hybrid Plasmonic Auâ€“BaTiO₃ Metamaterial on Silicon Substrates. ACS Applied Materials & Interfaces, 2019, 11, 45199-45206.	8.0	25
57	High strength, deformable nanotwinned Alâ€“Co alloys. Materials Research Letters, 2019, 7, 33-39.	8.7	32
58	Semimetal or Semiconductor: The Nature of High Intrinsic Electrical Conductivity in TiS₂. Journal of Physical Chemistry Letters, 2019, 10, 6996-7001.	4.6	27
59	Two-dimensional MoS2-enabled flexible rectenna for Wi-Fi-band wireless energy harvesting. Nature, 2019, 566, 368-372.	27.8	266
60	Multiferroic vertically aligned nanocomposite with CoFe2O4 nanocones embedded in layered Bi2WO6 matrix. Materials Research Letters, 2019, 7, 418-425.	8.7	14
61	Linear Dichroism Conversion in Quasiâ€1D Perovskite Chalcogenide. Advanced Materials, 2019, 31, e1902118.	21.0	41
62	Interface depended electronic and magnetic properties of vertical CrI₃/WSe₂ heterostructures. RSC Advances, 2019, 9, 14766-14771.	3.6	27
63	Photoinduced Vacancy Ordering and Phase Transition in MoTe₂. Nano Letters, 2019, 19, 3612-3617.	9.1	43
64	Design and Simulation of GaN Superjunction Transistors With 2-DEG Channels and Fin Channels. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2019, 7, 1475-1484.	5.4	40
65	Black phosphorus and its isoelectronic materials. Nature Reviews Physics, 2019, 1, 306-317.	26.6	196
66	Study of deformation mechanisms in flash-sintered yttria-stabilized zirconia by in-situ micromechanical testing at elevated temperatures. Materials Research Letters, 2019, 7, 194-202.	8.7	25
67	Probing ultrafast Câ€“Br bond fission in the UV photochemistry of bromoform with core-to-valence transient absorption spectroscopy. Structural Dynamics, 2019, 6, 054304.	2.3	16
68	Superjunction Power Transistors with Interface Charges: A Case Study for GaN. IEEE Journal of the Electron Devices Society, 2019, , 1-1.	2.1	9
69	High-voltage vertical Ga2O3 power rectifiers operational at high temperatures up to 600â€‰K. Applied Physics Letters, 2019, 115, .	3.3	58
70	Temperature-Dependent Transport in Ultrathin Black Phosphorus Field-Effect Transistors. Nano Letters, 2019, 19, 482-487.	9.1	17
71	Investigating EUV radiation chemistry with first principle quantum chemistry calculations. , 2019, , .		1
72	Three-dimensional strain engineering in epitaxial vertically aligned nanocomposite thin films with tunable magnetotransport properties. Materials Horizons, 2018, 5, 536-544.	12.2	57

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73	High breakdown electric field in Î²-Ga2O3/graphene vertical barristor heterostructure. Applied Physics Letters, 2018, 112, .	3.3	110
74	Microstructure, Magnetic, and Magnetoresistance Properties of La0.7Sr0.3MnO3:CuO Nanocomposite Thin Films. ACS Applied Materials & Interfaces, 2018, 10, 5779-5784.	8.0	24
75	Ultra-strong nanotwinned Alâ€“Ni solid solution alloys with significant plasticity. Nanoscale, 2018, 10, 22025-22034.	5.6	30
76	Multifunctional La_{0.67}Sr_{0.33}MnO₃ (LSMO) Thin Films Integrated on Mica Substrates toward Flexible Spintronics and Electronics. ACS Applied Materials & Interfaces, 2018, 10, 42698-42705.	8.0	62
77	Epitaxial growth and electrical properties of VO2 on [LaAlO3]0.3[Sr2AlTaO6]0.7 (111) substrate. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2018, 36, .	2.1	6
78	Efficient learning and crossbar operations with atomically-thin 2-D material compound synapses. Journal of Applied Physics, 2018, 124, .	2.5	14
79	Molecule Sensing: Sculpting Extreme Electromagnetic Field Enhancement in Free Space for Molecule Sensing (Small 33/2018). Small, 2018, 14, 1870152.	10.0	2
80	Impact Ionization and Interface Trap Generation in 28-nm MOSFETs at Cryogenic Temperatures. IEEE Transactions on Device and Materials Reliability, 2018, 18, 456-462.	2.0	1
