

Han Wang

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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	Rediscovering black phosphorus as an anisotropic layered material for optoelectronics and electronics. <i>Nature Communications</i> , 2014 , 5, 4458	17.4	2389
127	Two-dimensional material nanophotonics. <i>Nature Photonics</i> , 2014 , 8, 899-907	33.9	1805
126	Integrated circuits based on bilayer MoS ₂ transistors. <i>Nano Letters</i> , 2012 , 12, 4674-80	11.5	1350
125	Highly anisotropic and robust excitons in monolayer black phosphorus. <i>Nature Nanotechnology</i> , 2015 , 10, 517-21	28.7	999
124	The renaissance of black phosphorus. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 4523-30	11.5	900
123	Synthesis and transfer of single-layer transition metal disulfides on diverse surfaces. <i>Nano Letters</i> , 2013 , 13, 1852-7	11.5	524
122	Tunable optical properties of multilayer black phosphorus thin films. <i>Physical Review B</i> , 2014 , 90,	3.3	496
121	Black Phosphorus Mid-Infrared Photodetectors with High Gain. <i>Nano Letters</i> , 2016 , 16, 4648-55	11.5	476
120	Plasmons and screening in monolayer and multilayer black phosphorus. <i>Physical Review Letters</i> , 2014 , 113, 106802	7.4	405
119	Black Arsenic-Phosphorus: Layered Anisotropic Infrared Semiconductors with Highly Tunable Compositions and Properties. <i>Advanced Materials</i> , 2015 , 27, 4423-4429	24	282
118	Black phosphorus radio-frequency transistors. <i>Nano Letters</i> , 2014 , 14, 6424-9	11.5	270
117	Anisotropic Black Phosphorus Synaptic Device for Neuromorphic Applications. <i>Advanced Materials</i> , 2016 , 28, 4991-7	24	217
116	Efficient electrical control of thin-film black phosphorus bandgap. <i>Nature Communications</i> , 2017 , 8, 14474	17.4	183
115	Two-dimensional MoS ₂ -enabled flexible rectenna for Wi-Fi-band wireless energy harvesting. <i>Nature</i> , 2019 , 566, 368-372	50.4	164
114	Recent Progress on Stability and Passivation of Black Phosphorus. <i>Advanced Materials</i> , 2018 , 30, e170474	22	160
113	Giant optical anisotropy in a quasi-one-dimensional crystal. <i>Nature Photonics</i> , 2018 , 12, 392-396	33.9	148
112	Optoelectronic devices based on two-dimensional transition metal dichalcogenides. <i>Nano Research</i> , 2016 , 9, 1543-1560	10	136

111	Interlayer interactions in anisotropic atomically thin rhenium diselenide. <i>Nano Research</i> , 2015 , 8, 3651-3661	6.6	133
110	Impact of Graphene Interface Quality on Contact Resistance and RF Device Performance. <i>IEEE Electron Device Letters</i> , 2011 , 32, 1008-1010	4.4	111
109	Black phosphorus and its isoelectronic materials. <i>Nature Reviews Physics</i> , 2019 , 1, 306-317	23.6	107
108	Native defects in second-generation topological insulators: Effect of spin-orbit interaction on Bi ₂ Se ₃ . <i>Physical Review B</i> , 2012 , 86,	3.3	97
107	Synthesis of thin-film black phosphorus on a flexible substrate. <i>2D Materials</i> , 2015 , 2, 031002	5.9	96
106	Atomically Thin Femtojoule Memristive Device. <i>Advanced Materials</i> , 2017 , 29, 1703232	24	95
105	Aligned Carbon Nanotube Synaptic Transistors for Large-Scale Neuromorphic Computing. <i>ACS Nano</i> , 2018 , 12, 7352-7361	16.7	89
104	High breakdown electric field in InGa ₂ O ₃ /graphene vertical barristor heterostructure. <i>Applied Physics Letters</i> , 2018 , 112, 032101	3.4	87
103	Low-symmetry two-dimensional materials for electronic and photonic applications. <i>Nano Today</i> , 2016 , 11, 763-777	17.9	85
102	Vertical Ga ₂ O ₃ Schottky Barrier Diodes With Small-Angle Beveled Field Plates: A Baliga ² Figure-of-Merit of 0.6 GW/cm ² . <i>IEEE Electron Device Letters</i> , 2019 , 40, 1399-1402	4.4	84
101	Three-dimensional Pentagon Carbon with a genesis of emergent fermions. <i>Nature Communications</i> , 2017 , 8, 15641	17.4	81
100	The role of collective motion in the ultrafast charge transfer in van der Waals heterostructures. <i>Nature Communications</i> , 2016 , 7, 11504	17.4	79
99	pH sensing properties of graphene solution-gated field-effect transistors. <i>Journal of Applied Physics</i> , 2013 , 114, 084505	2.5	76
98	Two-dimensional materials for nanophotonics application. <i>Nanophotonics</i> , 2015 , 4, 128-142	6.3	76
97	Emulating Bilingual Synaptic Response Using a Junction-Based Artificial Synaptic Device. <i>ACS Nano</i> , 2017 , 11, 7156-7163	16.7	75
96	A Dynamically Reconfigurable Ambipolar Black Phosphorus Memory Device. <i>ACS Nano</i> , 2016 , 10, 10428-10435	16.3	72
95	Monolayer Molybdenum Disulfide Nanoribbons with High Optical Anisotropy. <i>Advanced Optical Materials</i> , 2016 , 4, 756-762	8.1	61
94	Compact Virtual-Source Current-Voltage Model for Top- and Back-Gated Graphene Field-Effect Transistors. <i>IEEE Transactions on Electron Devices</i> , 2011 , 58, 1523-1533	2.9	59

