Zhihong Chen

List of Publications by Year in descending order

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99 papers	12,402 citations	117453 34 h-index	69108 77 g-index
99 all docs	99 docs citations	99 times ranked	14229 citing authors

#	Article	IF	Citations
1	Transparent, Conductive Carbon Nanotube Films. Science, 2004, 305, 1273-1276.	6.0	2,797
2	Carbon-based electronics. Nature Nanotechnology, 2007, 2, 605-615.	15.6	2,272
3	Graphene nano-ribbon electronics. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 40, 228-232.	1.3	1,410
4	The Role of Metalâ"Nanotube Contact in the Performance of Carbon Nanotube Field-Effect Transistors. Nano Letters, 2005, 5, 1497-1502.	4.5	621
5	An Integrated Logic Circuit Assembled on a Single Carbon Nanotube. Science, 2006, 311, 1735-1735.	6.0	514
6	Length scaling of carbon nanotube transistors. Nature Nanotechnology, 2010, 5, 858-862.	15.6	378
7	Energy Dissipation in Graphene Field-Effect Transistors. Nano Letters, 2009, 9, 1883-1888.	4.5	339
8	Transistors based on two-dimensional materials for future integrated circuits. Nature Electronics, 2021, 4, 786-799.	13.1	335
9	Comparing Carbon Nanotube Transistorsâ€"The Ideal Choice: A Novel Tunneling Device Design. IEEE Transactions on Electron Devices, 2005, 52, 2568-2576.	1.6	291
10	Thermal contact resistance between graphene and silicon dioxide. Applied Physics Letters, 2009, 95, .	1.5	289
11	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
12	Bulk Separative Enrichment in Metallic or Semiconducting Single-Walled Carbon Nanotubes. Nano Letters, 2003, 3, 1245-1249.	4.5	246
13	Electrical observation of subband formation in graphene nanoribbons. Physical Review B, 2008, 78, .	1.1	199
14	Enhanced Electrical and Thermal Conduction in Graphene-Encapsulated Copper Nanowires. Nano Letters, 2015, 15, 2024-2030.	4.5	199
15	Electrically Tunable Bandgaps in Bilayer MoS₂. Nano Letters, 2015, 15, 8000-8007.	4.5	161
16	Low-Frequency Current Fluctuations in Individual Semiconducting Single-Wall Carbon Nanotubes. Nano Letters, 2006, 6, 930-936.	4.5	122
17	Length sorting cut single wall carbon nanotubes by high performance liquid chromatography. Chemical Physics Letters, 2002, 363, 111-116.	1.2	121
18	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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19	Externally Assembled Gate-All-Around Carbon Nanotube Field-Effect Transistor. IEEE Electron Device Letters, 2008, 29, 183-185.	2.2	104
20	Single Wall Carbon Nanotubes for p-Type Ohmic Contacts to GaN Light-Emitting Diodes. Nano Letters, 2004, 4, 911-914.	4.5	100
21	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
22	Channel-Length-Dependent Transport Behaviors of Graphene Field-Effect Transistors. IEEE Electron Device Letters, 2011, 32, 812-814.	2.2	64
23	Comparison of graphene growth on arbitrary non-catalytic substrates using low-temperature PECVD. Carbon, 2015, 93, 393-399.	5.4	64
24	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
25	Anisotropic Debye model for the thermal boundary conductance. Physical Review B, 2013, 87, .	1.1	54
26	Understanding the Electrical Impact of Edge Contacts in Few-Layer Graphene. ACS Nano, 2014, 8, 3584-3589.	7.3	51
27	Mobility extraction and quantum capacitance impact in high performance graphene field-effect transistor devices. , 2008, , .		50
28	Atomically Controlled Tunable Doping in Highâ€Performance WSe₂ Devices. Advanced Electronic Materials, 2020, 6, 1901304.	2.6	46
29	Memory applications from 2D materials. Applied Physics Reviews, 2021, 8, 021306.	5.5	46
30	Properties of Metalâ€“Graphene Contacts. IEEE Nanotechnology Magazine, 2012, 11, 513-519.	1.1	42
31	Spin Transfer Torque in a Graphene Lateral Spin Valve Assisted by an External Magnetic Field. Nano Letters, 2013, 13, 5177-5181.	4.5	42
32	Configurable Electrostatically Doped High Performance Bilayer Graphene Tunnel FET. IEEE Journal of the Electron Devices Society, 2016, 4, 124-128.	1.2	40
33	Transfer-free multi-layer graphene as a diffusion barrier. Nanoscale, 2017, 9, 1827-1833.	2.8	40
34	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
35	Current Scaling in Aligned Carbon Nanotube Array Transistors With Local Bottom Gating. IEEE Electron Device Letters, 2010, 31, 644-646.	2.2	37
36	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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37	Enhancing Interconnect Reliability and Performance by Converting Tantalum to 2D Layered Tantalum Sulfide at Low Temperature. Advanced Materials, 2019, 31, e1902397.	11.1	35
38	Direct observation of valley-coupled topological current in MoS ₂. Science Advances, 2019, 5, eaau6478.	4.7	34
39	Materials for interconnects. MRS Bulletin, 2021, 46, 959-966.	1.7	33
40	Experimental demonstration of nanomagnet networks as hardware for Ising computing. , 2016, , .		31
41	Controlled doping of transition metal dichalcogenides by metal work function tuning in phthalocyanine compounds. Nanoscale, 2018, 10, 5148-5153.	2.8	30
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	Design of Stochastic Nanomagnets for Probabilistic Spin Logic. IEEE Magnetics Letters, 2018, 9, 1-5.	0.6	29
44	Spin-torque devices with hard axis initialization as Stochastic Binary Neurons. Scientific Reports, 2018, 8, 16689.	1.6	28
45	Electrical transport and noise in semiconducting carbon nanotubes. Physica E: Low-Dimensional Systems and Nanostructures, 2007, 37, 72-77.	1.3	27
46	Air-Stable P-Doping in Record High-Performance Monolayer WSe₂ Devices. IEEE Electron Device Letters, 2022, 43, 319-322.	2.2	25
47	MoS₂ for Enhanced Electrical Performance of Ultrathin Copper Films. ACS Applied Materials & Interfaces, 2019, 11, 28345-28351.	4.0	24
48	WSe₂ Homojunction Devices: Electrostatically Configurable as Diodes, MOSFETs, and Tunnel FETs for Reconfigurable Computing. Small, 2019, 15, e1902770.	5.2	23
49	Improvement of Spin Transfer Torque in Asymmetric Graphene Devices. ACS Nano, 2014, 8, 3807-3812.	7.3	22
50	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
51	Correlated fluctuations in spin orbit torque coupled perpendicular nanomagnets. Physical Review B, 2020, 101, .	1.1	22
52	Cloning and improving the expression ofPichia stipitis xylose reductase gene inSaccharomyces cerevisiae. Applied Biochemistry and Biotechnology, 1993, 39-40, 135-147.	1.4	19
53	Nanoscale thermometry with fluorescent yttrium-based Er/Yb-doped fluoride nanocrystals. Sensors and Actuators A: Physical, 2016, 250, 71-77.	2.0	19
54	Dynamically tunable thermal transport in polycrystalline graphene by strain engineering. Carbon, 2020, 158, 63-68.	5.4	19

