Shi-Jin Ding

List of Publications by Year
in descending order

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103 papers	2,663 citations	172443 29 h-index	233409 45 g-index
103 all docs	103 docs citations	103 times ranked	3062 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.	5.6	165
2	Three-Dimensional Nanoscale Flexible Memristor Networks with Ultralow Power for Information Transmission and Processing Application. Nano Letters, 2020, 20, 4111-4120.	9.1	134
3	Ultralow Power Wearable Heterosynapse with Photoelectric Synergistic Modulation. Advanced Science, 2020, 7, 1903480.	11.2	95
4	The mechanism of the asymmetric SET and RESET speed of graphene oxide based flexible resistive switching memories. Applied Physics Letters, 2012, 100, .	3.3	91
5	Improvement of Voltage Linearity in High-<tex>$kappa$</tex>MIM Capacitors Using<tex>$hbox HfO_2hbox -hbox SiO_2$</tex>Stacked Dielectric. IEEE Electron Device Letters, 2004, 25, 538-540.	3.9	84
6	Recent Advances in Î²-Ga2O3â€“Metal Contacts. Nanoscale Research Letters, 2018, 13, 246.	5.7	76
7	Flexible boron nitride-based memristor forin situdigital and analogue neuromorphic computing applications. Materials Horizons, 2021, 8, 538-546.	12.2	73
8	Flexible Electronic Synapses for Face Recognition Application with Multimodulated Conductance States. ACS Applied Materials & Interfaces, 2018, 10, 37345-37352.	8.0	72
9	RF, DC, and reliability characteristics of ALD HfO/sub 2/-Al/sub 2/O/sub 3/ laminate MIM capacitors for Si RF IC applications. IEEE Transactions on Electron Devices, 2004, 51, 886-894.	3.0	69
10	Atomic-Layer-Deposition of Indium Oxide Nano-films for Thin-Film Transistors. Nanoscale Research Letters, 2018, 13, 4.	5.7	62
11	High-performance MIM capacitor using ALD high-k HfO2-Al2O3 laminate dielectrics. IEEE Electron Device Letters, 2003, 24, 730-732.	3.9	55
12	Performance Improvement of Atomic Layer-Deposited ZnO/Al₂O₃Thin-Film Transistors by Low-Temperature Annealing in Air. IEEE Transactions on Electron Devices, 2016, 63, 1893-1898.	3.0	53
13	Spectroscopic ellipsometry study of thin NiO films grown on Si (100) by atomic layer deposition. Applied Physics Letters, 2008, 92, .	3.3	52
14	Flexible <scp>3D</scp> memristor array for binary storage and multiâ€states neuromorphic computing applications. InformaÄnÃ-MateriÃ¡ly, 2021, 3, 212-221.	17.3	52
15	Forming-free flexible memristor with multilevel storage for neuromorphic computing by full PVD technique. Journal of Materials Science and Technology, 2021, 60, 21-26.	10.7	43
16	Atomic layer deposition of high-density Pt nanodots on Al2O3 film using (MeCp)Pt(Me)3 and O2 precursors for nonvolatile memory applications. Nanoscale Research Letters, 2013, 8, 80.	5.7	42
17	Energy-efficient flexible photoelectric device with 2D/0D hybrid structure for bio-inspired artificial heterosynapse application. Nano Energy, 2021, 83, 105815.	16.0	42
18	Fully transparent, flexible and waterproof synapses with pattern recognition in organic environments. Nanoscale Horizons, 2019, 4, 1293-1301.	8.0	40

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19	Atomic-layer-deposited Al2O3â€“HfO2â€“Al2O3 dielectrics for metal-insulator-metal capacitor applications. Applied Physics Letters, 2005, 87, 053501.	3.3	39
20	Atomic Layer Deposited Hf0.5Zr0.5O2-based Flexible Memristor with Short/Long-Term Synaptic Plasticity. Nanoscale Research Letters, 2019, 14, 102.	5.7	38
21	Multistacked Al2O3â^•HfO2â^•SiO2 tunnel layer for high-density nonvolatile memory application. Applied Physics Letters, 2007, 91, 022908.	3.3	36
