Han Wang

List of Publications by Year in Descending Order

128 papers	13,871 citations	44 h-index	117 g-index
138 ext. papers	16,104 ext. citations	10 avg, IF	6.82 L-index

#	Paper	IF	Citations
128	Defect tolerance in CsPbI3: reconstruction of the potential energy landscape and band degeneracy in spin□rbit coupling. *Journal of Materials Chemistry A*, **2022**, 10, 3018-3024	13	3
127	Low voltage control of magnetism in BaFe10.2Sc1.8O19/BaTiO3 bilayer epitaxial thin film at temperatures up to 390 K. *Applied Physics Letters*, **2022**, 120, 062401	3.4	1
126	Defects in Statically Unstable Solids: The Case for Cubic Perovskite □CsPbI3. *Chinese Physics Letters* , **2022**, 39, 046101	1.8	1
125	Spin-Phonon Coupling in Ferromagnetic Monolayer Chromium Tribromide.. *Advanced Materials*, **2022**, e2108506	24	1
124	Monolayer ScCF as a Potential Selective and Sensitive NO Sensor: Insight from First-Principles Calculations.. *ACS Omega*, **2022**, 7, 9267-9275	3.9	0
123	Conical intersection and coherent vibrational dynamics in alkyl iodides captured by attosecond transient absorption spectroscopy.. *Journal of Chemical Physics*, **2022**, 156, 114304	3.9	0
122	Integration of Self-Assembled BaZrO3-Co Vertically Aligned Nanocomposites on Mica Substrates toward Flexible Spintronics. *Crystal Growth and Design*, **2022**, 22, 718-725	3.5	0
121	A Tantalum Disulfide Charge-Density-Wave Stochastic Artificial Neuron for Emulating Neural Statistical Properties. *Nano Letters*, **2021**, 21, 3465-3472	11.5	4
120	Ultra-high heating rate effects on the sintering of ceramic nanoparticles: an in situ TEM study. *Materials Research Letters*, **2021**, 9, 373-381	7.4	2
119	Mapping wave packet bifurcation at a conical intersection in CHI by attosecond XUV transient absorption spectroscopy. *Journal of Chemical Physics*, **2021**, 154, 234301	3.9	6
118	Roadmap on emerging hardware and technology for machine learning. *Nanotechnology*, **2021**, 32, 012002	3.4	45
117	Emerging low-dimensional materials for mid-infrared detection. *Nano Research*, **2021**, 14, 1863-1877	10	7
116	Real-time observation and control of optical chaos. *Science Advances*, **2021**, 7,	14.3	7
115	Electrical properties and charge compensation mechanisms of Cr-doped rutile, TiO. *Physical Chemistry Chemical Physics*, **2021**, 23, 22133-22146	3.6	1
114	Role of ALD AlO Surface Passivation on the Performance of p-Type CuO Thin Film Transistors. *ACS Applied Materials & Interfaces*, **2021**, 13, 4156-4164	9.5	15
113	Multifunctional Metal-Oxide Nanocomposite Thin Film with Plasmonic Au Nanopillars Embedded in Magnetic LaSrMnO Matrix. *Nano Letters*, **2021**, 21, 1032-1039	11.5	13
112	Nano-optoelectrodes Integrated with Flexible Multifunctional Fiber Probes by High-Throughput Scalable Fabrication. *ACS Applied Materials & Interfaces*, **2021**, 13, 9156-9165	9.5	2