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55	Hardware implementation of Bayesian network building blocks with stochastic spintronic devices. Scientific Reports, 2020, 10, 16002.	1.6	19
56	From Charge to Spin and Spin to Charge: Stochastic Magnets for Probabilistic Switching. Proceedings of the IEEE, 2020, 108, 1322-1337.	16.4	19
57	Carbon-based electronics. , 2009, , 174-184.		17
58	Mobility Extraction in 2D Transition Metal Dichalcogenide Devicesâ€"Avoiding Contact Resistance Implicated Overestimation. Small, 2021, 17, e2100940.	5.2	14
59	First Demonstration of WSe<inf>2</inf> Based CMOS-SRAM. , 2018, , .		13
60	Experimental observation of coupled valley and spin Hall effect in pâ€doped WSe₂ devices. InformaÄnÃ-MateriÃ¡ly, 2020, 2, 968-974.	8.5	13
61	Experimental Demonstration of a Spin Logic Device with Deterministic and Stochastic Mode of Operation. Scientific Reports, 2018, 8, 11405.	1.6	12
62	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
63	Carbon nanotubes for high-performance logic. MRS Bulletin, 2014, 39, 719-726.	1.7	11
64	Ultra-dark graphene stack metamaterials. Applied Physics Letters, 2015, 106, .	1.5	11
65	Achieving large transport bandgaps in bilayer graphene. Nano Research, 2015, 8, 3228-3236.	5.8	11
66	Resist-free fabricated carbon nanotube field-effect transistors with high-quality atomic-layer-deposited platinum contacts. Applied Physics Letters, 2017, 110, .	1.5	11
67	Thickness-Dependent Study of High- Performance WS₂-FETs With Ultrascaled Channel Lengths. IEEE Transactions on Electron Devices, 2021, 68, 2123-2129.	1.6	11
68	Steep slope carbon nanotube tunneling field-effect transistor. Carbon, 2021, 180, 237-243.	5.4	11
69	Monolayer WSe2 induced giant enhancement in the spin Hall efficiency of Tantalum. Npj 2D Materials and Applications, 2020, 4, .	3.9	10
70	Can carbon nanotube transistors be scaled without performance degradation?. , 2009, , .		8
71	Electric field control of interaction between magnons and quantum spin defects. Physical Review Research, 2022, 4, .	1.3	8
72	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

