Zhihong Chen

List of Publications by Year
in descending order

99 papers	12,402 citations	117571 34 h-index	69214 77 g-index
99 all docs	99 docs citations	99 times ranked	14229 citing authors

#	Article	IF	Citations
1	Utilizing Valleyâ€"Spin Hall Effect in Monolayer WSe₂ for Designing Low Power Nonvolatile Spintronic Devices and Flip-Flops. IEEE Transactions on Electron Devices, 2022, 69, 1667-1676.	1.6	3
2	Air-Stable P-Doping in Record High-Performance Monolayer WSe₂ Devices. IEEE Electron Device Letters, 2022, 43, 319-322.	2.2	25
3	Electric field control of interaction between magnons and quantum spin defects. Physical Review Research, 2022, 4, .	1.3	8
4	Spinâ€"orbit torque controlled stochastic oscillators with synchronization and frequency tunability. Journal of Applied Physics, 2022, 131, 123901.	1.1	0
5	Thickness-Dependent Study of High- Performance WS₂-FETs With Ultrascaled Channel Lengths. IEEE Transactions on Electron Devices, 2021, 68, 2123-2129.	1.6	11
6	Modeling and Circuit Analysis of Interconnects with TaS₂ Barrier/Liner. , 2021, , .		3
7	Mobility Extraction in 2D Transition Metal Dichalcogenide Devicesâ€"Avoiding Contact Resistance Implicated Overestimation. Small, 2021, 17, e2100940.	5.2	14
8	Memory applications from 2D materials. Applied Physics Reviews, 2021, 8, 021306.	5.5	46
9	Process Variation Sensitivity of Spin-Orbit Torque Perpendicular Nanomagnets in DBNs. IEEE Transactions on Magnetics, 2021, 57, 1-8.	1.2	2
10	Steep slope carbon nanotube tunneling field-effect transistor. Carbon, 2021, 180, 237-243.	5.4	11
11	Friction force reduction for electrical terminals using graphene coating. Nanotechnology, 2021, 32, 035704.	1.3	5
12	Materials for interconnects. MRS Bulletin, 2021, 46, 959-966.	1.7	33
13	Transistors based on two-dimensional materials for future integrated circuits. Nature Electronics, 2021, 4, 786-799.	13.1	335
14	High-Peformance BEOL-Compatible Atomic-Layer-Deposited In₂O₃ Fe-FETs Enabled by Channel Length Scaling down to 7 nm: Achieving Performance Enhancement with Large Memory Window of 2.2 V, Long Retention > 10 years and High Endurance > 10⁸ Cycles. , 2021, , .		8
15	Dynamically tunable thermal transport in polycrystalline graphene by strain engineering. Carbon, 2020, 158, 63-68.	5.4	19
16	Utilizing Valley-Spin Hall Effect in WSe₂ for Low Power Non-Volatile Flip-Flop Design. , 2020, , .		1
17	Hardware implementation of Bayesian network building blocks with stochastic spintronic devices. Scientific Reports, 2020, 10, 16002.	1.6	19
18	Opportunities and challenges of 2D materials in back-end-of-line interconnect scaling. Journal of Applied Physics, 2020, 128, .	1.1	36