22	Unique UV-Erasable In-Ga-Zn-O TFT Memory With Self-Assembled Pt Nanocrystals. IEEE Electron Device Letters, 2013, 34, 1011-1013.	3.9	35
23	Novel Zn-Doped ${m Al}_{2}{m O}_{3}$ Charge Storage Medium for Light-Erasable Inâ€“Gaâ€“Znâ€“O TFT Memory. IEEE Electron Device Letters, 2013, 34, 1008-1010.	3.9	34
24	Evidence and Understanding of ALD<tex>$hbox HfO_2hbox --hbox Al_2hbox O_3$</tex>Laminate MIM Capacitors Outperforming Sandwich Counterparts. IEEE Electron Device Letters, 2004, 25, 681-683.	3.9	33
25	Investigation of the optical and electrical properties of ZnO/Cu/ZnO multilayers grown by atomic layer deposition. Journal of Alloys and Compounds, 2018, 744, 381-385.	5.5	33
26	Room-temperature developed flexible biomemristor with ultralow switching voltage for array learning. Nanoscale, 2020, 12, 9116-9123.	5.6	33
27	Spectrum projection with a bandgap-gradient perovskite cell for colour perception. Light: Science and Applications, 2020, 9, 162.	16.6	32
28	Atomic-layer-deposited Al2O3-HfO2 laminated and sandwiched dielectrics for metalâ€“insulatorâ€“metal capacitors. Journal Physics D: Applied Physics, 2007, 40, 1072-1076.	2.8	30
29	High performance few-layer MoS ₂ transistor arrays with wafer level homogeneity integrated by atomic layer deposition. 2D Materials, 2018, 5, 015028.	4.4	30
30	High Performance Unannealed a-InGaZnO TFT with an Atomic-Layer-Deposited SiO2 Insulator. IEEE Electron Device Letters, 2016, , 1-1.	3.9	28
31	Plasma-assisted atomic layer deposition and post-annealing enhancement of low resistivity and oxygen-free nickel nano-films using nickelocene and ammonia precursors. Journal of Materials Chemistry C, 2016, 4, 11059-11066.	5.5	26
32	Investigation of atomic-layer-deposited ruthenium nanocrystal growth on SiO2 and Al2O3 films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2007, 25, 775-780.	2.1	25
33	An Organic Flexible Artificial Bio-Synapses with Long-Term Plasticity for Neuromorphic Computing. Micromachines, 2018, 9, 239.	2.9	25
34	High-Performance On-Chip Supercapacitors Based on Mesoporous Silicon Coated with Ultrathin Atomic Layer-Deposited In₂O₃ Films. ACS Applied Materials & Interfaces, 2019, 11, 747-752.	8.0	25
35	Flexible Femtojoule Energy-Consumption In-Ga-Zn-O Synaptic Transistors With Extensively Tunable Memory Time. IEEE Transactions on Electron Devices, 2020, 67, 105-112.	3.0	25
36	Superior Atomic Layer Deposition Technology for Amorphous Oxide Semiconductor Thin-Film Transistor Memory Devices. Chemistry of Materials, 2020, 32, 1343-1357.	6.7	25

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37	Band alignment of In2O3/Î²-Ga2O3 interface determined by X-ray photoelectron spectroscopy. Applied Physics Letters, 2018, 113, .	3.3	24
38	Atomic layer deposition of ZnO on thermal SiO2 and Si surfaces using N2-diluted diethylzinc and H2O2 precursors. Applied Surface Science, 2012, 258, 4657-4666.	6.1	22
39	Full ALD Al₂O₃/ZrO₂/SiO₂/ZrO₂/Al₂O₃ Stacks for High-Performance MIM Capacitors. IEEE Electron Device Letters, 2014, 35, 1121-1123.	3.9	22
40	Mobility Enhancement and OFF Current Suppression in Atomic-Layer-Deposited ZnO Thin-Film Transistors by Post Annealing in O₂. IEEE Electron Device Letters, 2014, 35, 1266-1268.	3.9	22
41	High-Performance a-InGaZnO Thin-Film Transistors with Extremely Low Thermal Budget by Using a Hydrogen-Rich Al2O3 Dielectric. Nanoscale Research Letters, 2019, 14, 122.	5.7	22
42	Light response behaviors of amorphous Inâ€“Gaâ€“Znâ€“O thin-film transistors via in situ interfacial hydrogen doping modulation. RSC Advances, 2020, 10, 3572-3578.	3.6	22
43	Three-dimensional AlZnO/Al2O3/AlZnO nanocapacitor arrays on Si substrate for energy storage. Nanoscale Research Letters, 2012, 7, 544.	5.7	21