93	High tunnelling electroresistance in a ferroelectric van der Waals heterojunction via giant barrier height modulation. <i>Nature Electronics</i> , 2020 , 3, 466-472	28.4	58
92	Tunable Plasmon-Phonon Polaritons in Layered Graphene-Hexagonal Boron Nitride Heterostructures. <i>ACS Photonics</i> , 2015 , 2, 907-912	6.3	57
91	Nanoscopy of Black Phosphorus Degradation. <i>Advanced Materials Interfaces</i> , 2016 , 3, 1600121	4.6	56
90	High temperature deformability of ductile flash-sintered ceramics via in-situ compression. <i>Nature Communications</i> , 2018 , 9, 2063	17.4	56
89	Tellurene Photodetector with High Gain and Wide Bandwidth. <i>ACS Nano</i> , 2020 , 14, 303-310	16.7	55
88	Breakdown Voltage for Superjunction Power Devices With Charge Imbalance: An Analytical Model Valid for Both Punch Through and Non Punch Through Devices. <i>IEEE Transactions on Electron Devices</i> , 2009 , 56, 3175-3183	2.9	50
87	Al ₂ O ₃ passivated InAlN/GaN HEMTs on SiC substrate with record current density and transconductance. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2010 , 7, 2440-2444		47
86	Roadmap on emerging hardware and technology for machine learning. <i>Nanotechnology</i> , 2021 , 32, 0120034	3.4	45
85	Multifunctional LaSrMnO (LSMO) Thin Films Integrated on Mica Substrates toward Flexible Spintronics and Electronics. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 42698-42705	9.5	45
84	Three-dimensional strain engineering in epitaxial vertically aligned nanocomposite thin films with tunable magnetotransport properties. <i>Materials Horizons</i> , 2018 , 5, 536-544	14.4	44
83	Spatial-Temporal Imaging of Anisotropic Photocarrier Dynamics in Black Phosphorus. <i>Nano Letters</i> , 2017 , 17, 3675-3680	11.5	40
82	Stacking Fault Enriching the Electronic and Transport Properties of Few-Layer Phosphorenes and Black Phosphorus. <i>Nano Letters</i> , 2016 , 16, 1317-22	11.5	35
81	High-voltage vertical Ga ₂ O ₃ power rectifiers operational at high temperatures up to 600 K. <i>Applied Physics Letters</i> , 2019 , 115, 263503	3.4	32
80	Nanoscopy reveals surface-metallic black phosphorus. <i>Light: Science and Applications</i> , 2016 , 5, e16162	16.7	31
79	Self-assembled vertically aligned Ni nanopillars in CeO with anisotropic magnetic and transport properties for energy applications. <i>Nanoscale</i> , 2018 , 10, 17182-17188	7.7	31
78	Photoinduced Vacancy Ordering and Phase Transition in MoTe. <i>Nano Letters</i> , 2019 , 19, 3612-3617	11.5	30
77	Design and Simulation of GaN Superjunction Transistors With 2-DEG Channels and Fin Channels. <i>IEEE Journal of Emerging and Selected Topics in Power Electronics</i> , 2019 , 7, 1475-1484	5.6	30
76	Graphene Electronics for RF Applications. <i>IEEE Microwave Magazine</i> , 2012 , 13, 114-125	1.2	27