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19	Electrically-Tunable Stochasticity for Spin-based Neuromorphic Circuits: Self-Adjusting to Variation. , 2020, , .		0
20	Experimental observation of coupled valley and spin Hall effect in pâ€doped WSe₂ devices. InformaÄnÃ-MateriÃ¡ly, 2020, 2, 968-974.	8.5	13
21	From Charge to Spin and Spin to Charge: Stochastic Magnets for Probabilistic Switching. Proceedings of the IEEE, 2020, 108, 1322-1337.	16.4	19
22	Atomically Controlled Tunable Doping in Highâ€Performance WSe₂ Devices. Advanced Electronic Materials, 2020, 6, 1901304.	2.6	46
23	Monolayer WSe2 induced giant enhancement in the spin Hall efficiency of Tantalum. Npj 2D Materials and Applications, 2020, 4, .	3.9	10
24	Doping Induced Schottky Barrier Realignment For Unipolar and High Hole Current WSe2 Devices with > 10 8 On/off Ratio. IEEE Electron Device Letters, 2020, , 1-1.	2.2	6
25	Correlated fluctuations in spin orbit torque coupled perpendicular nanomagnets. Physical Review B, 2020, 101, .	1.1	22
26	Valley-Coupled-Spintronic Non-Volatile Memories With Compute-In-Memory Support. IEEE Nanotechnology Magazine, 2020, 19, 635-647.	1.1	7
27	MoS₂ for Enhanced Electrical Performance of Ultrathin Copper Films. ACS Applied Materials & Interfaces, 2019, 11, 28345-28351.	4.0	24
28	Incorporating Niobium in MoS₂ at BEOLâ€Compatible Temperatures and its Impact on Copper Diffusion Barrier Performance. Advanced Materials Interfaces, 2019, 6, 1901055.	1.9	12
29	WSe₂ Homojunction Devices: Electrostatically Configurable as Diodes, MOSFETs, and Tunnel FETs for Reconfigurable Computing. Small, 2019, 15, e1902770.	5.2	23
30	Enhancing Interconnect Reliability and Performance by Converting Tantalum to 2D Layered Tantalum Sulfide at Low Temperature. Advanced Materials, 2019, 31, e1902397.	11.1	35
31	Direct observation of valley-coupled topological current in MoS ₂. Science Advances, 2019, 5, eaau6478.	4.7	34
32	Electrical Annealing and Stochastic Resonance in Low Barrier Perpendicular Nanomagnets for Oscillatory Neural Networks. , 2019, , .		2
33	Atomically Thin p-doping Layer and Record High Hole Current on WSe₂. , 2019, , .		1
34	Controlled doping of transition metal dichalcogenides by metal work function tuning in phthalocyanine compounds. Nanoscale, 2018, 10, 5148-5153.	2.8	30
35	First Demonstration of WSe<inf>2</inf> Based CMOS-SRAM. , 2018, , .		13
36	Spin-torque devices with hard axis initialization as Stochastic Binary Neurons. Scientific Reports, 2018, 8, 16689.	1.6	28

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37	Tunable Random Number Generation Using Single Superparamagnet with Perpendicular Magnetic Anisotropy. , 2018, , .		4
38	Large-Area, Single-Layer Molybdenum Disulfide Synthesized at BEOL Compatible Temperature as Cu Diffusion Barrier. IEEE Electron Device Letters, 2018, 39, 873-876.	2.2	22
39	Design of Stochastic Nanomagnets for Probabilistic Spin Logic. IEEE Magnetics Letters, 2018, 9, 1-5.	0.6	29
40	Experimental Demonstration of a Spin Logic Device with Deterministic and Stochastic Mode of Operation. Scientific Reports, 2018, 8, 11405.	1.6	12
41	BEOL compatible sub-nm diffusion barrier for advanced Cu interconnects. , 2018, , .		5
42	Research Update: Recent progress on 2D materials beyond graphene: From ripples, defects, intercalation, and valley dynamics to straintronics and power dissipation. APL Materials, 2018, 6, .	2.2	30
43	Resist-free fabricated carbon nanotube field-effect transistors with high-quality atomic-layer-deposited platinum contacts. Applied Physics Letters, 2017, 110, .	1.5	11
44	Transfer-free multi-layer graphene as a diffusion barrier. Nanoscale, 2017, 9, 1827-1833.	2.8	40
45	BEOL compatible 2D layered materials as ultra-thin diffusion barriers for Cu interconnect technology. , 2017, , .		5
46	Studies of two-dimensional h-BN and MoS2 for potential diffusion barrier application in copper interconnect technology. Npj 2D Materials and Applications, 2017, 1, .	3.9	57
47	Atomically thin diffusion barriers for ultra-scaled Cu interconnects implemented by 2D materials. , 2017, , .		7
48	Molecular doping of transition metal dichalcogenides using metal phythalocyanines. , 2017, , .		1
49	Electrically tunable bandgaps in 2D layered materials. , 2016, , .		0
50	Experimental demonstration of nanomagnet networks as hardware for Ising computing. , 2016, , .		31
51	Configurable Electrostatically Doped High Performance Bilayer Graphene Tunnel FET. IEEE Journal of the Electron Devices Society, 2016, 4, 124-128.	1.2	40
52	Nanoscale thermometry with fluorescent yttrium-based Er/Yb-doped fluoride nanocrystals. Sensors and Actuators A: Physical, 2016, 250, 71-77.	2.0	19
53	Optical Relaxation Time Enhancement in Graphene-Passivated Metal Films. Scientific Reports, 2016, 6, 30519.	1.6	2
54	Impact of Scaling on the Dipolar Coupling in Magnetâ€“Insulatorâ€“Magnet Structures. IEEE Transactions on Magnetics, 2016, 52, 1-7.	1.2	4

