Hao Zhu

List of Publications by Year
in descending order

86	2,324	172207	233125
papers	citations	29 h-index	45 g-index

86	86	86	2843
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Ultra-low power Hf_{0.5}Zr_{0.5}O₂ based ferroelectric tunnel junction synapses for hardware neural network applications. Nanoscale, 2018, 10, 15826-15833.	2.8	165
2	Three-Dimensional Nanoscale Flexible Memristor Networks with Ultralow Power for Information Transmission and Processing Application. Nano Letters, 2020, 20, 4111-4120.	4.5	134
3	Integrated In-Sensor Computing Optoelectronic Device for Environment-Adaptable Artificial Retina Perception Application. Nano Letters, 2022, 22, 81-89.	4.5	104
4	Influence of Metalâ€“MoS₂ Interface on MoS₂ Transistor Performance: Comparison of Ag and Ti Contacts. ACS Applied Materials & Interfaces, 2015, 7, 1180-1187.	4.0	97
5	Ultralow Power Wearable Heterosynapse with Photoelectric Synergistic Modulation. Advanced Science, 2020, 7, 1903480.	5.6	95
6	Topological Insulator Bi2Se3 Nanowire High Performance Field-Effect Transistors. Scientific Reports, 2013, 3, .	1.6	73
7	Flexible boron nitride-based memristor forin situdigital and analogue neuromorphic computing applications. Materials Horizons, 2021, 8, 538-546.	6.4	73
8	Flexible Electronic Synapses for Face Recognition Application with Multimodulated Conductance States. ACS Applied Materials & Interfaces, 2018, 10, 37345-37352.	4.0	72
9	Reconfigurable optoelectronic memristor for in-sensor computing applications. Nano Energy, 2021, 89, 106291.	8.2	66
10	A two-dimensional semiconductor transistor with boosted gate control and sensing ability. Science Advances, 2017, 3, e1602246.	4.7	65
11	A Dualâ€Gate MoS₂ Photodetector Based on Interface Coupling Effect. Small, 2020, 16, e1904369.	5.2	65
12	Redox-Active Molecular Nanowire Flash Memory for High-Endurance and High-Density Nonvolatile Memory Applications. ACS Applied Materials & Interfaces, 2015, 7, 27306-27313.	4.0	59
13	Flexible <scp>3D</scp> memristor array for binary storage and multiâ€states neuromorphic computing applications. InformaÄnÃ-MateriÃ¡ly, 2021, 3, 212-221.	8.5	52
14	Realizing Stable p-Type Transporting in Two-Dimensional WS₂ Films. ACS Applied Materials & Interfaces, 2017, 9, 18215-18221.	4.0	47
15	An in-memory computing architecture based on two-dimensional semiconductors for multiply-accumulate operations. Nature Communications, 2021, 12, 3347.	5.8	46
16	A computational study of the electronic properties of one-dimensional armchair phosphorene nanotubes. Journal of Applied Physics, 2015, 118, .	1.1	45
17	Topâ€Down Integration of Molybdenum Disulfide Transistors with Waferâ€Scale Uniformity and Layer Controllability. Small, 2017, 13, 1603157.	5.2	45
18	Improved integration of ultra-thin high-k dielectrics in few-layer MoS2 FET by remote forming gas plasma pretreatment. Applied Physics Letters, 2017, 110, .	1.5	44

#	Article	IF	Citations
19	Forming-free flexible memristor with multilevel storage for neuromorphic computing by full PVD technique. Journal of Materials Science and Technology, 2021, 60, 21-26.	5.6	43
20	Synthesis of large-scale few-layer PtS2 films by chemical vapor deposition. AIP Advances, 2019, 9, .	0.6	42
21	Energy-efficient flexible photoelectric device with 2D/0D hybrid structure for bio-inspired artificial heterosynapse application. Nano Energy, 2021, 83, 105815.	8.2	42
22	Fully transparent, flexible and waterproof synapses with pattern recognition in organic environments. Nanoscale Horizons, 2019, 4, 1293-1301.	4.1	40
23	Atomic Layer Deposited Hf0.5Zr0.5O2-based Flexible Memristor with Short/Long-Term Synaptic Plasticity. Nanoscale Research Letters, 2019, 14, 102.	3.1	38
24	Wafer-scale transferred multilayer MoS₂ for high performance field effect transistors. Nanotechnology, 2019, 30, 174002.	1.3	37
25	MoS₂-based Charge-trapping synaptic device with electrical and optical modulated conductance. Nanophotonics, 2020, 9, 2475-2486.	2.9	36
26	Gas sensing devices based on two-dimensional materials: a review. Nanotechnology, 2022, 33, 252001.	1.3	36
27	Flexible organic field-effect transistor arrays for wearable neuromorphic device applications. Nanoscale, 2020, 12, 23150-23158.	2.8	33
28	Room-temperature developed flexible biomemristor with ultralow switching voltage for array learning. Nanoscale, 2020, 12, 9116-9123.	2.8	33
29	Ultralow Power Wearable Organic Ferroelectric Device for Optoelectronic Neuromorphic Computing. Nano Letters, 2022, 22, 6435-6443.	4.5	32
30	Impact of Metal Contacts on the Performance of Multilayer HfS₂ Field-Effect Transistors. ACS Applied Materials & Interfaces, 2017, 9, 26996-27003.	4.0	30
31	High performance few-layer MoS ₂ transistor arrays with wafer level homogeneity integrated by atomic layer deposition. 2D Materials, 2018, 5, 015028.	2.0	30
32	Ferroelectric HfZrOx-based MoS2 negative capacitance transistor with ITO capping layers for steep-slope device application. Applied Physics Letters, 2018, 112, .	1.5	28
33	A Symmetric Tunnel Field-Effect Transistor Based on MoS₂/Black Phosphorus/MoS₂ Nanolayered Heterostructures. ACS Applied Nano Materials, 2019, 2, 5674-5680.	2.4	27
34	Discrete charge states in nanowire flash memory with multiple Ta2O5 charge-trapping stacks. Applied Physics Letters, 2014, 104, .	1.5	25
35	Atomic layer deposited 2D MoS2 atomic crystals: from material to circuit. Nano Research, 2020, 13, 1644-1650.	5.8	24
36	Ferroelectric Field-Effect Transistors Based on WSe₂/CuInP₂S₆ Heterostructures for Memory Applications. ACS Applied Electronic Materials, 2021, 3, 4711-4717.	2.0	23