44	Voltage linearity modulation and polarity dependent conduction in metal-insulator-metal capacitors with atomic-layer-deposited Al₂O₃/ZrO₂/SiO₂ nano-stacks. Journal of Applied Physics, 2015, 118, 014501.	2.5	21
45	High density and program-erasable metal-insulator-silicon capacitor with a dielectric structure of SiO2â•HfO2â€“Al2O3nanolaminateâ•Al2O3. Applied Physics Letters, 2006, 88, 042905.	3.3	20
46	Electrical characteristics and conduction mechanisms of metal-insulator-metal capacitors with nanolaminated Al2O3â€“HfO2 dielectrics. Applied Physics Letters, 2008, 93, 092909.	3.3	20
47	Monochromatic light-assisted erasing effects of In-Ga-Zn-O thin film transistor memory with Al₂O₃/Zn-doped Al₂O₃/Al₂O₃ stacks. Applied Physics Letters, 2014, 104, 103504.	3.3	20
48	High-performance ultralow dielectric constant carbon-bridged mesoporous organosilica films for advanced interconnects. Journal of Materials Chemistry C, 2014, 2, 6502-6510.	5.5	20
49	Inductive crystallization effect of atomic-layer-deposited Hf0.5Zr0.5O2 films for ferroelectric application. Nanoscale Research Letters, 2015, 10, 25.	5.7	20
50	Operation mode switchable charge-trap memory based on few-layer MoS₂. Semiconductor Science and Technology, 2018, 33, 034001.	2.0	20
51	2D negative capacitance field-effect transistor with organic ferroelectrics. Nanotechnology, 2018, 29, 244004.	2.6	19
52	Low-Cost and High-Productivity Three-Dimensional Nanocapacitors Based on Stand-Up ZnO Nanowires for Energy Storage. Nanoscale Research Letters, 2016, 11, 213.	5.7	18
53	Memory Effect of Metal-Insulator-Silicon Capacitor with HfO2-Al2O3 Multilayer and Hafnium Nitride Gate. Journal of Electronic Materials, 2007, 36, 253-257.	2.2	17
54	Investigation of Energy Band at Atomic-Layer-Deposited ZnO/Î²-Ga2O3 (2 Â¯ 01 $$ overline{2}01 $$) Heterojunctions. Nanoscale Research Letters, 2018, 13, 412.	5.7	16

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55	Plasma-Enhanced Atomic Layer Deposition of Cobalt Films Using Co(EtCp)2 as a Metal Precursor. Nanoscale Research Letters, 2019, 14, 76.	5.7	16
56	Novel Multi-Level Cell TFT Memory With an Inâ€“Gaâ€“Zn-O Charge Storage Layer and Channel. IEEE Electron Device Letters, 2015, 36, 1021-1023.	3.9	15
57	Photoelectric Logic and In Situ Memory Transistors with Stepped Floating Gates of Perovskite Quantum Dots. ACS Nano, 2022, 16, 2442-2451.	14.6	15
58	Erasing-Modes Dependent Performance of a-IGZO TFT Memory With Atomic-Layer-Deposited Ni Nanocrystal Charge Storage Layer. IEEE Transactions on Electron Devices, 2017, 64, 3023-3027.	3.0	14
59	Dielectric Enhancement of Atomic Layer-Deposited Al2O3/ZrO2/Al2O3 MIM Capacitors by Microwave Annealing. Nanoscale Research Letters, 2019, 14, 53.	5.7	14
60	Thermal stability of atomic-layer-deposited ultra-thin niobium oxide film on Si (1 0 0). Applied Surface Science, 2011, 257, 7305-7309.	6.1	13
61	Mobility and Stability Enhancement of Amorphous In-Ga-Zn-O TFTs With Atomic Layer Deposited Al₂O₃/SiO₂Stacked Insulators. IEEE Journal of the Electron Devices Society, 2016, 4, 347-352.	2.1	13
62	Effect of Pulse-Plated Nickel Barriers on Tin Whisker Growth for Pure Tin Solder Joints. Journal of Electronic Materials, 2008, 37, 894-900.	2.2	12
63	Influence of NH3 plasma treatment on chemical bonding and water adsorption of low-k SiCOH film. Microelectronic Engineering, 2008, 85, 2114-2117.	2.4	12
64	Physical and electrical characterization of atomic-layer-deposited Ru nanocrystals embedded into Al2O3 for memory applications. Journal Physics D: Applied Physics, 2008, 41, 032007.	2.8	12
