

Kan Hao Xue

List of Publications by Year in descending order

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108
papers

4,626
citations

94269

37
h-index

110170

64
g-index

108
all docs

108
docs citations

108
times ranked

4686
citing authors

#	ARTICLE	IF	CITATIONS
1	Lead-Free Halide Rb_2CuBr_3 as Sensitive X-Ray Scintillator. <i>Advanced Materials</i> , 2019, 31, e1904711.	11.1	380
2	Rh-engineered ultrathin NiFe-LDH nanosheets enable highly-efficient overall water splitting and urea electrolysis. <i>Applied Catalysis B: Environmental</i> , 2021, 284, 119740.	10.8	302
3	Heteroepitaxial passivation of $\text{Cs}_2\text{AgBiBr}_6$ wafers with suppressed ionic migration for X-ray imaging. <i>Nature Communications</i> , 2019, 10, 1989.	5.8	252
4	2D materials-based homogeneous transistor-memory architecture for neuromorphic hardware. <i>Science</i> , 2021, 373, 1353-1358.	6.0	177
5	Metal-Semiconductor-Metal $\mu\text{-Ga}_2\text{O}_3$ Solar-Blind Photodetectors with a Record-High Responsivity Rejection Ratio and Their Gain Mechanism. <i>ACS Photonics</i> , 2020, 7, 812-820.	3.2	152
6	Unveiling the Structural Descriptor of $\text{A}_3\text{B}_2\text{X}_9$ Perovskite Derivatives toward X-Ray Detectors with Low Detection Limit and High Stability. <i>Advanced Functional Materials</i> , 2020, 30, 1910648.	7.8	144
7	All-Inorganic Copper Halide as a Stable and Self-Absorption-Free X-ray Scintillator. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 1873-1880.	2.1	131
8	Tailoring the electrocatalytic activity of bimetallic nickel-iron diselenide hollow nanochains for water oxidation. <i>Nano Energy</i> , 2018, 47, 275-284.	8.2	116
9	Reversible modulation of photoenergy in Sm-doped $(\text{K}_{0.5}\text{Na}_{0.5})\text{NbO}_3$ transparent ceramics via photochromic behavior. <i>Journal of Materials Chemistry A</i> , 2019, 7, 19374-19384.	5.2	100
10	Ultra-High Performance Amorphous Ga_2O_3 Photodetector Arrays for Solar-Blind Imaging. <i>Advanced Science</i> , 2021, 8, e2101106.	5.6	91
11	Lead halide perovskite for efficient optoacoustic conversion and application toward high-resolution ultrasound imaging. <i>Nature Communications</i> , 2021, 12, 3348.	5.8	85
12	Evolution of the conductive filament system in HfO_2 -based memristors observed by direct atomic-scale imaging. <i>Nature Communications</i> , 2021, 12, 7232.	5.8	85
13	Prediction of Semimetallic Tetragonal HfO_3 and ZrO_3 from First Principles. http://www.w3.org/1998/Math/MathML display="inline" HfO_3 and ZrO_3 from First Principles.	2.9	77
14	One-Dimensional All-Inorganic K_2CuBr_3 with Violet Emission as Efficient X-ray Scintillators. <i>ACS Applied Electronic Materials</i> , 2020, 2, 2242-2249.	2.0	77
15	Forming-Free, Fast, Uniform, and High Endurance Resistive Switching From Cryogenic to High Temperatures in $\text{W}/\text{AlO}_x/\text{Al}_2\text{O}_3/\text{Pt}$ Bilayer Memristor. <i>IEEE Electron Device Letters</i> , 2020, 41, 549-552.	2.2	73
16	Impact of the Cathode Microstructure on the Discharge Performance of Lithium Air Batteries: A Multiscale Model. <i>Journal of the Electrochemical Society</i> , 2014, 161, E3028-E3035.	1.3	72
17	A Comprehensive Model for Non-Aqueous Lithium Air Batteries Involving Different Reaction Mechanisms. <i>Journal of the Electrochemical Society</i> , 2015, 162, A614-A621.	1.3	72
18	Stability, electronic and thermodynamic properties of aluminene from first-principles calculations. <i>Applied Surface Science</i> , 2017, 409, 85-90.	3.1	72