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55	Bandgap engineering in 2D layered materials. , 2015, , .		0
56	Spin-torque switching of a nano-magnet using giant spin hall effect. AIP Advances, 2015, 5, 107144.	0.6	4
57	Electrically Tunable Bandgaps in Bilayer MoS₂. Nano Letters, 2015, 15, 8000-8007.	4.5	161
58	Ultra-dark graphene stack metamaterials. Applied Physics Letters, 2015, 106, .	1.5	11
59	Enhanced Electrical and Thermal Conduction in Graphene-Encapsulated Copper Nanowires. Nano Letters, 2015, 15, 2024-2030.	4.5	199
60	Comparison of graphene growth on arbitrary non-catalytic substrates using low-temperature PECVD. Carbon, 2015, 93, 393-399.	5.4	64
61	Achieving large transport bandgaps in bilayer graphene. Nano Research, 2015, 8, 3228-3236.	5.8	11
62	Understanding the Electrical Impact of Edge Contacts in Few-Layer Graphene. ACS Nano, 2014, 8, 3584-3589.	7.3	51
63	Improvement of Spin Transfer Torque in Asymmetric Graphene Devices. ACS Nano, 2014, 8, 3807-3812.	7.3	22
64	Carbon nanotubes for high-performance logic. MRS Bulletin, 2014, 39, 719-726.	1.7	11
65	Spin Transfer Torque in a Graphene Lateral Spin Valve Assisted by an External Magnetic Field. Nano Letters, 2013, 13, 5177-5181.	4.5	42
66	Anisotropic Debye model for the thermal boundary conductance. Physical Review B, 2013, 87, .	1.1	54
67	Optimized spin relaxation length in few layer graphene at room temperature. , 2012, , .		7
68	Graphene nanomesh contacts and its transport properties. , 2012, , .		2
69	Properties of Metalâ€“Graphene Contacts. IEEE Nanotechnology Magazine, 2012, 11, 513-519.	1.1	42
70	Channel-Length-Dependent Transport Behaviors of Graphene Field-Effect Transistors. IEEE Electron Device Letters, 2011, 32, 812-814.	2.2	64
71	Length scaling of carbon nanotube transistors. Nature Nanotechnology, 2010, 5, 858-862.	15.6	378
72	Current Scaling in Aligned Carbon Nanotube Array Transistors With Local Bottom Gating. IEEE Electron Device Letters, 2010, 31, 644-646.	2.2	37

