Mott Memory and Neuromorphic Devices

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Citation Report

#	Article	IF	Citations
1	Resistance-switching mechanism of SiO2:Pt-based Mott memory. Journal of Applied Physics, 2015, 118, 245701.	1.1	3
2	X-Ray Spectroscopy of Ultra-Thin Oxide/Oxide Heteroepitaxial Films: A Case Study of Single-Nanometer VO2/TiO2. Materials, 2015, 8, 5452-5466.	1.3	23
3	Off-state current reduction in NbO2-based selector device by using TiO2 tunneling barrier as an oxygen scavenger. Applied Physics Letters, 2016, 109, .	1.5	28
4	Ultrathin Films of VO₂ on r-Cut Sapphire Achieved by Postdeposition Etching. ACS Applied Materials & Interfaces, 2016, 8, 14863-14870.	4.0	18
5	Compact oscillation neuron exploiting metal-insulator-transition for neuromorphic computing. , 2016, , .		28
6	Imprinting of Local Metallic States into VO₂ with Ultraviolet Light. Advanced Functional Materials, 2016, 26, 6612-6618.	7.8	43
7	Recent trends in neuromorphic engineering. Big Data Analytics, 2016, 1, .	2.2	29
8	Screening mechanisms at polar oxide heterointerfaces. Reports on Progress in Physics, 2016, 79, 076501.	8.1	69
9	Single-Crystalline SrRuO₃ Nanomembranes: A Platform for Flexible Oxide Electronics. Nano Letters, 2016, 16, 534-542.	4.5	71
10	Memristive Switching in Bi1â€“xSbx Nanowires. ACS Applied Materials & Interfaces, 2016, 8, 9224-9230.	4.0	8
11	In situ nanomechanical behaviour of coexisting insulating and metallic domains in VO2 microbeams. Journal of Materials Science, 2017, 52, 5589-5599.	1.7	21
12	Memristive-Based Neuromorphic Applications and Associative Memories. Studies in Computational Intelligence, 2017, , 305-342.	0.7	5
13	A non-volatile organic electrochemical device as a low-voltage artificial synapse for neuromorphic computing. Nature Materials, 2017, 16, 414-418.	13.3	1,234
14	On the nature of the Mott transition in multiorbital systems. Physical Review B, 2017, 95, .	1.1	11
15	Opportunities in vanadium-based strongly correlated electron systems. MRS Communications, 2017, 7, 27-52.	0.8	77
16	Thermoelectrical modelling and simulation of devices based on VO2. Microelectronics Reliability, 2017, 79, 387-394.	0.9	9
17	An updated roadmap for the integration of metalâ€“organic frameworks with electronic devices and chemical sensors. Chemical Society Reviews, 2017, 46, 3185-3241.	18.7	987
18	Autoassociative Memory and Pattern Recognition in Micromechanical Oscillator Network. Scientific Reports, 2017, 7, 411.	1.6	27

#	Article	IF	Citations
19	Effect of gate voltage polarity on the ionic liquid gating behavior of NdNiO₃/NdGaO₃ heterostructures. APL Materials, 2017, 5, 051101.	2.2	21
20	High-Quality LaVO₃ Films as Solar Energy Conversion Material. ACS Applied Materials & Interfaces, 2017, 9, 12556-12562.	4.0	26
21	Role of Electrical Double Layer Structure in Ionic Liquid Gated Devices. ACS Applied Materials & Interfaces, 2017, 9, 40949-40958.	4.0	24
22	Silicon synaptic transistor for hardware-based spiking neural network and neuromorphic system. Nanotechnology, 2017, 28, 405202.	1.3	60
23	Physical origins of current and temperature controlled negative differential resistances in NbO2. Nature Communications, 2017, 8, 658.	5.8	133
24	Sharpened VO₂ Phase Transition via Controlled Release of Epitaxial Strain. Nano Letters, 2017, 17, 5614-5619.	4.5	93
25	Complex Quasi-Two-Dimensional Crystalline Order Embedded in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>VO</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math> and Other Crystals. Physical Review Letters, 2017, 119, 045501.	2.9	8
26	Reducing orbital occupancy in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> suppresses Mott physics while Peierls distortions persist. Physical Review B, 2017, 96, .	1.4	23
27	Transport Across Heterointerfaces of Amorphous Niobium Oxide and Crystallographically Oriented Epitaxial Germanium. ACS Applied Materials & Interfaces, 2017, 9, 43315-43324.	4.0	4
28	Electrically Induced Multiple Metal-Insulator Transitions in Oxide Nanodevices. Physical Review Applied, 2017, 8, .	1.5	44
29	Switching dynamics of single and coupled VO₂-based oscillators as elements of neural networks. International Journal of Modern Physics B, 2017, 31, 1650261.	1.0	21
30	Physics and technology of electronic insulator-to-metal transition (E-IMT) for record high on/off ratio and low voltage in device applications. , 2017, , .		6
31	Investigation of phase evolution and control over phase transformation temperature and thermal hysteresis using stoichiometry and co-doping in VO2 thin films. AIP Advances, 2017, 7, .	0.6	7
32	Nanoscale Phase Separation and Lattice Complexity in VO2: The Metalâ€“Insulator Transition Investigated by XANES via Auger Electron Yield at the Vanadium L23-Edge and Resonant Photoemission. Condensed Matter, 2017, 2, 38.	0.8	18
33	Recent progresses on physics and applications of vanadium dioxide. Materials Today, 2018, 21, 875-896.	8.3	318
34	Effect of thermal insulation on the electrical characteristics of NbOx threshold switches. Applied Physics Letters, 2018, 112, .	1.5	26
35	Layer-by-Layer Epitaxial Growth of Defect-Engineered Strontium Cobaltites. ACS Applied Materials & Interfaces, 2018, 10, 5949-5958.	4.0	16
36	Electric field-triggered metal-insulator transition resistive switching of bilayered multiphasic VOx. Electronic Materials Letters, 2018, 14, 14-22.	1.0	19