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19	An electro-photo-sensitive synaptic transistor for edge neuromorphic visual systems. <i>Nanoscale</i> , 2019, 11, 17590-17599.	2.8	71
20	GGA-1/2 self-energy correction for accurate band structure calculations: the case of resistive switching oxides. <i>Journal of Physics Communications</i> , 2018, 2, 105005.	0.5	70
21	Carbon-Based Electrodes for Lithium Air Batteries: Scientific and Technological Challenges from a Modeling Perspective. <i>ECS Journal of Solid State Science and Technology</i> , 2013, 2, M3084-M3100.	0.9	66
22	Reversible transition between the polar and antipolar phases and its implications for wake-up and fatigue in HfO ₂ -based ferroelectric thin film. <i>Nature Communications</i> , 2022, 13, 645.	5.8	66
23	Improved LDA-1/2 method for band structure calculations in covalent semiconductors. <i>Computational Materials Science</i> , 2018, 153, 493-505.	1.4	63
24	In Situ Loading of Cu ₂ O Active Sites on Island-like Copper for Efficient Electrochemical Reduction of Nitrate to Ammonia. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 6680-6688.	4.0	62
25	Efficient Implementation of Boolean and Full-Adder Functions With 1T1R RRAMs for Beyond Von Neumann In-Memory Computing. <i>IEEE Transactions on Electron Devices</i> , 2018, 65, 4659-4666.	1.6	57
26	Realization of Functional Complete Stateful Boolean Logic in Memristive Crossbar. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 34559-34567.	4.0	56
27	A Combined <i>Ab Initio</i> and Experimental Study on the Nature of Conductive Filaments in $\text{Pt}/\text{HfO}_2/\text{Pt}$ Resistive Random Access Memory. <i>IEEE Transactions on Electron Devices</i> , 2014, 61, 1394-1402.	1.6	55
28	Ideal strength and elastic instability in single-layer 8-Pmmn borophene. <i>RSC Advances</i> , 2017, 7, 8654-8660.	1.7	53
29	A Microstructurally Resolved Model for Li-S Batteries Assessing the Impact of the Cathode Design on the Discharge Performance. <i>Journal of the Electrochemical Society</i> , 2016, 163, A2817-A2829.	1.3	52
30	<i>In situ</i> boost and reversible modulation of dual-mode photoluminescence under an electric field in a tape-casting-based Er-doped K _{0.5} Na _{0.5} NbO ₃ laminar ceramic. <i>Journal of Materials Chemistry C</i> , 2019, 7, 7885-7892.	2.7	52
31	KTiO: a metal shrouded 2D semiconductor with high carrier mobility and tunable magnetism. <i>Nanoscale</i> , 2019, 11, 1131-1139.	2.8	50
32	Single-layer planar penta-X ₂ N ₄ (X = Ni, Pd and Pt) as direct-bandgap semiconductors from first principle calculations. <i>Applied Surface Science</i> , 2019, 469, 456-462.	3.1	48
33	Low-Power Memristive Logic Device Enabled by Controllable Oxidation of 2D HfSe ₂ for In-Memory Computing. <i>Advanced Science</i> , 2021, 8, e2005038.	5.6	47
34	Customized binary and multi-level HfO _{2-x} -based memristors tuned by oxidation conditions. <i>Scientific Reports</i> , 2017, 7, 10070.	1.6	46
35	A Multiscale Model of Electrochemical Double Layers in Energy Conversion and Storage Devices. <i>Journal of the Electrochemical Society</i> , 2014, 161, E3302-E3310.	1.3	45
36	Pressure-induced novel compounds in the Hf-O system from first-principles calculations. <i>Physical Review B</i> , 2015, 92, .	1.1	44

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37	Plasma-induced moieties impart super-efficient activity to hydrogen evolution electrocatalysts. <i>Nano Energy</i> , 2021, 85, 106030.	8.2	41
38	Nb ₂ SiTe ₄ and Nb ₂ GeTe ₄ : Unexplored 2D Ternary Layered Tellurides with High Stability, Narrow Band Gap and High Electron Mobility. <i>Journal of Electronic Materials</i> , 2020, 49, 959-968.	1.0	39
39	Cation and Anion Co-doped Perovskite Nanofibers for Highly Efficient Electrocatalytic Oxygen Evolution. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 41259-41268.	4.0	39
40	Controlled Memory and Threshold Switching Behaviors in a Heterogeneous Memristor for Neuromorphic Computing. <i>Advanced Electronic Materials</i> , 2020, 6, 2000309.	2.6	38
41	Mimicking the brain functions of learning, forgetting and explicit/implicit memories with SrTiO ₃ -based memristive devices. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 31796-31802.	1.3	36
42	Gallium Thiophosphate: An Emerging Bidirectional Auxetic Two-Dimensional Crystal with Wide Direct Band Gap. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 4455-4462.	2.1	35
43	Composition-Dependent Ferroelectric Properties in Sputtered Hf _x Zr _{1-x} O ₂ Thin Films. <i>IEEE Electron Device Letters</i> , 2019, 40, 570-573.	2.2	35
44	Oxygen vacancy chain and conductive filament formation in hafnia. <i>Journal of Applied Physics</i> , 2018, 123, .	1.1	34
45	Uniform and robust TiN/HfO ₂ /Pt memristor through interfacial Al-doping engineering. <i>Applied Surface Science</i> , 2021, 550, 149274.	3.1	34
46	Design lateral heterostructure of monolayer ZrS ₂ and HfS ₂ from first principles calculations. <i>Applied Surface Science</i> , 2018, 436, 919-926.	3.1	33
47	Coexistence of Digital and Analog Resistive Switching With Low Operation Voltage in Oxygen-Gradient HfO _x Memristors. <i>IEEE Electron Device Letters</i> , 2019, 40, 1068-1071.	2.2	32
48	Performance enhancement of TaO _x resistive switching memory using graded oxygen content. <i>Applied Physics Letters</i> , 2018, 113, .	1.5	31
49	TiP ₅ : an unexplored direct band gap 2D semiconductor with ultra-high carrier mobility. <i>Journal of Materials Chemistry C</i> , 2019, 7, 639-644.	2.7	30
50	Two-dimensional silicon chalcogenides with high carrier mobility for photocatalytic water splitting. <i>Journal of Materials Science</i> , 2019, 54, 11485-11496.	1.7	30
51	Diverse spike-timing-dependent plasticity based on multilevel HfO _x memristor for neuromorphic computing. <i>Applied Physics A: Materials Science and Processing</i> , 2018, 124, 1.	1.1	28
52	Lead-free violet-emitting K ₂ CuCl ₃ single crystal with high photoluminescence quantum yield. <i>Organic Electronics</i> , 2020, 86, 105903.	1.4	27
53	Substrate-modulated ferromagnetism of two-dimensional Fe ₃ GeTe ₂ . <i>Applied Physics Letters</i> , 2020, 116, .	1.5	27
54	Pt ₅ Se ₄ Monolayer: A Highly Efficient Electrocatalyst toward Hydrogen and Oxygen Electrode Reactions. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 13896-13903.	4.0	26