65	Characterization of PECVD ultralow dielectric constant porous SiOCH films using triethoxymethylsilane precursor and cinene porogen. Journal Physics D: Applied Physics, 2018, 51, 115103.	2.8	12
66	Stateful Logic Operations Implemented With Graphite Resistive Switching Memory. IEEE Electron Device Letters, 2018, 39, 607-609.	3.9	12
67	Rapid Improvement in Thin Film Transistors With Atomic-Layer-Deposited InO_xChannels via O₂Plasma Treatment. IEEE Electron Device Letters, 2018, 39, 1672-1675.	3.9	12
68	High-Performance a-IGZO TFT Fabricated With Ultralow Thermal Budget via Microwave Annealing. IEEE Transactions on Electron Devices, 2022, 69, 156-159.	3.0	12
69	Spectrum Reconstruction with Filter-Free Photodetectors Based on Graded-Band-Gap Perovskite Quantum Dot Heterojunctions. ACS Applied Materials & Interfaces, 2022, 14, 14455-14465.	8.0	12
70	Metal-insulator-metal capacitors using atomic-layer-deposited Al[sub 2]O[sub 3]âˆ•HfO[sub 2]âˆ•Al[sub 2]O[sub 3] sandwiched dielectrics for wireless communications. Journal of Vacuum Science & Technology B, 2006, 24, 2518.	1.3	11
71	Mechanism of interfacial layer suppression after performing surface Al(CH3)3 pretreatment during atomic layer deposition of Al2O3. Journal of Applied Physics, 2006, 100, 106101.	2.5	11
72	Voltage-dependent capacitance behavior and underlying mechanisms in metalâ€“insulatorâ€“metal capacitors with Al₂O₃â€“ZrO₂â€“SiO₂nano-laminates. Journal Physics D: Applied Physics, 2016, 49, 135106.	2.8	11

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73	Atomic Layer Deposition of Pt Nanoparticles for Microengine with Promoted Catalytic Motion. Nanoscale Research Letters, 2016, 11, 289.	5.7	11
74	Plasma-Assisted Atomic Layer Deposition of High-Density Ni Nanoparticles for Amorphous In-Ga-Zn-O Thin Film Transistor Memory. Nanoscale Research Letters, 2017, 12, 138.	5.7	11
75	Formation Mechanism of Heavily Doped Silicon Mesopores Induced by Pt Nanoparticle-Assisted Chemical Etching. Journal of Physical Chemistry C, 2018, 122, 21537-21542.	3.1	11
76	Growth, physical and electrical characterization of nickel oxide thin films prepared by plasma-enhanced atomic layer deposition using nickelocene and oxygen precursors. Materials Research Express, 2020, 7, 046401.	1.6	11
77	Floating-gate photosensitive synaptic transistors with tunable functions for neuromorphic computing. Science China Materials, 2021, 64, 1219-1229.	6.3	11
78	Low Thermal Budget Fabrication and Performance Comparison of MFM Capacitors With Thermal and Plasma-Enhanced Atomic Layer Deposited Hf_{0.45}Zr_{0.55}O _x Ferroelectrics. IEEE Transactions on Electron Devices, 2021, 68, 6359-6364.	3.0	11
79	PBTI Investigation of MoS₂n-MOSFET With Al₂O₃Gate Dielectric. IEEE Electron Device Letters, 2017, 38, 677-680.	3.9	10
80	Multilevel memory and synaptic characteristics of a-IGZO thin-film transistor with atomic layerâ€“deposited Al₂O₃/ZnO/Al₂O₃ stack layers. Journal of Materials Research, 2020, 35, 732-737.	2.6	10
81	High-Performance Flexible Gas Sensors Based on Layer-by-Layer Assembled Polythiophene Thin Films. Chemistry of Materials, 2021, 33, 7785-7794.	6.7	10
82	Power-Efficient Gas-Sensing and Synaptic Diodes Based on Lateral Pentacene/a-IGZO PN Junctions. ACS Applied Materials & Interfaces, 2022, 14, 9368-9376.	8.0	10
83	Influence of HfAlO composition on memory effects of metal-oxide-semiconductor capacitors with Al2O3/HfAlO/Al2O3 layers and Pd electrode. Thin Solid Films, 2013, 529, 380-384.	1.8	9
84	Photoresponsive characteristics of thin film transistors with perovskite quantum dots embedded amorphous InGaZnO channels*. Chinese Physics B, 2020, 29, 078503.	1.4	8