111	Two-dimensional heterostructures and their device applications: progress, challenges and opportunities review. *Journal Physics D: Applied Physics*, **2021**, 54, 433001	3	6
110	Reconfigurable Stochastic neurons based on tin oxide/MoS hetero-memristors for simulated annealing and the Boltzmann machine. *Nature Communications*, **2021**, 12, 5710	17.4	3
109	Tri-Gate GaN Junction HEMTs: Physics and Performance Space. *IEEE Transactions on Electron Devices*, **2021**, 68, 4854-4861	2.9	4
108	Linking far-from-equilibrium defect structures in ceramics to electromagnetic driving forces. *Journal of Materials Chemistry A*, **2021**, 9, 8425-8434	13	0
107	Origin of leakage current in vertical GaN devices with nonplanar regrown p-GaN. *Applied Physics Letters*, **2020**, 117, 183502	3.4	11
106	Temperature effect on mechanical response of flash-sintered ZnO by in-situ compression tests. *Acta Materialia*, **2020**, 200, 699-709	8.4	10
105	Memristive Device Characteristics Engineering by Controlling the Crystallinity of Switching Layer Materials. *ACS Applied Electronic Materials*, **2020**, 2, 1529-1537	4	3
104	Ultrafast processes in photochromic material YHxOy studied by excited-state density functional theory simulation. *Science China Materials*, **2020**, 63, 1579-1587	7.1	9
103	High tunnelling electroresistance in a ferroelectric van der Waals heterojunction via giant barrier height modulation. *Nature Electronics*, **2020**, 3, 466-472	28.4	58
102	Lateral p-GaN/2DEG junction diodes by selective-area p-GaN trench-filling-regrowth in AlGaN/GaN. *Applied Physics Letters*, **2020**, 116, 053503	3.4	24
101	Emergence of Nontrivial Low-Energy Dirac Fermions in Antiferromagnetic EuCd As. *Advanced Materials*, **2020**, 32, e1907565	24	14
100	Fluidic Flow Assisted Deterministic Folding of Van der Waals Materials. *Advanced Functional Materials*, **2020**, 30, 1908691	15.6	4
99	Room-Temperature Ferroelectric LiNbBaTiO Spinel Phase in a Nanocomposite Thin Film Form for Nonlinear Photonics. *ACS Applied Materials & Interfaces*, **2020**, 12, 23076-23083	9.5	6
98	Role of Interlayer in 3D Vertically Aligned Nanocomposite Frameworks with Tunable Magnetotransport Properties. *Advanced Materials Interfaces*, **2020**, 7, 1901990	4.6	6
97	Investigating extreme ultraviolet radiation chemistry with first-principles quantum chemistry calculations. *Journal of Micro/ Nanolithography, MEMS, and MOEMS*, **2020**, 19,	0.7	2
96	Tellurene Photodetector with High Gain and Wide Bandwidth. *ACS Nano*, **2020**, 14, 303-310	16.7	55
95	Field-assisted heating of Gd-doped ceria thin film. *Journal of the American Ceramic Society*, **2020**, 103, 2309-2314	3.8	8
94	Tri-gate GaN junction HEMT. *Applied Physics Letters*, **2020**, 117, 143506	3.4	12

93	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	7.4	5
92	Strain Effects on the Growth of LaSrMnO (LSMO)-NiO Nanocomposite Thin Films via Substrate Control. *ACS Omega*, **2020**, 5, 23793-23798	3.9	0
91	Carrier Dynamics and Transfer across the CdS/MoS Interface upon Optical Excitation. *Journal of Physical Chemistry Letters*, **2020**, 11, 6544-6550	6.4	7
90	Effective doping control in Sm-doped BiFeO thin films deposition temperature.. *RSC Advances*, **2020**, 10, 40229-40233	3.7	2
89	Exchange Bias in a LaSrMnO/NiO Heterointerface Integrated on a Flexible Mica Substrate. *ACS Applied Materials & Interfaces*, **2020**, 12, 39920-39925	9.5	19
88	A memristor-based hybrid analog-digital computing platform for mobile robotics. *Science Robotics*, **2020**, 5,	18.6	11
87	Ceramic Material Processing Towards Future Space Habitat: Electric Current-Assisted Sintering of Lunar Regolith Simulant. *Materials*, **2020**, 13,	3.5	1
86	Revealing electronic state-switching at conical intersections in alkyl iodides by ultrafast XUV transient absorption spectroscopy. *Nature Communications*, **2020**, 11, 4042	17.4	17
85	Integration of highly anisotropic multiferroic BaTiO3Fe nanocomposite thin films on Si towards device applications. *Nanoscale Advances*, **2020**, 2, 4172-4178	5.1	6
84	Flash sintering incubation kinetics. *Npj Computational Materials*, **2020**, 6,	10.9	13
83	Backbonding contributions to small molecule chemisorption in a metal-organic framework with open copper(i) centers. *Chemical Science*, **2020**, 12, 2156-2164	9.4	9
82	High strength, deformable nanotwinned AlCo alloys. *Materials Research Letters*, **2019**, 7, 33-39	7.4	22
81	Semimetal or Semiconductor: The Nature of High Intrinsic Electrical Conductivity in TiS. *Journal of Physical Chemistry Letters*, **2019**, 10, 6996-7001	6.4	10
80	Two-dimensional MoS-enabled flexible rectenna for Wi-Fi-band wireless energy harvesting. *Nature*, **2019**, 566, 368-372	50.4	164
79	Multiferroic vertically aligned nanocomposite with CoFe2O4 nanocones embedded in layered Bi2WO6 matrix. *Materials Research Letters*, **2019**, 7, 418-425	7.4	10
78	Linear Dichroism Conversion in Quasi-1D Perovskite Chalcogenide. *Advanced Materials*, **2019**, 31, e1902118	21.4	22
77	Interface depended electronic and magnetic properties of vertical CrI/WSe heterostructures.. *RSC Advances*, **2019**, 9, 14766-14771	3.7	13
76	Photoinduced Vacancy Ordering and Phase Transition in MoTe. *Nano Letters*, **2019**, 19, 3612-3617	11.5	30