#	Article	IF	Citations
37	Oxidation state control of solution-processed vanadium oxide thin-films and resistive switching of VO2 thin-film in a metastable state. Thin Solid Films, 2018, 648, 69-75.	0.8	10
38	Direct Mapping of Phase Separation across the Metalâ€“Insulator Transition of NdNiO₃. Nano Letters, 2018, 18, 2226-2232.	4.5	42
39	Enhanced metalâ€“insulator transition in V2O3 by thermal quenching after growth. Journal of Materials Science, 2018, 53, 9131-9137.	1.7	31
40	Wetâ€Etching Induced Abnormal Phase Transition in Highly Strained VO₂/TiO₂ (001) Epitaxial Film. Physica Status Solidi - Rapid Research Letters, 2018, 12, 1700320.	1.2	6
41	Memristor-based Neuromorphic Implementations for Artificial Neural Networks. , 2018, , .		1
42	Vanadium Dioxide Circuits Emulate Neurological Disorders. Frontiers in Neuroscience, 2018, 12, 856.	1.4	18
43	Research on Temperature Effect in Insulatorâ€“Metal Transition Selector Based on NbO_{<italic>x</italic>} Thin Films. IEEE Transactions on Electron Devices, 2018, 65, 5448-5452.	1.6	21
44	Future and Emergent Materials and Devices for Resistive Switching. , 2018, , .		1
45	Isostructural metal-insulator transition in VO ₂. Science, 2018, 362, 1037-1040.	6.0	158
46	Oxygen Vacancies Allow Tuning the Work Function of Vanadium Dioxide. Advanced Materials Interfaces, 2018, 5, 1801033.	1.9	20
47	Structural and electrical properties of epitaxial perovskite CaIr1â^'xRuxO3 thin films. Journal of Applied Physics, 2018, 124, 125308.	1.1	2
48	Self-Referenced Read Methodology for EMs. , 2018, , .		0
49	Separation of current density and electric field domains caused by nonlinear electronic instabilities. Nature Communications, 2018, 9, 2030.	5.8	40
50	Transient dynamics of NbOx threshold switches explained by Poole-Frenkel based thermal feedback mechanism. Applied Physics Letters, 2018, 112, .	1.5	27
51	A Self-Consistent, Semiclassical Electrothermal Modeling Framework for Mott Devices. IEEE Transactions on Electron Devices, 2018, 65, 1672-1678.	1.6	13
52	Spectroscopic Studies on the Metalâ€“Insulator Transition Mechanism in Correlated Materials. Advanced Materials, 2018, 30, e1704777.	11.1	18
53	Anatomy of filamentary threshold switching in amorphous niobium oxide. Nanotechnology, 2018, 29, 375705.	1.3	36
54	Electrochemically Triggered Metalâ€“Insulator Transition between VO₂ and V₂O₅. Advanced Functional Materials, 2018, 28, 1803024.	7.8	46