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37	Realizing an Omega-Shaped Gate MoS₂ Field-Effect Transistor Based on a SiO₂/MoS₂ Coreâ€“Shell Heterostructure. ACS Applied Materials & Interfaces, 2020, 12, 14308-14314.	4.0	22
38	Novel Two-Dimensional Mechano-Electric Generators and Sensors Based on Transition Metal Dichalcogenides. Scientific Reports, 2015, 5, 12854.	1.6	21
39	A high-speed 2D optoelectronic in-memory computing device with 6-bit storage and pattern recognition capabilities. Nano Research, 2022, 15, 2472-2478.	5.8	20
40	Non-volatile memory with self-assembled ferrocene charge trapping layer. Applied Physics Letters, 2013, 103, .	1.5	19
41	Multifunctional black phosphorus/MoS₂ van der Waals heterojunction. Nanophotonics, 2020, 9, 2487-2493.	2.9	17
42	Fastâ€Response Inverter Arrays Built on Waferâ€Scale MoS₂ by Atomic Layer Deposition. Physica Status Solidi - Rapid Research Letters, 2019, 13, 1900018.	1.2	16
43	Laterally Coupled 2D MoS₂ Synaptic Transistor With Ion Gating. IEEE Electron Device Letters, 2020, 41, 1424-1427.	2.2	16
44	Optimization of Defects in Large-Area Synthetic MoS₂ Thin Films by CS₂ Treatment for Switching and Sensing Devices. ACS Applied Nano Materials, 2019, 2, 7810-7818.	2.4	15
45	HfZrOâ„-Based Ferroelectric Tunnel Junction With Crested Symmetric Band Structure Engineering. IEEE Electron Device Letters, 2021, 42, 1311-1314.	2.2	15
46	Organic Optoelectronic Synaptic Devices for Energy-Efficient Neuromorphic Computing. IEEE Electron Device Letters, 2022, 43, 1089-1092.	2.2	14
47	Hafnium Oxideâ€Based Ferroelectric Devices for Computingâ€inâ€Memory Applications. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2000635.	0.8	13
48	Stateful Logic Operations Implemented With Graphite Resistive Switching Memory. IEEE Electron Device Letters, 2018, 39, 607-609.	2.2	12
49	ReS2 Charge Trapping Synaptic Device for Face Recognition Application. Nanoscale Research Letters, 2020, 15, 2.	3.1	12
50	Growth Mechanisms and Morphology Engineering of Atomic Layer-Deposited WS₂. ACS Applied Materials & Interfaces, 2021, 13, 43115-43122.	4.0	12
51	CMOS back-end compatible memristors for in situ digital and neuromorphic computing applications. Materials Horizons, 2021, 8, 3345-3355.	6.4	12
52	MoS₂-on-AlN Enables High-Performance MoS₂ Field-Effect Transistors through Strain Engineering. ACS Applied Materials & Interfaces, 2020, 12, 54972-54979.	4.0	11
53	High-Performance ReS2 FET for Optoelectronics and Flexible Electronics Applications. IEEE Electron Device Letters, 2019, 40, 123-126.	2.2	10
54	MoS2-based ferroelectric field-effect transistor with atomic layer deposited Hf0.5Zr0.5O2 films toward memory applications. AIP Advances, 2020, 10, .	0.6	10