85	Voltage-Polarity Dependent Programming Behaviors of Amorphous Inâ€“Gaâ€“Znâ€“O Thin-Film Transistor Memory with an Atomic-Layer-Deposited ZnO Charge Trapping Layer. Nanoscale Research Letters, 2019, 14, 363.	5.7	8
86	Flexible Perovskite and Organic Semiconductor Heterojunction Devices for Tunable Band-Selective Photodetection. ACS Applied Electronic Materials, 2022, 4, 2805-2814.	4.3	8
87	Preparation and Characterization of Ultralow-Dielectric-Constant Porous SiCOH Thin Films Using 1,2-Bis(triethoxysilyl)ethane, Triethoxymethylsilane, and a Copolymer Template. Journal of Electronic Materials, 2011, 40, 2139-2146.	2.2	7
88	Electrically programmable-erasable In-Ga-Zn-O thin-film transistor memory with atomic-layer-deposited Al2O3/Pt nanocrystals/Al2O3 gate stack. AIP Advances, 2015, 5, .	1.3	7
89	Plasma-Enhanced Atomic Layer Deposition of Low Resistivity and Ultrathin Manganese Oxynitride Films with Excellent Resistance to Copper Diffusion. ACS Applied Electronic Materials, 2020, 2, 1653-1660.	4.3	7
90	High Performance (V_{th} ~ 0 V, SS ~ 69 mV/dec, I_{On}/I_{Off} ~) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 6 Passivation. IEEE Transactions on Electron Devices, 2022, 69, 3716-3721.	3.0	7

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91	Nonvolatile Metalâ€“Oxideâ€“Semiconductor Capacitors with Ru-RuO x Composite Nanodots Embedded in Atomic-Layer-Deposited Al2O3 Films. Journal of Electronic Materials, 2010, 39, 1343-1350.	2.2	6
92	Atomic-layer-deposited SiO2/TiO2/SiO2 sandwiched dielectrics for metalâ€“insulatorâ€“metal capacitor application. Microelectronic Engineering, 2014, 122, 1-4.	2.4	6
93	Effects of Al₂O₃ Capping and Post-Annealing on the Conduction Behavior in Few-Layer Black Phosphorus Field-Effect Transistors. IEEE Journal of the Electron Devices Society, 2018, 6, 320-324.	2.1	6
94	Investigation of energy band at atomic layer deposited AZO/Î²-Ga2O3 ($$ overline{2}01 $$) heterojunctions. Nanoscale Research Letters, 2019, 14, 275.	5.7	6
95	Stability enhancement of low temperature thin-film transistors with atomic-layer-deposited ZnO:Al channels. Microelectronic Engineering, 2017, 167, 105-109.	2.4	5
96	High-bandwidth light inputting multilevel photoelectric memory based on thin-film transistor with a floating gate of CsPbBr3/CsPbI3 blend quantum dots. Nanotechnology, 2021, 32, 095204.	2.6	5
97	A Waterâ€free Low Temperature Process for Atomic Layer Deposition of Al₂O₃ Films. Chemical Vapor Deposition, 2013, 19, 156-160.	1.3	4
98	Atomic layer deposition of amorphous Ni-Ta-N films for Cu diffusion barrier. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2018, 36, 031502.	2.1	3
99	The effect of NH₃ plasma pulse time on atomic layer-deposited TiN films using tetrakis-(dimethylamino) titanium as a metal precursor. Japanese Journal of Applied Physics, 2019, 58, SHHA02.	1.5	3
100	Formation of Pd nanocrystals in titanium-oxide film by rapid thermal annealing of reactively cosputtered TiPdO films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2011, 29, 021006.	2.1	2
101	Preparation and characterization of SnO films via reactive sputtering for ambipolar thin-film transistor applications. Semiconductor Science and Technology, 2021, 36, 025004.	2.0	2
102	Correlation between the formation of particle defects on sputtered Cu seed layers and Cu targets. Micro and Nano Letters, 2019, 14, 1079-1082.	1.3	1
103	A comparison study of high-density MIM capacitors with ALD HfO/sub 2/-Al/sub 2/O/sub 3/ laminated, sandwiched and stacked dielectrics. , 0, , .		0