#	Article	IF	Citations
55	Recent progress in the phase-transition mechanism and modulation of vanadium dioxide materials. NPG Asia Materials, 2018, 10, 581-605.	3.8	302
56	Advancements, Challenges and Prospects of Chemical Vapour Pressure at Atmospheric Pressure on Vanadium Dioxide Structures. Materials, 2018, 11, 384.	1.3	20
57	Electric-double-layer transistors for synaptic devices and neuromorphic systems. Journal of Materials Chemistry C, 2018, 6, 5336-5352.	2.7	170
58	Vanadium Dioxide: The Multistimuli Responsive Material and Its Applications. Small, 2018, 14, e1802025.	5.2	167
59	Organic memristive devices for perceptron applications. Journal Physics D: Applied Physics, 2018, 51, 284002.	1.3	22
60	Localized Triggering of the Insulator-Metal Transition in VO₂ Using a Single Carbon Nanotube. ACS Nano, 2019, 13, 11070-11077.	7.3	25
61	Functional Oxides for Photoneuromorphic Engineering: Toward a Solar Brain. Advanced Materials Interfaces, 2019, 6, 1900471.	1.9	31
62	Mott-transition-based RRAM. Materials Today, 2019, 28, 63-80.	8.3	56
63	Effect of IrO₂ Spatial Distribution on the Stability and Charge Distribution of Ti_{1â€“x}Ir_xO₂ Alloys. Chemistry of Materials, 2019, 31, 8742-8751.	3.2	2
64	Competing phases in epitaxial vanadium dioxide at nanoscale. APL Materials, 2019, 7, .	2.2	8
65	Robust Coupling between Structural and Electronic Transitions in a Mott Material. Physical Review Letters, 2019, 122, 057601.	2.9	54
66	Steep-Slope Threshold Switch Enabled by Pulsed-Laser-Induced Phase Transformation. ACS Applied Materials & Interfaces, 2019, 11, 24221-24229.	4.0	13
67	Nanoscale electronic devices based on transition metal dichalcogenides. 2D Materials, 2019, 6, 032004.	2.0	51
68	Subthreshold firing in Mott nanodevices. Nature, 2019, 569, 388-392.	13.7	139
69	Critical neuromorphic computing based on explosive synchronization. Chaos, 2019, 29, 043110.	1.0	6
70	Persistent M2 phase in strongly strained (011)-oriented grains in VO2 films grown on sapphire (001) in reactive sputtering. Journal of Applied Physics, 2019, 125, .	1.1	7
71	Dual-Functional Long-Term Plasticity Emulated in IGZO-Based Photoelectric Neuromorphic Transistors. IEEE Electron Device Letters, 2019, 40, 818-821.	2.2	31
72	Metal-insulator transition of monoclinic VO2 thin film without Peierls distortion. Vacuum, 2019, 163, 338-341.	1.6	4

#	Article	IF	Citations
73	Spatiotemporal Information Processing Emulated by Multiterminal Neuroâ€Transistor Networks. Advanced Materials, 2019, 31, e1900903.	11.1	151
74	Insulator-to-metal transition of vanadium oxide-based metal-oxide-semiconductor devices at discrete measuring temperatures. Semiconductor Science and Technology, 2019, 34, 055001.	1.0	2
75	Characterization of VO2/ferroelectric thin film heterostructures deposited on various complex oxide single crystal substrates. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2019, 37, .	0.9	4
76	ReRAM Memory Cells Based on Gelatin Nano Composites: Towards Green Computing. , 2019, , .		1
77	ReRAM memory based on dropcast PVA nano composite. , 2019, , .		0
78	Design Considerations for Insulator Metal Transition based Artificial Neurons. , 2019, , .		0
79	Indiumâ€“Galliumâ€“Zincâ€“Oxide Schottky Synaptic Transistors for Silent Synapse Conversion Emulation. IEEE Electron Device Letters, 2019, 40, 139-142.	2.2	27
80	SPICE Modeling of Insulator Metal Transition: Model of the Critical Temperature. IEEE Journal of the Electron Devices Society, 2019, 7, 18-25.	1.2	10
81	Electric-field induced structural transition in vertical MoTe2- and Mo1â€“xWxTe2-based resistive memories. Nature Materials, 2019, 18, 55-61.	13.3	300
82	Magnetoâ€Memristive Switching in a 2D Layer Antiferromagnet. Advanced Materials, 2020, 32, e1905433.	11.1	21
83	Optical, Magnetic, and Electronic Properties of Nanostructured VO2 Thin Films Grown by Spray Pyrolysis: DFT First Principle Study. Journal of Superconductivity and Novel Magnetism, 2020, 33, 511-517.	0.8	6
84	Gating-induced reversible HxVO2 phase transformations for neuromorphic computing. Nano Energy, 2020, 67, 104268.	8.2	55
85	Tailoring Vanadium Dioxide Film Orientation Using Nanosheets: a Combined Microscopy, Diffraction, Transport, and Soft Xâ€Ray in Transmission Study. Advanced Functional Materials, 2020, 30, 1900028.	7.8	16
86	Voltage-triggered insulator-to-metal transition of ALD NbO_x thin films for a two-terminal threshold switch. Journal of Materials Chemistry C, 2020, 8, 14365-14369.	2.7	6
87	Multi-terminal ionic-gated low-power silicon nanowire synaptic transistors with dendritic functions for neuromorphic systems. Nanoscale, 2020, 12, 16348-16358.	2.8	30
88	Electronic Devices Using Open Framework Materials. Chemical Reviews, 2020, 120, 8581-8640.	23.0	185
89	Modeling Emerging Semiconductor Devices for Circuit Simulation. , 2020, , .		0
90	Deposition-Temperature-Mediated Selective Phase Transition Mechanism of VO₂ Films. Journal of Physical Chemistry C, 2020, 124, 17282-17289.	1.5	24

