Ultralowâ€“switching current density multilevel phase substrate

Science

373, 1243-1247

DOI: 10.1126/science.abj1261

Citation Report

#	Article	IF	Citations
1	Tailoring the Structural and Optical Properties of Germanium Telluride Phase-Change Materials by Indium Incorporation. Nanomaterials, 2021, 11, 3029.	4.1	9
2	Electronic and thermal properties of GeTe/Sb2Te3 superlattices by ab initio approach: Impact of Van der Waals gaps on vertical lattice thermal conductivity. Applied Physics Letters, 2021, 119, .	3.3	5
3	Electro-Thermal Confinement Enables Improved Superlattice Phase Change Memory. IEEE Electron Device Letters, 2022, 43, 204-207.	3.9	11
4	Nanofiber Architecture Engineering Implemented by Electrophoretic-Induced Self-Assembly Deposition Technology for Flash-Type Memristors. ACS Applied Materials & Interfaces, 2022, 14, 3111-3120.	8.0	16
5	Volatile and Nonvolatile Memristive Devices for Neuromorphic Computing. Advanced Electronic Materials, 2022, 8, .	5.1	94
6	A universal construction of robust interface between 2D conductive polymer and cellulose for textile supercapacitor. Carbohydrate Polymers, 2022, 284, 119230.	10.2	14
7	Internal reverse-biased pâ€“n junctions: A possible origin of the high resistance in chalcogenide superlattice for interfacial phase change memory. Applied Physics Letters, 2022, 120, .	3.3	1
8	Design strategy of phase change material properties for low-energy memory application. Materials and Design, 2022, 216, 110560.	7.0	10
9	Lateral electrical transport and field-effect characteristics of sputtered p-type chalcogenide thin films. Applied Physics Letters, 2021, 119, 232106.	3.3	3
10	Flexible VO₂ Films for Inâ€Sensor Computing with Ultraviolet Light. Advanced Functional Materials, 2022, 32, .	14.9	17
11	Simultaneous emulation of synaptic and intrinsic plasticity using a memristive synapse. Nature Communications, 2022, 13, 2811.	12.8	35
12	How arsenic makes amorphous GeSe a robust chalcogenide glass for advanced memory integration. Scripta Materialia, 2022, 218, 114834.	5.2	17
13	Optical and optoelectronic neuromorphic devices based on emerging memory technologies. Nanotechnology, 2022, 33, 372001.	2.6	5
14	Memristive technologies for data storage, computation, encryption, and radio-frequency communication. Science, 2022, 376, .	12.6	220
15	Optically Encodable and Erasable Multilevel Nonvolatile Flexible Memory Device Based on Metalâ€“Organic Frameworks. ACS Applied Materials & Interfaces, 2022, 14, 26895-26903.	8.0	7
16	Toward flexible memory application: high-performance phase-change magnetic material Fe:GeTe films realized via quasi-van der Waals epitaxy. Journal of Materials Chemistry C, 2022, 10, 9891-9901.	5.5	4
17	Application of Ge₂Sb₂Te₅ phase change films in flexible memory devices. CrystEngComm, 2022, 24, 5435-5441.	2.6	4
18	Exploring â€œNo Man's Landâ€â€”Arrhenius Crystallization of Thinâ€Film Phase Change Material at 1Â000Â000 K s^{â¯1} via Nanocalorimetry. Advanced Materials Interfaces, 2022, 9, .	3.7	5