75	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	5.6	30
74	Black phosphorus and its isoelectronic materials. *Nature Reviews Physics*, **2019**, 1, 306-317	23.6	107
73	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	7.4	12
72	Vertical Ga2O3 Schottky Barrier Diodes With Small-Angle Beveled Field Plates: A Baliga Figure-of-Merit of 0.6 GW/cm2. *IEEE Electron Device Letters*, **2019**, 40, 1399-1402	4.4	84
71	Two-Phase Room-Temperature Multiferroic Nanocomposite with BiMnO-Tilted Nanopillars in the BiWMnO Matrix. *ACS Applied Materials & Interfaces*, **2019**, 11, 26261-26267	9.5	8
70	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	3.9	6
69	Integration of Hybrid Plasmonic Au-BaTiO Metamaterial on Silicon Substrates. *ACS Applied Materials & Interfaces*, **2019**, 11, 45199-45206	9.5	19
68	Investigating EUV radiation chemistry with first principle quantum chemistry calculations **2019**,		1
67	Magnetic anisotropy of iridium dimers on two-dimensional materials. *Physical Chemistry Chemical Physics*, **2019**, 22, 238-244	3.6	6
66	Probing ultrafast C-Br bond fission in the UV photochemistry of bromoform with core-to-valence transient absorption spectroscopy. *Structural Dynamics*, **2019**, 6, 054304	3.2	7
65	Superjunction Power Transistors With Interface Charges: A Case Study for GaN. *IEEE Journal of the Electron Devices Society*, **2019**, 1-1	2.3	7
64	High-voltage vertical Ga2O3 power rectifiers operational at high temperatures up to 600 K. *Applied Physics Letters*, **2019**, 115, 263503	3.4	32
63	Temperature-Dependent Transport in Ultrathin Black Phosphorus Field-Effect Transistors. *Nano Letters*, **2019**, 19, 482-487	11.5	13
62	Three-dimensional strain engineering in epitaxial vertically aligned nanocomposite thin films with tunable magnetotransport properties. *Materials Horizons*, **2018**, 5, 536-544	14.4	44
61	High breakdown electric field in Ga2O3/graphene vertical barristor heterostructure. *Applied Physics Letters*, **2018**, 112, 032101	3.4	87
60	Microstructure, Magnetic, and Magnetoresistance Properties of LaSrMnO:CuO Nanocomposite Thin Films. *ACS Applied Materials & Interfaces*, **2018**, 10, 5779-5784	9.5	20
59	Mid-wave and Long-Wave Infrared Linear Dichroism in a Hexagonal Perovskite Chalcogenide. *Chemistry of Materials*, **2018**, 30, 4897-4901	9.6	12
58	Sculpting Extreme Electromagnetic Field Enhancement in Free Space for Molecule Sensing. *Small*, **2018**, 14, e1801146	11	26