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55	Controlled growth of MoS2 by atomic layer deposition on patterned gold pads. Journal of Crystal Growth, 2020, 541, 125683.	0.7	10
56	Ultralow-Power Synaptic Transistor Based on Wafer-Scale MoS₂ Thin Film for Neuromorphic Application. IEEE Electron Device Letters, 2021, 42, 1555-1558.	2.2	10
57	Light-erasable embedded charge-trapping memory based on MoS2 for system-on-panel applications. Applied Physics Letters, 2017, 111, .	1.5	8
58	NBTI Mitigation by Optimized HKMG Thermal Processing in a FinFET Technology. IEEE Transactions on Electron Devices, 2022, 69, 905-909.	1.6	8
59	Improving Low-Frequency Noise in 14-nm FinFET by Optimized High-k/Metal Gate Thermal Processing. IEEE Electron Device Letters, 2021, 42, 1112-1115.	2.2	6
60	Precise CO₂ Reduction for Bilayer Graphene. ACS Central Science, 2022, 8, 394-401.	5.3	6
61	Feasibility of Large-Scale MoS₂ Thin-Film Transistors on a GaN Substrate. ACS Applied Electronic Materials, 2019, 1, 1418-1423.	2.0	5
62	Ni-assisted crystallization of few-layer transition metal dichalcogenide ultra-thin films. Journal of Materials Science: Materials in Electronics, 2019, 30, 4085-4092.	1.1	5
63	Large-Scale Multilayer MoS₂ Nanosheets Grown by Atomic Layer Deposition for Sensitive Photodetectors. ACS Applied Nano Materials, 2022, 5, 10431-10440.	2.4	5
64	Thickness Dependence of Low-Frequency Noise in MoS₂ Field-Effect Transistors With Enhanced Back-Gate Control. IEEE Electron Device Letters, 2018, 39, 739-741.	2.2	4
65	Observation and control of the anomalous Aharonov-Bohm oscillation in enhanced-mode topological insulator nanowire field-effect transistors. Applied Physics Letters, 2019, 115, 073107.	1.5	4
66	Suppression of Stress-Induced Defects in FinFET by Implantation and STI Co-Optimization. IEEE Transactions on Electron Devices, 2021, 68, 2587-2589.	1.6	4
67	Performance improvement in p-Type WS₂ field-effect transistors with 1T phase contacts. Nanotechnology, 2021, 32, 345202.	1.3	4
68	Multifunctional Logicâ€inâ€Memory Cell Based on Waferâ€Scale MoS₂ Thin Films Prepared by Atomic Layer Deposition. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	1.2	4
69	Dirac fermions induced in strained zigzag phosphorus nanotubes and their applications in field effect transistors. Physical Chemistry Chemical Physics, 2016, 18, 32521-32527.	1.3	3
70	Homogeneous dual-gate MoS2 field-effect transistors integrated by atomic layer deposition-based film synthesis. Journal of Materials Science: Materials in Electronics, 2020, 31, 5485-5491.	1.1	3
71	High-Performance Lateral Avalanche Photodiode Based on Silicon-on-Insulator Structure. IEEE Electron Device Letters, 2022, 43, 1077-1080.	2.2	3
72	Amorphous semi-insulating Al-doped In2O3 growth by atomic layer deposition for thin-film transistors. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2022, 40, .	0.9	3

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73	High performance topological insulator nanowire field-effect transistors. , 2013, , .		2
74	Observation of different transport behaviors in a two-dimensional MoTe2 field-effect transistor with engineered gate stack. Microelectronic Engineering, 2021, 237, 111497.	1.1	2
75	A Transistor-Level DFF Based on FinFET Technology for Low Power Integrated Circuits. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 584-588.	2.2	2
76	A Simple I-ToF Module Based on Avalanche Photodiode. IEEE Photonics Technology Letters, 2021, 33, 123-126.	1.3	2
77	Channel-protecting fabrication of top-gate MoS2 transistor arrays. Semiconductor Science and Technology, 2020, 35, 075006.	1.0	2
78	Multibit non-volatile memory based on WS2 transistor with engineered gate stack. AIP Advances, 2020, 10, .	0.6	2
79	A Semi-Floating Gate Transistor with Enhanced Embedded Tunneling Field Effect Transistor. IEEE Electron Device Letters, 2018, , 1-1.	2.2	1
80	Backside passivation for improving the noise performance in CMOS image sensor. AIP Advances, 2020, 10, .	0.6	1
81	Gate Oxide and Implantation Process Co-Optimization for Low-Power MCU Applications. IEEE Journal of the Electron Devices Society, 2021, 9, 1055-1059.	1.2	1
82	Band alignment of atomic layer deposited MoS₂/(HfO₂)_x(Al₂O₃)_{1â^'x} heterojunctions for device applications. Journal Physics D: Applied Physics, 2022, 55, 225102.	1.3	1
83	Self-aligned multi-channel silicon nanowire field-effect transistors. , 2011, , .		0
84	An Enhanced Floating Gate Memory for the Online Training of Analog Neural Networks. IEEE Journal of the Electron Devices Society, 2020, 8, 84-91.	1.2	0
85	Design of Reading Circuit for High-Reliability 55-nm Split-Gate SuperFlash Technology. IEEE Solid-State Circuits Letters, 2021, 4, 117-120.	1.3	0
86	Mitigating the Length of Diffusion Effect by Back-End Design-Technology Cooptimization. IEEE Transactions on Electron Devices, 2022, 69, 1279-1283.	1.6	0