Jianshi Tang

List of Publications by Citations

118 papers	6,446 citations	39 h-index	79 g-index
141 ext. papers	8,037 ext. citations	12.2 avg, IF	5.88 L-index

#	Paper	IF	Citations
118	Magnetization switching through giant spin-orbit torque in a magnetically doped topological insulator heterostructure. *Nature Materials*, **2014**, 13, 699-704	27	616
117	Switching of perpendicular magnetization by spin-orbit torques in the absence of external magnetic fields. *Nature Nanotechnology*, **2014**, 9, 548-54	28.7	569
116	Fully hardware-implemented memristor convolutional neural network. *Nature*, **2020**, 577, 641-646	50.4	529
115	Scale-invariant quantum anomalous Hall effect in magnetic topological insulators beyond the two-dimensional limit. *Physical Review Letters*, **2014**, 113, 137201	7.4	348
114	Enhanced charge carrier mobility in two-dimensional high dielectric molybdenum oxide. *Advanced Materials*, **2013**, 25, 109-14	24	296
113	Bridging Biological and Artificial Neural Networks with Emerging Neuromorphic Devices: Fundamentals, Progress, and Challenges. *Advanced Materials*, **2019**, 31, e1902761	24	220
112	Synthesis of nanometre-thick MoO3 sheets. *Nanoscale*, **2010**, 2, 429-33	7.7	207
111	Carbon nanotube/polyaniline composite nanofibers: facile synthesis and chemosensors. *Nano Letters*, **2011**, 11, 954-9	11.5	192
110	Electric-field control of spin-orbit torque in a magnetically doped topological insulator. *Nature Nanotechnology*, **2016**, 11, 352-9	28.7	170
109	Proximity induced high-temperature magnetic order in topological insulator--ferrimagnetic insulator heterostructure. *Nano Letters*, **2014**, 14, 3459-65	11.5	156
108	End-bonded contacts for carbon nanotube transistors with low, size-independent resistance. *Science*, **2015**, 350, 68-72	33.3	145
107	Neuro-inspired computing chips. *Nature Electronics*, **2020**, 3, 371-382	28.4	139
106	Electrical detection of spin-polarized surface states conduction in (Bi(0.53)Sb(0.47))2Te3 topological insulator. *Nano Letters*, **2014**, 14, 5423-9	11.5	134
105	Electric-field-controlled ferromagnetism in high-Curie-temperature Mn0.05Ge0.95 quantum dots. *Nature Materials*, **2010**, 9, 337-44	27	126
104	Large-Area High-Performance Flexible Pressure Sensor with Carbon Nanotube Active Matrix for Electronic Skin. *Nano Letters*, **2018**, 18, 2054-2059	11.5	122
103	Gate-controlled surface conduction in Na-doped Bi2Te3 topological insulator nanoplates. *Nano Letters*, **2012**, 12, 1170-5	11.5	119
102	Magnetization switching through spin-Hall-effect-induced chiral domain wall propagation. *Physical Review B*, **2014**, 89,	3.3	105

101	Direct imaging of thermally driven domain wall motion in magnetic insulators. *Physical Review Letters*, **2013**, 110, 177202	7.4	103
100	Flexible CMOS integrated circuits based on carbon nanotubes with sub-10 ns stage delays. *Nature Electronics*, **2018**, 1, 191-196	28.4	98
99	High-speed logic integrated circuits with solution-processed self-assembled carbon nanotubes. *Nature Nanotechnology*, **2017**, 12, 861-865	28.7	96
98	Vertical graphene-base hot-electron transistor. *Nano Letters*, **2013**, 13, 2370-5	11.5	94
97	Reliability of analog resistive switching memory for neuromorphic computing. *Applied Physics Reviews*, **2020**, 7, 011301	17.3	94
96	Physically unclonable cryptographic primitives using self-assembled carbon nanotubes. *Nature Nanotechnology*, **2016**, 11, 559-565	28.7	92
95	Revelation of topological surface states in Bi2Se3 thin films by in situ Al passivation. *ACS Nano*, **2012**, 6, 295-302	16.7	85
94	Epitaxial growth of high mobility Bi2Se3 thin films on CdS. *Applied Physics Letters*, **2011**, 98, 242102	3.4	79
93	Electric-field control of ferromagnetism in Mn-doped ZnO nanowires. *Nano Letters*, **2014**, 14, 1823-9	11.5	66
92	Dynamic memristor-based reservoir computing for high-efficiency temporal signal processing. *Nature Communications*, **2021**, 12, 408	17.4	60
91	ECRAM as Scalable Synaptic Cell for High-Speed, Low-Power Neuromorphic Computing **2018**,		60
90	DNA-directed nanofabrication of high-performance carbon nanotube field-effect transistors. *Science*, **2020**, 368, 878-881	33.3	56
89	Ferromagnetic germanide in Ge nanowire transistors for spintronics application. *ACS Nano*, **2012**, 6, 5710-7	16.7	56
88	Power-efficient neural network with artificial dendrites. *Nature Nanotechnology*, **2020**, 15, 776-782	28.7	55
87	Electrical spin injection and detection in Mn5Ge3/Ge/Mn5Ge3 nanowire transistors. *Nano Letters*, **2013**, 13, 4036-43	11.5	51
86	Oxide-confined formation of germanium nanowire heterostructures for high-performance transistors. *ACS Nano*, **2011**, 5, 6008-15	16.7	50
85	Analog-Type Resistive Switching Devices for Neuromorphic Computing. *Physica Status Solidi - Rapid Research Letters*, **2019**, 13, 1900204	2.5	48
84	Electrical spin injection and transport in semiconductor nanowires: challenges, progress and perspectives. *Nanoscale*, **2015**, 7, 4325-37	7.7	48