#	Article	IF	Citations
91	Dielectric Breakdown by Electric-field Induced Phase Separation. Journal of the Electrochemical Society, 2020, 167, 113504.	1.3	9
92	Progress and perspective on polymer templating of multifunctional oxide nanostructures. Journal of Applied Physics, 2020, 128, 190903.	1.1	7
93	Nanoscale Imaging and Control of Volatile and Nonâ€Volatile Resistive Switching in VO₂. Small, 2020, 16, e2005439.	5.2	27
94	Toward High-Precision Control of Transformation Characteristics in VO₂ through Dopant Modulation of Hysteresis. Journal of Physical Chemistry C, 2020, 124, 21223-21231.	1.5	16
95	Metal-insulator transition in crystalline V2O3 thin films probed at atomic-scale using emission MÃ¶ssbauer spectroscopy. Thin Solid Films, 2020, 714, 138389.	0.8	6
96	Volatile and non-volatile behavior of metalâ€“insulator transition in VO2 through oxygen vacancies tunability for memory applications. Journal of Applied Physics, 2020, 128, .	1.1	17
97	Preparation of atomic layer deposited vanadium dioxide thin films using tetrakis(ethylmethylamino) vanadium as precursor. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, 052402.	0.9	6
98	Electro-Thermal Simulation of Vertical VO2 Thermal-Electronic Circuit Elements. Energies, 2020, 13, 3447.	1.6	5
99	Photoinduced Metal-Like Phase of VO₂ with Subns Recovery. ACS Photonics, 2020, 7, 2395-2404.	3.2	11
100	Pseudo-Interface Switching of a Two-Terminal TaOx/HfO2 Synaptic Device for Neuromorphic Applications. Nanomaterials, 2020, 10, 1550.	1.9	31
101	A Non-Volatile Memory Based on NbOx/NbSe2 Van der Waals Heterostructures. Applied Sciences (Switzerland), 2020, 10, 7598.	1.3	8
102	Controlling the resistive switching hysteresis in VO2 thin films via application of pulsed voltage. Applied Physics Letters, 2020, 117, .	1.5	17
103	Self-Activation Neural Network Based on Self-Selective Memory Device With Rectified Multilevel States. IEEE Transactions on Electron Devices, 2020, 67, 4166-4171.	1.6	23
104	Anomalous electrical conduction and negative temperature coefficient of resistance in nanostructured gold resistive switching films. Scientific Reports, 2020, 10, 19613.	1.6	16
105	Dynamic control of nonequilibrium metal-insulator transitions. Physical Review B, 2020, 102, .	1.1	6
106	Featureless adaptive optimization accelerates functional electronic materials design. Applied Physics Reviews, 2020, 7, .	5.5	26
107	Radio-Frequency Characteristics of Ge-Doped Vanadium Dioxide Thin Films with Increased Transition Temperature. ACS Applied Electronic Materials, 2020, 2, 1263-1272.	2.0	14
108	Perovskite neural trees. Nature Communications, 2020, 11, 2245.	5.8	38

#	Article	IF	Citations
109	Nanoscale Correlations between Metalâ€“Insulator Transition and Resistive Switching Effect in Metallic Perovskite Oxides. Small, 2020, 16, e2001307.	5.2	20
110	Simultaneous Structural and Electronic Transitions in Epitaxial <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mrow><mml:mrow><mml:msub><mml:mrow><mml:mi>VO</mml:mi></mml:mrow><mml:mrow><mml:mi mathvariant="normal">O</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow><mml:mrow><mml:m		