81	Confined Liquid-Phase Growth of Crystalline Compound Semiconductors on Any Substrate. ACS Nano, 2018, 12, 5158-5167.	14.6	19
82	High temperature deformability of ductile flash-sintered ceramics via in-situ compression. Nature Communications, 2018, 9, 2063.	12.8	87
83	Atomically Thin CBRAM Enabled by 2-D Materials: Scaling Behaviors and Performance Limits. IEEE Transactions on Electron Devices, 2018, 65, 4160-4166.	3.0	19
84	Aligned Carbon Nanotube Synaptic Transistors for Large-Scale Neuromorphic Computing. ACS Nano, 2018, 12, 7352-7361.	14.6	128
85	Mid-wave and Long-Wave Infrared Linear Dichroism in a Hexagonal Perovskite Chalcogenide. Chemistry of Materials, 2018, 30, 4897-4901.	6.7	19
86	Sculpting Extreme Electromagnetic Field Enhancement in Free Space for Molecule Sensing. Small, 2018, 14, e1801146.	10.0	36
87	Enhanced Light Emission from the Ridge of Two-Dimensional InSe Flakes. Nano Letters, 2018, 18, 5078-5084.	9.1	35
88	Recent Progress on Stability and Passivation of Black Phosphorus. Advanced Materials, 2018, 30, e1704749.	21.0	248
89	Self-assembled vertically aligned Ni nanopillars in CeO₂ with anisotropic magnetic and transport properties for energy applications. Nanoscale, 2018, 10, 17182-17188.	5.6	34
90	Vertically Aligned Nanocomposite BaTiO₃:YMnO₃ Thin Films with Room Temperature Multiferroic Properties toward Nanoscale Memory Devices. ACS Applied Nano Materials, 2018, 1, 2509-2514.	5.0	29

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91	Giant optical anisotropy in a quasi-one-dimensional crystal. Nature Photonics, 2018, 12, 392-396.	31.4	269
92	Efficient electrical control of thin-film black phosphorus bandgap. Nature Communications, 2017, 8, 14474.	12.8	249
93	Three-dimensional Pentagon Carbon with a genesis of emergent fermions. Nature Communications, 2017, 8, 15641.	12.8	104
94	Spatial-Temporal Imaging of Anisotropic Photocarrier Dynamics in Black Phosphorus. Nano Letters, 2017, 17, 3675-3680.	9.1	56
95	Theoretical prediction of a graphene-like structure of indium nitride: A promising excellent material for optoelectronics. Applied Materials Today, 2017, 7, 169-178.	4.3	27
96	Atomically Thin Femtojoule Memristive Device. Advanced Materials, 2017, 29, 1703232.	21.0	147
97	Emulating Bilingual Synaptic Response Using a Junction-Based Artificial Synaptic Device. ACS Nano, 2017, 11, 7156-7163.	14.6	106
98	Transport Properties and Device Prospects of Ultrathin Black Phosphorus on Hexagonal Boron Nitride. IEEE Transactions on Electron Devices, 2017, 64, 5163-5171.	3.0	16
99	Novel electronic devices based on low-symmetry two-dimensional materials. , 2017, , .		0
100	Nanoscopy of Black Phosphorus Degradation. Advanced Materials Interfaces, 2016, 3, 1600121.	3.7	67
101	Novel electronic and photonic properties of low-symmetry two-dimensional materials. , 2016, , .		1
102	Optoelectronic devices based on two-dimensional transition metal dichalcogenides. Nano Research, 2016, 9, 1543-1560.	10.4	186
103	Vertical ambipolar barrier transistor based on black phosphorous-tin selenide van der waals heterojunction. , 2016, , .		0
104	Nanoscopy reveals surface-metallic black phosphorus. Light: Science and Applications, 2016, 5, e16162-e16162.	16.6	37
105	Low-symmetry two-dimensional materials for electronic and photonic applications. Nano Today, 2016, 11, 763-777.	11.9	113
106	The role of collective motion in the ultrafast charge transfer in van der Waals heterostructures. Nature Communications, 2016, 7, 11504.	12.8	103
107	Black Phosphorous: Nanoscopy of Black Phosphorus Degradation (Adv. Mater. Interfaces 12/2016). Advanced Materials Interfaces, 2016, 3, .	3.7	2