57	Enhanced Light Emission from the Ridge of Two-Dimensional InSe Flakes. *Nano Letters*, **2018**, 18, 5078-5084	12.5	21
56	Recent Progress on Stability and Passivation of Black Phosphorus. *Advanced Materials*, **2018**, 30, e1704749	21	160
55	Self-assembled vertically aligned Ni nanopillars in CeO with anisotropic magnetic and transport properties for energy applications. *Nanoscale*, **2018**, 10, 17182-17188	7.7	31
54	Vertically Aligned Nanocomposite BaTiO3:YMnO3 Thin Films with Room Temperature Multiferroic Properties toward Nanoscale Memory Devices. *ACS Applied Nano Materials*, **2018**, 1, 2509-2514	5.6	23
53	Giant optical anisotropy in a quasi-one-dimensional crystal. *Nature Photonics*, **2018**, 12, 392-396	33.9	148
52	Ultra-strong nanotwinned Al-Ni solid solution alloys with significant plasticity. *Nanoscale*, **2018**, 10, 22025-22034	7.7	19
51	Multifunctional LaSrMnO (LSMO) Thin Films Integrated on Mica Substrates toward Flexible Spintronics and Electronics. *ACS Applied Materials & Interfaces*, **2018**, 10, 42698-42705	9.5	45
50	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, 061506	2.9	4
49	Two-dimensional Materials for Electronic Applications **2018**, 55-90		1
48	Efficient learning and crossbar operations with atomically-thin 2-D material compound synapses. *Journal of Applied Physics*, **2018**, 124, 152133	2.5	9
47	Molecule Sensing: Sculpting Extreme Electromagnetic Field Enhancement in Free Space for Molecule Sensing (Small 33/2018). *Small*, **2018**, 14, 1870152	11	1
46	Impact Ionization and Interface Trap Generation in 28-nm MOSFETs at Cryogenic Temperatures. *IEEE Transactions on Device and Materials Reliability*, **2018**, 18, 456-462	1.6	1
45	Confined Liquid-Phase Growth of Crystalline Compound Semiconductors on Any Substrate. *ACS Nano*, **2018**, 12, 5158-5167	16.7	12
44	High temperature deformability of ductile flash-sintered ceramics via in-situ compression. *Nature Communications*, **2018**, 9, 2063	17.4	56
43	Atomically Thin CBRAM Enabled by 2-D Materials: Scaling Behaviors and Performance Limits. *IEEE Transactions on Electron Devices*, **2018**, 65, 4160-4166	2.9	15
42	Aligned Carbon Nanotube Synaptic Transistors for Large-Scale Neuromorphic Computing. *ACS Nano* , **2018**, 12, 7352-7361	16.7	89
41	Efficient electrical control of thin-film black phosphorus bandgap. *Nature Communications*, **2017**, 8, 14474	17.4	183
40	Three-dimensional Pentagon Carbon with a genesis of emergent fermions. *Nature Communications*, **2017**, 8, 15641	17.4	81