#	Article	IF	Citations
128	Variable spin-charge conversion across metal-insulator transition. Nature Communications, 2020, 11, 476.	5.8	16
129	A new approach to the fabrication of VO₂ nanoswitches with ultra-low energy consumption. Nanoscale, 2020, 12, 3443-3454.	2.8	17
130	Engineering of defects in resistive random access memory devices. Journal of Applied Physics, 2020, 127, .	1.1	65
131	Optically excited threshold switching synapse characteristics on nitrogen-doped graphene oxide quantum dots (N-GOQDs). Journal of Alloys and Compounds, 2021, 855, 157514.	2.8	19
132	Electrothermally control of dynamic infrared switching of VO2 thin film on FTO glass. Journal of Alloys and Compounds, 2021, 858, 157640.	2.8	16
133	Controlling Metalâ€“Insulator Transitions in Vanadium Oxide Thin Films by Modifying Oxygen Stoichiometry. ACS Applied Materials & Interfaces, 2021, 13, 887-896.	4.0	24
134	Transmission electron microscopy analysis of reduction reactions and phase transformations in Nb2O5 films deposited by atomic layer deposition. Journal of Applied Physics, 2021, 129, .	1.1	4
135	10 MA cm^{â^'2} current density in nanoscale conductive bridge threshold switching selector via densely localized cation sources. Journal of Materials Chemistry C, 2021, 9, 14799-14807.	2.7	3
136	Strain engineering of optical properties in transparent VO₂/muscovite heterostructures. Physical Chemistry Chemical Physics, 2021, 23, 8908-8915.	1.3	18
137	Metalâ€“organic framework. Interface Science and Technology, 2021, , 279-387.	1.6	13
138	Design and numerical analysis of a high-performance optical modulator based on Si-VO₂ Bragg grating waveguide. Applied Optics, 2021, 60, 1083.	0.9	7
139	Metal-insulator transition in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi mathvariant="normal">V</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math> with intrinsic defects. Physical Review B, 2021, 103, .	1.1	5
140	Synaptic metaplasticity emulation in a freestanding oxide-based neuromorphic transistor with dual in-plane gates. Journal Physics D: Applied Physics, 2021, 54, 185106.	1.3	11
141	Hybrid Electrothermal Model for Insulator-to- Metal Transition in VO2 Thin Films. IEEE Transactions on Electron Devices, 2021, 68, 704-712.	1.6	3
143	Lightâ€Regulated Mott Transition for Onâ€Demand Multilevel Memory Storage, Processing, and Energy Efficient Machine Vision. Advanced Electronic Materials, 2021, 7, 2001118.	2.6	2
144	Light-Assisted Resistance Collapse in a <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub><mml:mi mathvariant="normal">V</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math> -Based Mott Insulator Device. Physical Review Applied, 2021, 15, .	1.5	13
145	Synergistic Modulation of Synaptic Plasticity in IGZO-Based Photoelectric Neuromorphic TFTs. IEEE Transactions on Electron Devices, 2021, 68, 1659-1663.	1.6	33
146	Core-Shell Dual-Gate Nanowire Synaptic Transistor with Short/Long-Term Plasticity. , 2021, , .		1