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73	Optimized spin relaxation length in few layer graphene at room temperature. , 2012, , .		7
74	Atomically thin diffusion barriers for ultra-scaled Cu interconnects implemented by 2D materials. , 2017, , .		7
75	Valley-Coupled-Spintronic Non-Volatile Memories With Compute-In-Memory Support. IEEE Nanotechnology Magazine, 2020, 19, 635-647.	1.1	7
76	Gate Work Function Engineering for Nanotube-Based Circuits. Digest of Technical Papers - IEEE International Solid-State Circuits Conference, 2007, , .	0.0	6
77	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
78	Metallic/Semiconducting Nanotube Separation and Ultra-thin, Transparent Nanotube Films. AIP Conference Proceedings, 2004, , .	0.3	5
79	BEOL compatible 2D layered materials as ultra-thin diffusion barriers for Cu interconnect technology. , 2017, , .		5
80	BEOL compatible sub-nm diffusion barrier for advanced Cu interconnects. , 2018, , .		5
81	Friction force reduction for electrical terminals using graphene coating. Nanotechnology, 2021, 32, 035704.	1.3	5
82	Spin-torque switching of a nano-magnet using giant spin hall effect. AIP Advances, 2015, 5, 107144.	0.6	4
83	Impact of Scaling on the Dipolar Coupling in Magnetâ€“Insulatorâ€“Magnet Structures. IEEE Transactions on Magnetics, 2016, 52, 1-7.	1.2	4
84	Tunable Random Number Generation Using Single Superparamagnet with Perpendicular Magnetic Anisotropy. , 2018, , .		4
85	Modeling and Circuit Analysis of Interconnects with TaS₂ Barrier/Liner. , 2021, , .		3
86	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
87	Graphene nanomesh contacts and its transport properties. , 2012, , .		2
88	Optical Relaxation Time Enhancement in Graphene-Passivated Metal Films. Scientific Reports, 2016, 6, 30519.	1.6	2
89	Electrical Annealing and Stochastic Resonance in Low Barrier Perpendicular Nanomagnets for Oscillatory Neural Networks. , 2019, , .		2
90	Process Variation Sensitivity of Spin-Orbit Torque Perpendicular Nanomagnets in DBNs. IEEE Transactions on Magnetics, 2021, 57, 1-8.	1.2	2

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91	Wide Range Optical Studies on Transparent SWNT Films. AIP Conference Proceedings, 2004, , .	0.3	1
92	Molecular doping of transition metal dichalcogenides using metal phythalocyanines. , 2017, , .		1
93	Atomically Thin p-doping Layer and Record High Hole Current on WSe₂. , 2019, , .		1
94	Utilizing Valley-Spin Hall Effect in WSe₂ for Low Power Non-Volatile Flip-Flop Design. , 2020, , .		1
95	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
96	Bandgap engineering in 2D layered materials. , 2015, , .		0
97	Electrically tunable bandgaps in 2D layered materials. , 2016, , .		0
98	Electrically-Tunable Stochasticity for Spin-based Neuromorphic Circuits: Self-Adjusting to Variation. , 2020, , .		0
99	Spinâ€“orbit torque controlled stochastic oscillators with synchronization and frequency tunability. Journal of Applied Physics, 2022, 131, 123901.	1.1	0