39	Spatial-Temporal Imaging of Anisotropic Photocarrier Dynamics in Black Phosphorus. *Nano Letters*, **2017**, 17, 3675-3680	11.5	40
38	Theoretical prediction of a graphene-like structure of indium nitride: A promising excellent material for optoelectronics. *Applied Materials Today*, **2017**, 7, 169-178	6.6	16
37	Atomically Thin Femtojoule Memristive Device. *Advanced Materials*, **2017**, 29, 1703232	24	95
36	Emulating Bilingual Synaptic Response Using a Junction-Based Artificial Synaptic Device. *ACS Nano*, **2017**, 11, 7156-7163	16.7	75
35	Transport Properties and Device Prospects of Ultrathin Black Phosphorus on Hexagonal Boron Nitride. *IEEE Transactions on Electron Devices*, **2017**, 64, 5163-5171	2.9	12
34	Nanoscopy reveals surface-metallic black phosphorus. *Light: Science and Applications*, **2016**, 5, e16162	16.7	31
33	Low-symmetry two-dimensional materials for electronic and photonic applications. *Nano Today*, **2016**, 11, 763-777	17.9	85
32	The role of collective motion in the ultrafast charge transfer in van der Waals heterostructures. *Nature Communications*, **2016**, 7, 11504	17.4	79
31	Black Phosphorous: Nanoscopy of Black Phosphorus Degradation (Adv. Mater. Interfaces 12/2016). *Advanced Materials Interfaces*, **2016**, 3,	4.6	2
30	A Dynamically Reconfigurable Ambipolar Black Phosphorus Memory Device. *ACS Nano*, **2016**, 10, 10428-10435	16.7	72
29	Monolayer Molybdenum Disulfide Nanoribbons with High Optical Anisotropy. *Advanced Optical Materials*, **2016**, 4, 756-762	8.1	61
28	Black Phosphorus Mid-Infrared Photodetectors with High Gain. *Nano Letters*, **2016**, 16, 4648-55	11.5	476
27	Anisotropic Black Phosphorus Synaptic Device for Neuromorphic Applications. *Advanced Materials*, **2016**, 28, 4991-7	24	217
26	Stacking Fault Enriching the Electronic and Transport Properties of Few-Layer Phosphorenes and Black Phosphorus. *Nano Letters*, **2016**, 16, 1317-22	11.5	35
25	Nanoscopy of Black Phosphorus Degradation. *Advanced Materials Interfaces*, **2016**, 3, 1600121	4.6	56
24	Optoelectronic devices based on two-dimensional transition metal dichalcogenides. *Nano Research*, **2016**, 9, 1543-1560	10	136
23	Tunable Plasmon–Phonon Polaritons in Layered Graphene–Hexagonal Boron Nitride Heterostructures. *ACS Photonics*, **2015**, 2, 907-912	6.3	57
22	Synthesis of thin-film black phosphorus on a flexible substrate. *2D Materials*, **2015**, 2, 031002	5.9	96

21	Highly anisotropic and robust excitons in monolayer black phosphorus. *Nature Nanotechnology*, **2015**, 10, 517-21	28.7	999
20	The renaissance of black phosphorus. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 4523-30	11.5	900
19	Interlayer interactions in anisotropic atomically thin rhenium diselenide. *Nano Research*, **2015**, 8, 3651-3661	10	133
18	Black Arsenic-Phosphorus: Layered Anisotropic Infrared Semiconductors with Highly Tunable Compositions and Properties. *Advanced Materials*, **2015**, 27, 4423-4429	24	282
17	Two-dimensional materials for nanophotonics application. *Nanophotonics*, **2015**, 4, 128-142	6.3	76
16	Black phosphorus radio-frequency transistors. *Nano Letters*, **2014**, 14, 6424-9	11.5	270
15	Tunable optical properties of multilayer black phosphorus thin films. *Physical Review B*, **2014**, 90,	3.3	496
14	Rediscovering black phosphorus as an anisotropic layered material for optoelectronics and electronics. *Nature Communications*, **2014**, 5, 4458	17.4	2389
13	Plasmons and screening in monolayer and multilayer black phosphorus. *Physical Review Letters*, **2014**, 113, 106802	7.4	405
12	Two-dimensional material nanophotonics. *Nature Photonics*, **2014**, 8, 899-907	33.9	1805
11	pH sensing properties of graphene solution-gated field-effect transistors. *Journal of Applied Physics* , **2013**, 114, 084505	2.5	76
10	Synthesis and transfer of single-layer transition metal disulfides on diverse surfaces. *Nano Letters*, **2013**, 13, 1852-7	11.5	524
9	Two-dimensional materials for ubiquitous electronics **2013**,		1
8	Integrated circuits based on bilayer MoS□transistors. *Nano Letters*, **2012**, 12, 4674-80	11.5	1350
7	Native defects in second-generation topological insulators: Effect of spin-orbit interaction on Bi2Se3. *Physical Review B*, **2012**, 86,	3.3	97
6	Graphene Electronics for RF Applications. *IEEE Microwave Magazine*, **2012**, 13, 114-125	1.2	27
5	Compact Virtual-Source Current□Voltage Model for Top- and Back-Gated Graphene Field-Effect Transistors. *IEEE Transactions on Electron Devices*, **2011**, 58, 1523-1533	2.9	59
4	Impact of Graphene Interface Quality on Contact Resistance and RF Device Performance. *IEEE Electron Device Letters*, **2011**, 32, 1008-1010	4.4	111

3	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		47
2	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	2.9	50
1	Circuit Level Memory Technologies and Applications based on 2D Materials. *Advanced Materials*,2202371	24	1