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73	Thermal contact resistance between graphene and silicon dioxide. Applied Physics Letters, 2009, 95, .	1.5	289
74	Can carbon nanotube transistors be scaled without performance degradation?. , 2009, , .		8
75	Energy Dissipation in Graphene Field-Effect Transistors. Nano Letters, 2009, 9, 1883-1888.	4.5	339
76	Carbon-based electronics. , 2009, , 174-184.		17
77	Electrical observation of subband formation in graphene nanoribbons. Physical Review B, 2008, 78, .	1.1	199
78	Mobility extraction and quantum capacitance impact in high performance graphene field-effect transistor devices. , 2008, , .		50
79	Externally Assembled Gate-All-Around Carbon Nanotube Field-Effect Transistor. IEEE Electron Device Letters, 2008, 29, 183-185.	2.2	104
80	1/f Noise in Carbon Nanotube Devicesâ€"On the Impact of Contacts and Device Geometry. IEEE Nanotechnology Magazine, 2007, 6, 368-373.	1.1	38
81	Chemically Assisted Directed Assembly of Carbon Nanotubes for the Fabrication of Large-Scale Device Arrays. Journal of the American Chemical Society, 2007, 129, 11964-11968.	6.6	66
82	Gate Work Function Engineering for Nanotube-Based Circuits. Digest of Technical Papers - IEEE International Solid-State Circuits Conference, 2007, , .	0.0	6
83	Electrical transport and noise in semiconducting carbon nanotubes. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 37, 72-77.	1.3	27
84	Graphene nano-ribbon electronics. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 40, 228-232.	1.3	1,410
85	Carbon-based electronics. Nature Nanotechnology, 2007, 2, 605-615.	15.6	2,272
86	Low-Frequency Current Fluctuations in Individual Semiconducting Single-Wall Carbon Nanotubes. Nano Letters, 2006, 6, 930-936.	4.5	122
87	An Integrated Logic Circuit Assembled on a Single Carbon Nanotube. Science, 2006, 311, 1735-1735.	6.0	514
88	Comparing Carbon Nanotube Transistorsâ€"The Ideal Choice: A Novel Tunneling Device Design. IEEE Transactions on Electron Devices, 2005, 52, 2568-2576.	1.6	291
89	The Role of Metalâˆ'Nanotube Contact in the Performance of Carbon Nanotube Field-Effect Transistors. Nano Letters, 2005, 5, 1497-1502.	4.5	621
90	High-performance dual-gate carbon nanotube FETs with 40-nm gate length. IEEE Electron Device Letters, 2005, 26, 823-825.	2.2	107

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91	Wide Range Optical Studies on Transparent SWNT Films. AIP Conference Proceedings, 2004, , .	0.3	1
92	Transparent, Conductive Carbon Nanotube Films. Science, 2004, 305, 1273-1276.	6.0	2,797
93	Single Wall Carbon Nanotubes for p-Type Ohmic Contacts to GaN Light-Emitting Diodes. Nano Letters, 2004, 4, 911-914.	4.5	100
94	Metallic/Semiconducting Nanotube Separation and Ultra-thin, Transparent Nanotube Films. AIP Conference Proceedings, 2004, , .	0.3	5
95	Bulk Separative Enrichment in Metallic or Semiconducting Single-Walled Carbon Nanotubes. Nano Letters, 2003, 3, 1245-1249.	4.5	246
96	Length sorting cut single wall carbon nanotubes by high performance liquid chromatography. Chemical Physics Letters, 2002, 363, 111-116.	1.2	121
97	Design and optimization of dual-threshold circuits for low-voltage low-power applications. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 1999, 7, 16-24.	2.1	249
98	Cloning and improving the expression ofPichia stipitis xylose reductase gene inSaccharomyces cerevisiae. Applied Biochemistry and Biotechnology, 1993, 39-40, 135-147.	1.4	19
99	Graphene Coating as a Corrosion Protection Barrier for Metallic Terminals in Automotive Environments. SAE International Journal of Advances and Current Practices in Mobility, 0, 3, 3176-3183.	2.0	1