#	Article	IF	Citations
19	Structural and Electrical Properties of Annealed Ge2Sb2Te5 Films Grown on Flexible Polyimide. Nanomaterials, 2022, 12, 2001.	4.1	4
20	Challenges and Perspectives for Energy-efficient Brain-inspired Edge Computing Applications (Invited) Tj ETQq1 1 0.784314 rgBT /Ove		3
21	Ultra-low-energy programmable non-volatile silicon photonics based on phase-change materials with graphene heaters. Nature Nanotechnology, 2022, 17, 842-848.	31.5	94
23	Electrical bistability based on metalâ€“organic frameworks. Chemical Communications, 2022, 58, 9971-9978.	4.1	6
24	Unveiling the Effect of Superlattice Interfaces and Intermixing on Phase Change Memory Performance. Nano Letters, 2022, 22, 6285-6291.	9.1	19
25	High-Performance Flexible Polymer Memristor Based on Stable Filamentary Switching. Nano Letters, 2022, 22, 7246-7253.	9.1	20
26	An artificial neuromorphic somatosensory system with spatio-temporal tactile perception and feedback functions. Npj Flexible Electronics, 2022, 6, .	10.7	18
27	Understanding Interface-Controlled Resistance Drift in Superlattice Phase Change Memory. IEEE Electron Device Letters, 2022, 43, 1669-1672.	3.9	10
28	Understanding the Origin of Low-Energy Operation Characteristics for Cr₂Ge₂Te₆ Phase-Change Material: Enhancement of Thermal Efficiency in the High-Scaled Memory Device. ACS Applied Materials & Interfaces, 2022, 14, 44604-44613.	8.0	6
29	Resistive Switching Crossbar Arrays Based on Layered Materials. Advanced Materials, 2023, 35, .	21.0	14
30	Ultra-Stable, Endurable, and Flexible Sb₂Te_xSe_{3â€“x} Phase Change Devices for Memory Application and Wearable Electronics. ACS Applied Materials & Interfaces, 2022, 14, 45600-45610.	8.0	4
31	Atomic Layer Deposition of Sb₂Te₃/GeTe Superlattice Film and Its Meltâ€Quenchingâ€Free Phaseâ€Transition Mechanism for Phaseâ€Change Memory. Advanced Materials, 2022, 34, .	21.0	9
32	Tailoring the oxygen concentration in Ge-Sb-O alloys to enable femtojoule-level phase-change memory operations. Materials Futures, 2022, 1, 045302.	8.4	9
33	Perspective on oxide-based three-terminal artificial synapses in physical neural networks. Applied Physics Letters, 2022, 121, .	3.3	4
34	Conversion between Metavalent and Covalent Bond in Metastable Superlattices Composed of 2D and 3D Sublayers. ACS Nano, 2022, 16, 20758-20769.	14.6	4
35	Energy Efficient Neuroâ€Inspired Phaseâ€Change Memory Based on Ge₄Sb₆Te₇ as a Novel Epitaxial Nanocomposite. Advanced Materials, 2023, 35, .	21.0	4
36	Phase Change Behavior of Si/Sb Superlattice-Like Thin Film on a Flexible Substrate. IEEE Transactions on Electron Devices, 2023, 70, 3329-3334.	3.0	1
37	C/Sb2Te3 phase-change heterostructure films with low resistance drift for multilevel phase change memories. Journal of Alloys and Compounds, 2023, 944, 169229.	5.5	5

#	Article	IF	Citations
38	In Situ Polymerized 1,3â€Dioxolane Electrolyte for Integrated Solidâ€State Lithium Batteries. Angewandte Chemie, 2023, 135, .	2.0	7
39	In Situ Polymerized 1,3â€Dioxolane Electrolyte for Integrated Solidâ€State Lithium Batteries. Angewandte Chemie - International Edition, 2023, 62, .	13.8	9
40	Silk fibroin based wearable electrochemical sensors with biomimetic enzyme-like activity constructed for durable and on-site health monitoring. Biosensors and Bioelectronics, 2023, 228, 115198.	10.1	9
41	Technology Roadmap for Flexible Sensors. ACS Nano, 2023, 17, 5211-5295.	14.6	238
42	Flexible Electronics With Two-Dimensional and Layered Chalcogenide Compounds. , 2023, , .		0
43	An organic electrochemical transistor for multi-modal sensing, memory and processing. Nature Electronics, 2023, 6, 281-291.	26.0	33
44	Probing the Melting Transitions in Phase-Change Superlattices via Thin Film Nanocalorimetry. Nano Letters, 2023, 23, 4587-4594.	9.1	1
45	Hybrid Program Algorithm Enables Significant Reduction in Write Latency and Power Consumption for Multilevel Phase Change Memory. IEEE Transactions on Electron Devices, 2023, 70, 4145-4149.	3.0	0
46	Systematic Study on Electronic, Mechanical, and Thermal Transport Properties of Germanium Antimony Selenide Telluride Alloy by a First-Principles Approach. ACS Applied Energy Materials, 0, , .	5.1	0
47	Thermodynamic Modeling of the Te-X (Xâ€‰=â€‰Gd, Dy, Ho) Binary Systems Combined with the First-Principles Method. Journal of Phase Equilibria and Diffusion, 2023, 44, 456-467.	1.4	2
48	Achievement of ten-level optical storage using Ge2Sb2Te5â€“nAg bi-layer composite structure induced by nanosecond pulsed laser. Applied Physics Letters, 2023, 122, 161701.	3.3	0
49	Advanced interfacial phase change material: Structurally confined and interfacially extended superlattice. Materials Today, 2023, , .	14.2	0
50	Microstructure characterization, phase transition, and device application of phase-change memory materials. Science and Technology of Advanced Materials, 2023, 24, .	6.1	2
51	Finite Element Analysis of GeTe / Ge2Sb2Te5 Interfacial Phase Change Memory Devices. , 2022, , .		0
52	Identifying, quantifying, and mitigating extraneous contact effect in dynamic characterization of flexible devices. Applied Physics Reviews, 2023, 10, .	11.3	0
53	In-memory computing based on phase change memory for high energy efficiency. Science China Information Sciences, 2023, 66, .	4.3	0
54	Ga doping induced thermal stabilization of fcc phase in Ge2Sb2Te5 thin films: A step toward power-efficient phase change memories. Journal of Applied Physics, 2023, 134, .	2.5	0
55	Device-scale atomistic modelling of phase-change memory materials. Nature Electronics, 2023, 6, 746-754.	26.0	10