75	Sculpting Extreme Electromagnetic Field Enhancement in Free Space for Molecule Sensing. <i>Small</i> , 2018 , 14, e1801146	11	26
74	Lateral p-GaN/2DEG junction diodes by selective-area p-GaN trench-filling-regrowth in AlGaIn/GaN. <i>Applied Physics Letters</i> , 2020 , 116, 053503	3.4	24
73	Vertically Aligned Nanocomposite BaTiO ₃ :YMnO ₃ Thin Films with Room Temperature Multiferroic Properties toward Nanoscale Memory Devices. <i>ACS Applied Nano Materials</i> , 2018 , 1, 2509-2514	5.6	23
72	High strength, deformable nanotwinned AlCo alloys. <i>Materials Research Letters</i> , 2019 , 7, 33-39	7.4	22
71	Linear Dichroism Conversion in Quasi-1D Perovskite Chalcogenide. <i>Advanced Materials</i> , 2019 , 31, e1902118	11.8	22
70	Enhanced Light Emission from the Ridge of Two-Dimensional InSe Flakes. <i>Nano Letters</i> , 2018 , 18, 5078-5084	5.3	21
69	Microstructure, Magnetic, and Magnetoresistance Properties of LaSrMnO:CuO Nanocomposite Thin Films. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 5779-5784	9.5	20
68	Integration of Hybrid Plasmonic Au-BaTiO Metamaterial on Silicon Substrates. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 45199-45206	9.5	19
67	Exchange Bias in a LaSrMnO/NiO Heterointerface Integrated on a Flexible Mica Substrate. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 39920-39925	9.5	19
66	Ultra-strong nanotwinned Al-Ni solid solution alloys with significant plasticity. <i>Nanoscale</i> , 2018 , 10, 22025-22034	7.1	19
65	Revealing electronic state-switching at conical intersections in alkyl iodides by ultrafast XUV transient absorption spectroscopy. <i>Nature Communications</i> , 2020 , 11, 4042	17.4	17
64	Theoretical prediction of a graphene-like structure of indium nitride: A promising excellent material for optoelectronics. <i>Applied Materials Today</i> , 2017 , 7, 169-178	6.6	16
63	Role of ALD AlO Surface Passivation on the Performance of p-Type CuO Thin Film Transistors. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 4156-4164	9.5	15
62	Atomically Thin CBRAM Enabled by 2-D Materials: Scaling Behaviors and Performance Limits. <i>IEEE Transactions on Electron Devices</i> , 2018 , 65, 4160-4166	2.9	15
61	Emergence of Nontrivial Low-Energy Dirac Fermions in Antiferromagnetic EuCd As. <i>Advanced Materials</i> , 2020 , 32, e1907565	24	14
60	Interface depended electronic and magnetic properties of vertical CrI/WSe heterostructures.. <i>RSC Advances</i> , 2019 , 9, 14766-14771	3.7	13
59	Flash sintering incubation kinetics. <i>Npj Computational Materials</i> , 2020 , 6,	10.9	13
58	Temperature-Dependent Transport in Ultrathin Black Phosphorus Field-Effect Transistors. <i>Nano Letters</i> , 2019 , 19, 482-487	11.5	13