83	Precise pitch-scaling of carbon nanotube arrays within three-dimensional DNA nanotrenches. *Science*, **2020**, 368, 874-877	33.3	46
82	Artificial Synapse Based on van der Waals Heterostructures with Tunable Synaptic Functions for Neuromorphic Computing. *ACS Applied Materials & Interfaces*, **2020**, 12, 11945-11954	9.5	43
81	High-Current Gain Two-Dimensional MoS Base Hot-Electron Transistors. *Nano Letters*, **2015**, 15, 7905-12	11.5	42
80	Separation of top and bottom surface conduction in Bi2Te3 thin films. *Nanotechnology*, **2013**, 24, 015705	3.4	40
79	**2020**,		37
78	In-memory Learning with Analog Resistive Switching Memory: A Review and Perspective. *Proceedings of the IEEE*, **2021**, 109, 14-42	14.3	37
77	Edge effect on resistance scaling rules in graphene nanostructures. *Nano Letters*, **2011**, 11, 1082-6	11.5	34
76	Direct Mapping of Charge Distribution during Lithiation of Ge Nanowires Using Off-Axis Electron Holography. *Nano Letters*, **2016**, 16, 3748-53	11.5	31
75	Single-crystalline Ni2Ge/Ge/Ni2Ge nanowire heterostructure transistors. *Nanotechnology*, **2010**, 21, 505704	3.4	31
74	Neural signal analysis with memristor arrays towards high-efficiency brain-machine interfaces. *Nature Communications*, **2020**, 11, 4234	17.4	27
73	Enhancing electric-field control of ferromagnetism through nanoscale engineering of high-T MnGe nanomesh. *Nature Communications*, **2016**, 7, 12866	17.4	26
72	Enhanced conductance fluctuation by quantum confinement effect in graphene nanoribbons. *Nano Letters*, **2010**, 10, 4590-4	11.5	26
71	Quest for high-Curie temperature MnxGe1 diluted magnetic semiconductors for room-temperature spintronics applications. *Journal of Crystal Growth*, **2015**, 425, 279-282	1.6	25
70	Comparison of spin lifetimes inn-Ge characterized between three-terminal and four-terminal nonlocal Hanle measurements. *Semiconductor Science and Technology*, **2013**, 28, 015018	1.8	24
69	Quantum dot behavior in bilayer graphene nanoribbons. *ACS Nano*, **2011**, 5, 8769-73	16.7	23
68	High-Uniformity Threshold Switching HfO-Based Selectors with Patterned Ag Nanodots. *Advanced Science*, **2020**, 7, 2002251	13.6	23
67	Spin Transport in Ge Nanowires for Diluted Magnetic Semiconductor-Based Nonvolatile Transpinor. *ECS Transactions*, **2014**, 64, 613-623	1	22
66	A Reliable All-2D Materials Artificial Synapse for High Energy-Efficient Neuromorphic Computing. *Advanced Functional Materials*, **2021**, 31, 2011083	15.6	20