108	A Dynamically Reconfigurable Ambipolar Black Phosphorus Memory Device. ACS Nano, 2016, 10, 10428-10435.	14.6	97

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109	Monolayer Molybdenum Disulfide Nanoribbons with High Optical Anisotropy. Advanced Optical Materials, 2016, 4, 756-762.	7.3	74
110	Black Phosphorus Mid-Infrared Photodetectors with High Gain. Nano Letters, 2016, 16, 4648-4655.	9.1	616
111	Anisotropic Black Phosphorus Synaptic Device for Neuromorphic Applications. Advanced Materials, 2016, 28, 4991-4997.	21.0	281
112	Stacking Fault Enriching the Electronic and Transport Properties of Few-Layer Phosphorenes and Black Phosphorus. Nano Letters, 2016, 16, 1317-1322.	9.1	37
113	Black Arsenicâ€“Phosphorus: Layered Anisotropic Infrared Semiconductors with Highly Tunable Compositions and Properties. Advanced Materials, 2015, 27, 4423-4429.	21.0	378
114	Two-dimensional materials for nanophotonics application. Nanophotonics, 2015, 4, 128-142.	6.0	97
115	Tunable Plasmonâ€“Phonon Polaritons in Layered Grapheneâ€“Hexagonal Boron Nitride Heterostructures. ACS Photonics, 2015, 2, 907-912.	6.6	70
116	Synthesis of thin-film black phosphorus on a flexible substrate. 2D Materials, 2015, 2, 031002.	4.4	124
117	Highly anisotropic and robust excitons in monolayer black phosphorus. Nature Nanotechnology, 2015, 10, 517-521.	31.5	1,204
118	The renaissance of black phosphorus. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 4523-4530.	7.1	1,143
119	Interlayer interactions in anisotropic atomically thin rhenium diselenide. Nano Research, 2015, 8, 3651-3661.	10.4	159
120	Two-dimensional material nanophotonics. Nature Photonics, 2014, 8, 899-907.	31.4	2,362
121	Black Phosphorus Radio-Frequency Transistors. Nano Letters, 2014, 14, 6424-6429.	9.1	307
122	Tunable optical properties of multilayer black phosphorus thin films. Physical Review B, 2014, 90, .	3.2	592
123	Rediscovering black phosphorus as an anisotropic layered material for optoelectronics and electronics. Nature Communications, 2014, 5, 4458.	12.8	2,866
124	Plasmons and Screening in Monolayer and Multilayer Black Phosphorus. Physical Review Letters, 2014, 113, 106802.	7.8	515
125	pH sensing properties of graphene solution-gated field-effect transistors. Journal of Applied Physics, 2013, 114, .	2.5	88
126	Synthesis and Transfer of Single-Layer Transition Metal Disulfides on Diverse Surfaces. Nano Letters, 2013, 13, 1852-1857.	9.1	612

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127	Two-dimensional materials for ubiquitous electronics. , 2013, , .		1
128	Integrated Circuits Based on Bilayer MoS₂ Transistors. Nano Letters, 2012, 12, 4674-4680.	9.1	1,526
129	Native defects in second-generation topological insulators: Effect of spin-orbit interaction on Bi<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>Se<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review B, 2012, 86, .	3.2	117
130	Graphene Electronics for RF Applications. IEEE Microwave Magazine, 2012, 13, 114-125.	0.8	39
131	Graphene electronics for RF applications. , 2011, , .		2
132	Compact Virtual-Source Currentâ€“Voltage Model for Top- and Back-Gated Graphene Field-Effect Transistors. IEEE Transactions on Electron Devices, 2011, 58, 1523-1533.	3.0	66
133	Impact of Graphene Interface Quality on Contact Resistance and RF Device Performance. IEEE Electron Device Letters, 2011, 32, 1008-1010.	3.9	126
134	Al₂O₃ passivated InAlN/GaN HEMTs on SiC substrate with record current density and transconductance. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 2440-2444.	0.8	55
135	Breakdown Voltage for Superjunction Power Devices With Charge Imbalance: An Analytical Model Valid for Both Punch Through and Non Punch Through Devices. IEEE Transactions on Electron Devices, 2009, 56, 3175-3183.	3.0	57