#	Article	IF	Citations
147	Large-Scale Preparation of Durable VO₂ Nanocomposite Coatings. ACS Applied Nano Materials, 2021, 4, 4048-4054.	2.4	21
148	Recent Progress on Emerging Transistorâ€Based Neuromorphic Devices. Advanced Intelligent Systems, 2021, 3, 2000210.	3.3	47
149	Doping-Enabled Reconfigurable Strongly Correlated Phase in a Quasi-2D Perovskite. Journal of Physical Chemistry Letters, 2021, 12, 5091-5098.	2.1	1
150	Ultrahigh Uniformity and Stability in NbO_x-Based Selector for 3-D Memory by Using Ru Electrode. IEEE Transactions on Electron Devices, 2021, 68, 2255-2259.	1.6	9
151	Metal chalcogenides for neuromorphic computing: emerging materials and mechanisms. Nanotechnology, 2021, 32, 372001.	1.3	16
152	Approaching ultrathin VO2 films on sapphire (001) substrates by biased reactive sputtering: Characteristic morphology and its effect on the infrared-light switching. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	0.9	5
153	Two-step current-temperature-induced electrical and optical modifications in VO2 films around the metalâ€“insulator transition. Journal of Applied Physics, 2021, 130, .	1.1	3
154	Universal phase dynamics in VO ₂ switches revealed by ultrafast operando diffraction. Science, 2021, 373, 352-355.	6.0	53
155	Hydrothermal synthesis of monoclinic vanadium dioxide nanocrystals using phase-pure vanadium precursors for high-performance smart windows. Solar Energy Materials and Solar Cells, 2021, 226, 111055.	3.0	20
156	Spatiotemporal characterization of the field-induced insulator-to-metal transition. Science, 2021, 373, 907-911.	6.0	52
157	Sharp Phase Transition by the Enhanced Lattice Stability of Lowâ€Temperature Phase of Crâ€Doped <scp>VO₂</scp>. Bulletin of the Korean Chemical Society, 2021, 42, 1232-1238.	1.0	4
158	A Marr's Threeâ€Level Analytical Framework for Neuromorphic Electronic Systems. Advanced Intelligent Systems, 2021, 3, 2100054.	3.3	3
159	Improved uniformity and threshold voltage in NbOx-ZrO2 selectors. Applied Physics Letters, 2021, 119, .	1.5	3
160	Thermal rectification in multilayer phase change material structures for energy storage applications. IScience, 2021, 24, 102843.	1.9	11
161	Heterogeneous integration of single-crystalline rutile nanomembranes with steep phase transition on silicon substrates. Nature Communications, 2021, 12, 5019.	5.8	11
162	Surface hydrogeneration of vanadium dioxide nanobeam to manipulate insulator-to-metal transition using hydrogen plasma. Journal of Asian Ceramic Societies, 2021, 9, 1310-1319.	1.0	4
163	Transverse barrier formation by electrical triggering of a metal-to-insulator transition. Nature Communications, 2021, 12, 5499.	5.8	12
164	A Skin-Inspired Artificial Mechanoreceptor for Tactile Enhancement and Integration. ACS Nano, 2021, 15, 16422-16431.	7.3	66

#	Article	IF	Citations
165	Coexistence of nonvolatile unipolar and volatile threshold resistive switching in the Pt/LaMnO3/Pt heterostructures. Current Applied Physics, 2021, 31, 22-28.	1.1	5
166	Dynamic Manipulation of THz Waves Enabled by Phase-Transition VO2 Thin Film. Nanomaterials, 2021, 11, 114.	1.9	35
167	Core-Shell Dual-Gate Nanowire Memory as a Synaptic Device for Neuromorphic Application. IEEE Journal of the Electron Devices Society, 2021, 9, 1282-1289.	1.2	11
168	Nanoelectronic Devices Enriching Mooreâ€™s Law. , 2021, , 67-156.		1
169	Application of phase-change materials in memory taxonomy. Science and Technology of Advanced Materials, 2017, 18, 406-429.	2.8	29
170	Nucleation-controlled hysteresis in unstrained hydrothermal <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">V</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> particles. Physical Review Materials, 2018, 2, .	0.9	10
171	Evidence of a second-order Peierls-driven metal-insulator transition in crystalline NbO2. Physical Review Materials, 2019, 3, .	0.9	18
172	Design of a vanadium dioxide-based dual-polarization optical PAM4 modulator. Journal of the Optical Society of America B: Optical Physics, 2018, 35, 3094.	0.9	9
173	Thin Film Stabilization of Different VO2 Polymorphs. , 0, , .		3
174	PZT Ferroelectric Synapse TFT With Multi-Level of Conductance State for Neuromorphic Applications. IEEE Access, 2021, 9, 140975-140982.	2.6	11
175	Dynamics of the electrically induced insulator-to-metal transition in rare-earth nickelates. Physical Review B, 2021, 104, .	1.1	14
176	A new opportunity for the emerging tellurium semiconductor: making resistive switching devices. Nature Communications, 2021, 12, 6081.	5.8	25
177	Epitaxial ferroelectric interfacial devices. Applied Physics Reviews, 2021, 8, .	5.5	15
178	Self-oscillation Phenomena of Vanadium Dioxide Films Based on Their Insulator-Metal Transition. Vacuum and Surface Science, 2019, 62, 332-337.	0.0	0
179	Nitrogen vacancy centre-based diamond microscope for investigating quantum materials. Bulletin of Materials Science, 2021, 44, 1.	0.8	2
180	Partially Oxidized MXene Ti₃C₂T_x Sheets for Memristor having Synapse and Threshold Resistive Switching Characteristics. Advanced Electronic Materials, 2021, 7, 2000866.	2.6	38
181	Ambipolar Two-dimensional Materials and Synaptic Devices for Neuromorphic Computing. RSC Smart Materials, 2020, , 333-349.	0.1	0
182	Probing Relaxation Dynamics and Stepped Domain Switching in Boronâ€Alloyed VO₂. Advanced Electronic Materials, 2022, 8, 2100932.	2.6	5