65	Hanle-effect measurements of spin injection from Mn5Ge3C0.8/Al2O3-contacts into degenerately doped Ge channels on Si. *Applied Physics Letters*, **2014**, 105, 222408	3.4	19
64	. *IEEE Transactions on Electron Devices*, **2020**, 67, 2213-2217	2.9	18
63	Low-noise submicron channel graphene nanoribbons. *Applied Physics Letters*, **2010**, 97, 073107	3.4	17
62	Free-standing and single-crystalline Fe(1-x)Mn(x)Si nanowires with room-temperature ferromagnetism and excellent magnetic response. *ACS Nano*, **2012**, 6, 4884-91	16.7	16
61	Vapor-phase transport deposition, characterization, and applications of large nanographenes. *Journal of the American Chemical Society*, **2015**, 137, 4453-9	16.4	15
60	Formation and Device Application of Ge Nanowire Heterostructures via Rapid Thermal Annealing. *Advances in Materials Science and Engineering*, **2011**, 2011, 1-16	1.5	14
59	A Compact Model of Analog RRAM With Device and Array Nonideal Effects for Neuromorphic Systems. *IEEE Transactions on Electron Devices*, **2020**, 67, 1593-1599	2.9	13
58	Electrical properties and magnetic response of cobalt germanosilicide nanowires. *ACS Nano*, **2011**, 5, 9552-8	16.7	13
57	Tunneling spectroscopy of metal-oxide-graphene structure. *Applied Physics Letters*, **2010**, 97, 032104	3.4	13
56	Linewidth roughness in nanowire-mask-based graphene nanoribbons. *Applied Physics Letters*, **2011**, 98, 243118	3.4	13
55	Electrical probing of magnetic phase transition and domain wall motion in single-crystalline Mn_5Ge_3 nanowire. *Nano Letters*, **2012**, 12, 6372-9	11.5	12
54	Multichannel parallel processing of neural signals in memristor arrays. *Science Advances*, **2020**, 6,	14.3	12
53	Analog memristive synapse based on topotactic phase transition for high-performance neuromorphic computing and neural network pruning. *Science Advances*, **2021**, 7,	14.3	12
52	Carbon nanotube complementary logic with low-temperature processed end-bonded metal contacts **2016**,		11
51	A High-Speed and High-Reliability TRNG Based on Analog RRAM for IoT Security Application **2019**,		11
50	Memristor-based analogue computing for brain-inspired sound localization with in situ training.. *Nature Communications*, **2022**, 13, 2026	17.4	11
49	A Highly Reliable RRAM Physically Unclonable Function Utilizing Post-Process Randomness Source. *IEEE Journal of Solid-State Circuits*, **2021**, 56, 1641-1650	5.5	9
48	Compensated Ferrimagnet Based Artificial Synapse and Neuron for Ultrafast Neuromorphic Computing. *Advanced Functional Materials*,2107870	15.6	9

47	High-Performance Carbon Nanotube Complementary Logic With End-Bonded Contacts. *IEEE Transactions on Electron Devices*, **2017**, 64, 2744-2750	2.9	8
46	Enhanced Charge Carrier Mobility in Two-Dimensional High Dielectric Molybdenum Oxide (Adv. Mater. 1/2013). *Advanced Materials*, **2013**, 25, 108-108	24	8
45	A Closed-Form Model for Position-Dependent Potential across the Channel in DG-MOSFETs. *Chinese Physics Letters*, **2009**, 26, 018501	1.8	8
44	Nanoengineering of an Si/MnGe quantum dot superlattice for high Curie-temperature ferromagnetism. *Nanoscale*, **2017**, 9, 3086-3094	7.7	7
43	Mapping the domain wall pinning profile by stochastic imaging reconstruction. *Physical Review B*, **2013**, 87,	3.3	7
42	Electrical detection of spin transport in Si two-dimensional electron gas systems. *Nanotechnology*, **2016**, 27, 365701	3.4	7
41	Electrically Reconfigurable 3D Spin-Orbitronics. *Advanced Functional Materials*, **2021**, 31, 2007485	15.6	7
40	Reliability Perspective on Neuromorphic Computing Based on Analog RRAM **2019**,		6
39	Field Emission and Magnetic Properties of Free-Standing Gd Silicide Nanowires Prepared by Reacting Ultrahigh Vacuum Deposited Gd Films with Well-Aligned Si Nanowires. *Journal of the Electrochemical Society*, **2011**, 158, K64	3.9	6
38	Gate-tunable large-scale flexible monolayer MoS2 devices for photodetectors and optoelectronic synapses. *Nano Research*,1	10	6
37	Superlattice of Fe(x)Ge(1-x) nanodots and nanolayers for spintronics application. *Nanotechnology*, **2014**, 25, 505702	3.4	5
36	Diagonal Matrix Regression Layer: Training Neural Networks on Resistive Crossbars With Interconnect Resistance Effect. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, **2021**, 40, 1662-1671	2.5	5
35	Cryogenic HfOx-Based Resistive Memory With a Thermal Enhancement Capping Layer. *IEEE Electron Device Letters*, **2021**, 42, 1276-1279	4.4	5
34	A Unified PUF and TRNG Design Based on 40-nm RRAM With High Entropy and Robustness for IoT Security. *IEEE Transactions on Electron Devices*, **2022**, 69, 536-542	2.9	4
33	A Unified Memory and Hardware Security Module Based on the Adjustable Switching Window of Resistive Memory. *IEEE Journal of the Electron Devices Society*, **2020**, 8, 1257-1265	2.3	4
32	Versatile Fabrication of Self-Aligned Nanoscale Hall Devices Using Nanowire Masks. *Nano Letters*, **2016**, 16, 3109-15	11.5	4
31	Rapid annealing and cooling induced surface cleaning of semiconducting carbon nanotubes for high-performance thin-film transistors. *Carbon*, **2021**, 184, 764-771	10.4	4
30	Parasitic Resistance Effect Analysis in RRAM-based TCAM for Memory Augmented Neural Networks **2020**,		3