57	Multifunctional Metal-Oxide Nanocomposite Thin Film with Plasmonic Au Nanopillars Embedded in Magnetic LaSrMnO Matrix. <i>Nano Letters</i> , 2021 , 21, 1032-1039	11.5	13
56	Study of deformation mechanisms in flash-sintered yttria-stabilized zirconia by in-situ micromechanical testing at elevated temperatures. <i>Materials Research Letters</i> , 2019 , 7, 194-202	7.4	12
55	Mid-wave and Long-Wave Infrared Linear Dichroism in a Hexagonal Perovskite Chalcogenide. <i>Chemistry of Materials</i> , 2018 , 30, 4897-4901	9.6	12
54	Transport Properties and Device Prospects of Ultrathin Black Phosphorus on Hexagonal Boron Nitride. <i>IEEE Transactions on Electron Devices</i> , 2017 , 64, 5163-5171	2.9	12
53	Tri-gate GaN junction HEMT. <i>Applied Physics Letters</i> , 2020 , 117, 143506	3.4	12
52	Confined Liquid-Phase Growth of Crystalline Compound Semiconductors on Any Substrate. <i>ACS Nano</i> , 2018 , 12, 5158-5167	16.7	12
51	Origin of leakage current in vertical GaN devices with nonplanar regrown p-GaN. <i>Applied Physics Letters</i> , 2020 , 117, 183502	3.4	11
50	A memristor-based hybrid analog-digital computing platform for mobile robotics. <i>Science Robotics</i> , 2020 , 5,	18.6	11
49	Semimetal or Semiconductor: The Nature of High Intrinsic Electrical Conductivity in TiS. <i>Journal of Physical Chemistry Letters</i> , 2019 , 10, 6996-7001	6.4	10
48	Multiferroic vertically aligned nanocomposite with CoFe ₂ O ₄ nanocones embedded in layered Bi ₂ WO ₆ matrix. <i>Materials Research Letters</i> , 2019 , 7, 418-425	7.4	10
47	Temperature effect on mechanical response of flash-sintered ZnO by in-situ compression tests. <i>Acta Materialia</i> , 2020 , 200, 699-709	8.4	10
46	Ultrafast processes in photochromic material YHxOy studied by excited-state density functional theory simulation. <i>Science China Materials</i> , 2020 , 63, 1579-1587	7.1	9
45	Backbonding contributions to small molecule chemisorption in a metal-organic framework with open copper(i) centers. <i>Chemical Science</i> , 2020 , 12, 2156-2164	9.4	9
44	Efficient learning and crossbar operations with atomically-thin 2-D material compound synapses. <i>Journal of Applied Physics</i> , 2018 , 124, 152133	2.5	9
43	Two-Phase Room-Temperature Multiferroic Nanocomposite with BiMnO-Tilted Nanopillars in the BiWMnO Matrix. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 26261-26267	9.5	8
42	Field-assisted heating of Gd-doped ceria thin film. <i>Journal of the American Ceramic Society</i> , 2020 , 103, 2309-2314	3.8	8
41	Carrier Dynamics and Transfer across the CdS/MoS Interface upon Optical Excitation. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 6544-6550	6.4	7
40	Probing ultrafast C-Br bond fission in the UV photochemistry of bromoform with core-to-valence transient absorption spectroscopy. <i>Structural Dynamics</i> , 2019 , 6, 054304	3.2	7

39	Superjunction Power Transistors With Interface Charges: A Case Study for GaN. <i>IEEE Journal of the Electron Devices Society</i> , 2019 , 1-1	2.3	7
38	Emerging low-dimensional materials for mid-infrared detection. <i>Nano Research</i> , 2021 , 14, 1863-1877	10	7
37	Real-time observation and control of optical chaos. <i>Science Advances</i> , 2021 , 7,	14.3	7
36	Room-Temperature Ferroelectric LiNbBaTiO Spinel Phase in a Nanocomposite Thin Film Form for Nonlinear Photonics. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 23076-23083	9.5	6
35	Role of Interlayer in 3D Vertically Aligned Nanocomposite Frameworks with Tunable Magnetotransport Properties. <i>Advanced Materials Interfaces</i> , 2020 , 7, 1901990	4.6	6
34	A combined multi-reference pump-probe simulation method with application to XUV signatures of ultrafast methyl iodide photodissociation. <i>Journal of Chemical Physics</i> , 2019 , 151, 124106	3.9	6
33	Magnetic anisotropy of iridium dimers on two-dimensional materials. <i>Physical Chemistry Chemical Physics</i> , 2019 , 22, 238-244	3.6	6
32	Integration of highly anisotropic multiferroic BaTiO ₃ /Fe nanocomposite thin films on Si towards device applications. <i>Nanoscale Advances</i> , 2020 , 2, 4172-4178	5.1	6
31	Mapping wave packet bifurcation at a conical intersection in CHI by attosecond XUV transient absorption spectroscopy. <i>Journal of Chemical Physics</i> , 2021 , 154, 234301	3.9	6
30	Two-dimensional heterostructures and their device applications: progress, challenges and opportunities—Review. <i>Journal Physics D: Applied Physics</i> , 2021 , 54, 433001	3	6
29	Tailorable Fe nanostructures and magnetic anisotropy in (La _{0.5} Sr _{0.5} FeO ₃) _{1-x} Fe _x thin films integrated on SrTiO ₃ and silicon substrates. <i>Materials Today Advances</i> , 2020 , 8, 100112	7.4	5
28	Fluidic Flow Assisted Deterministic Folding of Van der Waals Materials. <i>Advanced Functional Materials</i> , 2020 , 30, 1908691	15.6	4
27	A Tantalum Disulfide Charge-Density-Wave Stochastic Artificial Neuron for Emulating Neural Statistical Properties. <i>Nano Letters</i> , 2021 , 21, 3465-3472	11.5	4
26	Epitaxial growth and electrical properties of VO ₂ on [LaAlO ₃] _{0.3} [Sr ₂ AlTaO ₆] _{0.7} (111) substrate. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2018 , 36, 061506	2.9	4
25	Tri-Gate GaN Junction HEMTs: Physics and Performance Space. <i>IEEE Transactions on Electron Devices</i> , 2021 , 68, 4854-4861	2.9	4
24	Memristive Device Characteristics Engineering by Controlling the Crystallinity of Switching Layer Materials. <i>ACS Applied Electronic Materials</i> , 2020 , 2, 1529-1537	4	3
23	Defect tolerance in CsPbI ₃ : reconstruction of the potential energy landscape and band degeneracy in spin-orbit coupling. <i>Journal of Materials Chemistry A</i> , 2022 , 10, 3018-3024	13	3
22	Reconfigurable Stochastic neurons based on tin oxide/MoS hetero-memristors for simulated annealing and the Boltzmann machine. <i>Nature Communications</i> , 2021 , 12, 5710	17.4	3