#	Article	IF	Citations
183	Understanding composite negative differential resistance in niobium oxide memristors. Journal Physics D: Applied Physics, 0, , .	1.3	5
184	Progress and Challenges for Memtransistors in Neuromorphic Circuits and Systems. Advanced Materials, 2022, 34, e2108025.	11.1	40
185	A rate-adjustable true random number generator based on the stochastic delay of a TiN/NbOx/Pt memristor. AIP Advances, 2021, 11, .	0.6	3
186	Multi-level operation in VO2-based resistive switching devices. AIP Advances, 2022, 12, .	0.6	15
187	Ultrafast and stable phase transition realized in MoTe₂-based memristive devices. Materials Horizons, 2022, 9, 1036-1044.	6.4	9
188	Metal-insulator transition switching in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi>VO</mml:mi></mml:mrow><mml:mi>x</mml:mi> heterojunctions. Physical Review Materials, 2022, 6, .	0.0	1
189	Interpretable Memristive LSTM Network Design for Probabilistic Residential Load Forecasting. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 2297-2310.	3.5	21
190	Correlated transition metal oxides and chalcogenides for Mott memories and neuromorphic applications. , 2022, , 307-360.		2
191	The Co-Improvement of Selectivity and Uniformity on NbOâ‚“-Based Selector by Al-Doping. IEEE Electron Device Letters, 2022, 43, 870-873.	2.2	8
192	In Materia Neuron Spiking Plasticity for Sequential Event Processing Based on Dualâ€Mode Memristor. Advanced Intelligent Systems, 2022, 4, .	3.3	6
193	Spin Engineering of VO₂ Phase Transitions and Removal of Structural Transition. ACS Applied Materials & Interfaces, 2022, 14, 12883-12892.	4.0	3
194	Origin of metal-insulator transitions in correlated perovskite metals. Physical Review Research, 2022, 4, .	1.3	13
195	Highly transparent ultrathin vanadium dioxide films with temperature-dependent infrared reflectance for smart windows. Applied Surface Science, 2022, 589, 152962.	3.1	7
196	Dynamic resistive switching devices for neuromorphic computing. Semiconductor Science and Technology, 2022, 37, 024003.	1.0	12
197	Stochasticity invariance control in Pr_{1â‚“}Ca_xMnO₃ RRAM to enable large-scale stochastic recurrent neural networks. Neuromorphic Computing and Engineering, 2022, 2, 014001.	2.8	3
199	Superconducting disordered neural networks for neuromorphic processing with fluxons. Science Advances, 2022, 8, eabn4485.	4.7	7
200	Switching Dynamics in Vanadium Dioxide-Based Stochastic Thermal Neurons. IEEE Transactions on Electron Devices, 2022, 69, 3135-3141.	1.6	5
201	Thermodynamic Modelling of the Te-X (X = Cu, Ga, Li, Sr) Systems. Journal of Phase Equilibria and Diffusion, 2022, 43, 193-213.	0.5	5