#	Article	IF	Citations
56	Flexible germanium monotelluride phase change films with ultra-high bending stability for wearable piezoresistive sensors. Journal of Alloys and Compounds, 2023, 969, 172333.	5.5	2
57	Neuromorphic Devices, Circuits, and their Applications in Flexible Electronics. , 2023, , 1-1.		0
58	Designing a Multilayered Oxygen Barrier Structure to Tackle Oxidation Challenges in Phase-Change Memory for Improved Reliability. ACS Applied Materials & Interfaces, 0, , .	8.0	0
59	A Review of Advances in Deposition Methods and Material Properties of Superlattice Phase-Change Memory. ACS Applied Electronic Materials, 0, , .	4.3	0
60	0D van der Waals interfacial ferroelectricity. Nature Communications, 2023, 14, .	12.8	0
61	Programming and read performances optimization of phase-change memory via multi-objective genetic algorithm and improved finite element analysis. Materials Science in Semiconductor Processing, 2024, 169, 107914.	4.0	0
62	Binderâ€Free MOFâ€Based and MOFâ€Derived Nanoarrays for Flexible Electrochemical Energy Storage: Progress and Perspectives. Small, 0, , .	10.0	2
63	Recent Progress on Phase Engineering of Nanomaterials. Chemical Reviews, 2023, 123, 13489-13692.	47.7	3
64	Highâ€Throughput Study of Amorphous Stability and Optical Properties of Superlatticeâ€Like Geâ€“Sbâ€“Te Thin Films. Small, 0, , .	10.0	0
65	What Are 2D Materials Good For?. , 2023, , .		0
66	Phase-Change Memory from Molecular Tellurides. ACS Nano, 0, , .	14.6	0
67	Multistate structures in a hydrogen-bonded polycatenation non-covalent organic framework with diverse resistive switching behaviors. Nature Communications, 2024, 15, .	12.8	1
68	Pulse irradiation synthesis of metal chalcogenides on flexible substrates for enhanced photothermoelectric performance. Nature Communications, 2024, 15, .	12.8	0
69	Nonvolatile Memristive Materials and Physical Modeling for Inâ€Memory and Inâ€Sensor Computing. Small Science, 2024, 4, .	9.9	0
70	Flexible Electronics Applications of Geâ€Rich and Seâ€Substituted Phaseâ€Change Materials in Nonvolatile Memories. Physica Status Solidi - Rapid Research Letters, 0, , .	2.4	0
71	Research on the flexible phase change memory devices based on Ge2Sb2Te5/Mg35Sb65 superlattice-like thin films. Journal of Alloys and Compounds, 2024, 978, 173566.	5.5	0
72	Novel nanocomposite-superlattices for low energy and high stability nanoscale phase-change memory. Nature Communications, 2024, 15, .	12.8	0
73	Siliconâ€Compatible Ferroelectric Tunnel Junctions with a SiO₂/Hf_{0.5}Zr_{0.5}O₂ Composite Barrier as Lowâ€Voltage and Ultraâ€Highâ€Speed Memristors. Advanced Materials, 2024, 36, .	21.0	0

#	Article	IF	Citations
74	Phase transition and electrical conversion properties of Ge/Sb nano-multilayer films on flexible substrates. Npj Flexible Electronics, 2024, 8, .	10.7	0
75	In-Memory Compute Chips with Carbon-based Projected Phase-Change Memory Devices. , 2023, , .		0
76	Dual Substrate Effect of Silicon Substrate on Thermal Transport Characteristic of (14,14,14)â€Graphyne: Transformation from Conventional Suppressing Role to Abnormal Promoting Role. Physica Status Solidi - Rapid Research Letters, 0, , .	2.4	0
77	MAX Phase Ti₂AlN for HfO₂ Memristors with Ultraâ€Low Reset Current Density and Large On/Off Ratio. Advanced Functional Materials, 0, , .	14.9	0