21	Black Phosphorous: Nanoscopy of Black Phosphorus Degradation (Adv. Mater. Interfaces 12/2016). <i>Advanced Materials Interfaces</i> , 2016 , 3,	4.6	2
20	Investigating extreme ultraviolet radiation chemistry with first-principles quantum chemistry calculations. <i>Journal of Micro/ Nanolithography, MEMS, and MOEMS</i> , 2020 , 19,	0.7	2
19	Effective doping control in Sm-doped BiFeO thin films deposition temperature.. <i>RSC Advances</i> , 2020 , 10, 40229-40233	3.7	2
18	Ultra-high heating rate effects on the sintering of ceramic nanoparticles: an in situ TEM study. <i>Materials Research Letters</i> , 2021 , 9, 373-381	7.4	2
17	Nano-optoelectrodes Integrated with Flexible Multifunctional Fiber Probes by High-Throughput Scalable Fabrication. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 9156-9165	9.5	2
16	Two-dimensional materials for ubiquitous electronics 2013 ,		1
15	Low voltage control of magnetism in BaFe _{10.2} Sc _{1.8} O ₁₉ /BaTiO ₃ bilayer epitaxial thin film at temperatures up to 390 K. <i>Applied Physics Letters</i> , 2022 , 120, 062401	3.4	1
14	Investigating EUV radiation chemistry with first principle quantum chemistry calculations 2019 ,		1
13	Ceramic Material Processing Towards Future Space Habitat: Electric Current-Assisted Sintering of Lunar Regolith Simulant. <i>Materials</i> , 2020 , 13,	3.5	1
12	Electrical properties and charge compensation mechanisms of Cr-doped rutile, TiO. <i>Physical Chemistry Chemical Physics</i> , 2021 , 23, 22133-22146	3.6	1
11	Two-dimensional Materials for Electronic Applications 2018 , 55-90		1
10	Molecule Sensing: Sculpting Extreme Electromagnetic Field Enhancement in Free Space for Molecule Sensing (Small 33/2018). <i>Small</i> , 2018 , 14, 1870152	11	1
9	Impact Ionization and Interface Trap Generation in 28-nm MOSFETs at Cryogenic Temperatures. <i>IEEE Transactions on Device and Materials Reliability</i> , 2018 , 18, 456-462	1.6	1
8	Defects in Statically Unstable Solids: The Case for Cubic Perovskite RCsPbI_3 . <i>Chinese Physics Letters</i> , 2022 , 39, 046101	1.8	1
7	Spin-Phonon Coupling in Ferromagnetic Monolayer Chromium Tribromide.. <i>Advanced Materials</i> , 2022 , e2108506	24	1
6	Circuit Level Memory Technologies and Applications based on 2D Materials. <i>Advanced Materials</i> , 2020 , 32, 2023714	14	1
5	Strain Effects on the Growth of LaSrMnO (LSMO)-NiO Nanocomposite Thin Films via Substrate Control. <i>ACS Omega</i> , 2020 , 5, 23793-23798	3.9	0
4	Linking far-from-equilibrium defect structures in ceramics to electromagnetic driving forces. <i>Journal of Materials Chemistry A</i> , 2021 , 9, 8425-8434	13	0

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| 3 | Monolayer ScCF as a Potential Selective and Sensitive NO Sensor: Insight from First-Principles Calculations.. <i>ACS Omega</i> , 2022 , 7, 9267-9275 | 3.9 | o |
| 2 | Conical intersection and coherent vibrational dynamics in alkyl iodides captured by attosecond transient absorption spectroscopy.. <i>Journal of Chemical Physics</i> , 2022 , 156, 114304 | 3.9 | o |
| 1 | Integration of Self-Assembled BaZrO ₃ -Co Vertically Aligned Nanocomposites on Mica Substrates toward Flexible Spintronics. <i>Crystal Growth and Design</i> , 2022 , 22, 718-725 | 3.5 | o |