#	Article	IF	Citations
202	Hafnium Oxide (HfO₂) â€“ A Multifunctional Oxide: A Review on the Prospect and Challenges of Hafnium Oxide in Resistive Switching and Ferroelectric Memories. Small, 2022, 18, e2107575.	5.2	78
203	Memristive brain-like computing. Wuli Xuebao/Acta Physica Sinica, 2022, 71, 140501.	0.2	1
204	An epitaxial perovskite as a compact neuristor: electrical self-oscillations in TbMnO₃ thin films. Journal Physics D: Applied Physics, 2022, 55, 335305.	1.3	4
205	Simultaneous multi-domain transformation of vanadium dioxide for reconfigurable metamaterial architectures. Applied Physics A: Materials Science and Processing, 2022, 128, .	1.1	1
206	Ion-Movement-Based Synaptic Device for Brain-Inspired Computing. Nanomaterials, 2022, 12, 1728.	1.9	4
207	Nonvolatile Control of Metalâ€“Insulator Transition in VO₂ by Ferroelectric Gating. Advanced Materials, 2022, 34, .	11.1	12
208	Quantum confinement effect on defect level of hydrogen doped rutile VO2 nanowires. Journal of Applied Physics, 2022, 131, .	1.1	4
209	Disentangling Structural and Electronic Properties in V₂O₃ Thin Films: A Genuine Nonsymmetry Breaking Mott Transition. Nano Letters, 2022, 22, 5990-5996.	4.5	6
210	Infrared optical properties modulation of VO2 thin film fabricated by ultrafast pulsed laser deposition for thermochromic smart window applications. Scientific Reports, 2022, 12, .	1.6	21
211	A high throughput generative vector autoregression model for stochastic synapses. Frontiers in Neuroscience, 0, 16, .	1.4	3
212	A review of Mott insulator in memristors: The materials, characteristics, applications for future computing systems and neuromorphic computing. Nano Research, 2023, 16, 1165-1182.	5.8	9
213	Relationship between resistive switching and Mott transition in atomic layer deposition prepared La2Ti2O7-x thin film. Scripta Materialia, 2023, 222, 115050.	2.6	3
214	Thermal Management in Neuromorphic Materials, Devices, and Networks. Advanced Materials, 2023, 35, .	11.1	5
215	Orbital-selective Mott and Peierls transition in HxVO2. Npj Quantum Materials, 2022, 7, .	1.8	5
216	Manipulating the insulatorâ€“metal transition through tip-induced hydrogenation. Nature Materials, 2022, 21, 1246-1251.	13.3	18
217	Reversible exchange bias in epitaxial V₂O₃/Ni hybrid magnetic heterostructures. Journal of Physics Condensed Matter, 2022, 34, 495001.	0.7	0
218	VOx Phase Mixture of Reduced Single Crystalline V2O5: VO2 Resistive Switching. Materials, 2022, 15, 7652.	1.3	0
219	Energy-adaptive resistive switching with controllable thresholds in insulatorâ€“metal transition. RSC Advances, 2022, 12, 35579-35586.	1.7	3

#	Article	IF	Citations
220	Vanadium Electronic Configuration Determination From L2,3 Transition in V-oxide Compounds and Roscoelite. Microscopy and Microanalysis, 2023, 29, 459-469.	0.2	2
221	Nanoscale electronic synapses for neuromorphic computing. , 2023, , 189-218.		0
222	Dual-Gate IGZO-Based Neuromorphic Transistors with Stacked Al₂O₃/Chitosan Gate Dielectrics. Wuji Cailiao Xuebao/Journal of Inorganic Materials, 2023, , 767.	0.6	0
223	Kinetically-decoupled electrical and structural phase transitions in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml Physical Review B, 2023, 107, .	3.7	1
224	A Polymorphic Memtransistor with Tunable Metallic and Semiconducting Channel. Advanced Materials, 0, , 2209089.	11.1	5
225	Investigation of VxOy thin films using Raman Spectroscopy: Role of oxygen vacancies and structural phase transformation on thermochromic properties. Materials Today: Proceedings, 2023, , .	0.9	0
226	Synapse with versatility based on the Pt /LaMnO₃/Pt heterojunction. Journal Physics D: Applied Physics, 2023, 56, 145102.	1.3	0
227	Controlling quantum phases of electrons and excitons in moirÃ© superlattices. Journal of Applied Physics, 2023, 133, 080901.	1.1	1
228	Artificial visual neuron based on threshold switching memristors. Neuromorphic Computing and Engineering, 2023, 3, 014015.	2.8	2
229	Enhancing spin splitting by symmetry and molecular orbital hybridization in VO2. Computational Materials Science, 2023, 222, 112100.	1.4	2
230	Analog Neural Network Inference Accuracy in One-Selector One-Resistor Memory Arrays. , 2022, , .		0
231	Three-Terminal <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> -Based Device with Internal Read-Write Switching. Physical Review Applied, 2023, 19, .	1.5	0
232	Vanadium Oxide: Phase Diagrams, Structures, Synthesis, and Applications. Chemical Reviews, 2023, 123, 4353-4415.	23.0	77
233	Intrinsic and Extrinsic Factors Influencing the Dynamics of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> Mott Oscillators. Physical Review Applied, 2023, 19, .	1.5	2
234	Modelling Phase Changing Property of VO₂ for Reconfigurable Microwave Frequency Selection Applications Via Time-Resolved Microwave Conductivity. IEEE Access, 2023, , 1-1.	2.6	0
238	A High Swing and Low Power Associative Memory Based on Emerging Technologies. , 2022, , .		1
256	Memory Technology: Development, Fundamentals, and Future Trends. , 2023, , 1-36.		0
261	From fundamentals to frontiers: a review of memristor mechanisms, modeling and emerging applications. Journal of Materials Chemistry C, 2024, 12, 1583-1608.	2.7	0

#	Article	IF	Citations