29	High-Purity Monochiral Carbon Nanotubes with a 1.2□hm Diameter for High-Performance Field-Effect Transistors. *Advanced Functional Materials*,2107119	15.6	3
28	Copper-Based 3-Terminal Synaptic Cell with Multiple Resistance Levels. *ECS Meeting Abstracts*, **2019**,	0	3
27	Bayesian Neural Network Realization by Exploiting Inherent Stochastic Characteristics of Analog RRAM **2019**,		3
26	Rotating neurons for all-analog implementation of cyclic reservoir computing.. *Nature Communications*, **2022**, 13, 1549	17.4	3
25	Dipole-induced modulation of effective work function of metal gate in junctionless FETs. *AIP Advances*, **2020**, 10, 055203	1.5	2
24	Contact engineering and channel doping for robust carbon nanotube NFETs **2017**,		2
23	**2010**,		2
22	A Novel Bi-functional Memory-PUF Module Utilizing Adjustable Switching Window of RRAM **2020**,		2
21	Array-level boosting method with spatial extended allocation to improve the accuracy of memristor based computing-in-memory chips. *Science China Information Sciences*, **2021**, 64, 1	3.4	2
20	MBE Growth of Ge-Based Diluted Magnetic Semiconductors **2019**, 349-364		1
19	Impact and Quantization of Short-Term Relaxation effect in Analog RRAM **2020**,		1
18	Spin Injection from Ferromagnetic Metal Directly into Non-Magnetic Semiconductor under Different Injection Currents. *Chinese Physics Letters*, **2010**, 27, 098501	1.8	1
17	A High-performance and Calibration-free True Random Number Generator Based on the Resistance Perturbation in RRAM Array **2020**,		1
16	A Compact Model of Analog RRAM Considering Temperature Coefficient for Neural Network Evaluation **2021**,		1
15	Oscillation neuron based on a low-variability threshold switching device for high-performance neuromorphic computing. *Journal of Semiconductors*, **2021**, 42, 064101	2.3	1
14	Compact Reliability Model of Analog RRAM for Computation-in-Memory Device-to-System Codesign and Benchmark. *IEEE Transactions on Electron Devices*, **2021**, 68, 2686-2692	2.9	1
13	Artificial Synapses: A Reliable All-2D Materials Artificial Synapse for High Energy-Efficient Neuromorphic Computing (Adv. Funct. Mater. 27/2021). *Advanced Functional Materials*, **2021**, 31, 2170197	15.6	1
12	Optimization Strategy for Accelerating Multi-Bit Resistive Weight Programming on the RRAM Array **2019**,		1

11	An On-chip Layer-wise Training Method for RRAM based Computing-in-memory Chips **2021**,		1
10	Crossbar-Level Retention Characterization in Analog RRAM Array-Based Computation-in-Memory System. *IEEE Transactions on Electron Devices*, **2021**, 68, 3813-3818	2.9	1
9	A circuit-algorithm codesign method to reduce the accuracy drop of RRAM based computing-in-memory chip **2020**,		1
8	Nanoscale Engineering of Ge-based Diluted Magnetic Semiconductors for Room-Temperature Spintronics Application **2018**, 403-419		0
7	Application of mathematical morphology operation with memristor-based computation-in-memory architecture for detecting manufacturing defects. *Fundamental Research*, **2021**, 2, 123-123		0
6	Investigation of Resistive Switching Mechanisms in Ti/TiO x /Pd-Based RRAM Devices. *Advanced Electronic Materials*,2100827	6.4	0
5	Electric Control of Magnetic Devices for Spintronic Computing **2015**, 53-112		
4	A Novel Neural Network with Digital Synaptic Weights Based on 3D NAND Flash Array		
3	Carbon Nanotube-Based Flexible Electronics **2020**, 137-156		
2	Carbon Nanotube Logic Technology **2018**, 119-149		
1	Neuromorphic Computing Systems with Emerging Devices **2022**, 173-216		