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55	A non-filamentary model for unipolar switching transition metal oxide resistance random access memories. <i>Journal of Applied Physics</i> , 2011, 109, 091602.	1.1	21
56	A new family of two-dimensional ferroelastic semiconductors with negative Poisson's ratios. <i>Nanoscale</i> , 2020, 12, 14150-14159.	2.8	21
57	Model of dielectric breakdown in hafnia-based ferroelectric capacitors. <i>Journal of Applied Physics</i> , 2018, 124, .	1.1	20
58	Planar penta-transition metal phosphide and arsenide as narrow-gap semiconductors with ultrahigh carrier mobility. <i>Journal of Materials Science</i> , 2019, 54, 7035-7047.	1.7	20
59	Multilevel switching in Mg-doped HfOx memristor through the mutual-ion effect. <i>Applied Physics Letters</i> , 2021, 119, .	1.5	20
60	A comparative study on Bi4Ti3O12 and Bi3.25La0.75Ti3O12 ferroelectric thin films derived by metal organic decomposition. <i>Journal of Applied Physics</i> , 2010, 107, .	1.1	19
61	Ferroelectric fatigue in layered perovskites from self-energy corrected density functional theory. <i>RSC Advances</i> , 2017, 7, 21856-21868.	1.7	19
62	Reducing Forming Voltage by Applying Bipolar Incremental Step Pulse Programming in a 1T1R Structure Resistance Random Access Memory. <i>IEEE Electron Device Letters</i> , 2018, 39, 815-818.	2.2	19
63	Two-dimensional perovskites as sensitive strain sensors. <i>Journal of Materials Chemistry C</i> , 2020, 8, 3814-3820.	2.7	19
64	A convective transport theory for high rate discharge in lithium ion cells. <i>Electrochimica Acta</i> , 2013, 87, 575-590.	2.6	18
65	Enhancement of DC/AC resistive switching performance in AlOx memristor by two-technique bilayer approach. <i>Applied Physics Letters</i> , 2020, 116, 173504.	1.5	18
66	Low temperature preparation of ferroelectric bismuth titanate thin films. <i>Applied Physics Letters</i> , 2009, 95, .	1.5	17
67	Correlation analysis between the current fluctuation characteristics and the conductive filament morphology of HfO2-based memristor. <i>Applied Physics Letters</i> , 2017, 111, 213505.	1.5	17
68	Theoretical investigation of the Ag filament morphology in conductive bridge random access memories. <i>Journal of Applied Physics</i> , 2018, 124, .	1.1	17
69	Boolean and Sequential Logic in a Oneâ€Memristorâ€Oneâ€Resistor (1M1R) Structure for Inâ€Memory Computing. <i>Advanced Electronic Materials</i> , 2018, 4, 1800229.	2.6	17
70	Microscopic mechanism of imprint in hafnium oxide-based ferroelectrics. <i>Nano Research</i> , 2022, 15, 3667-3674.	5.8	17
71	HfO _x /AlO _y Superlatticeâ€Like Memristive Synapse. <i>Advanced Science</i> , 2022, 9, .	5.6	17
72	Promising photocatalysts with high carrier mobility for water splitting in monolayer Ge2P4S2 and Ge2As4S2. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 21536-21545.	3.8	16

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73	Tailoring the electron and hole dimensionality to achieve efficient and stable metal halide perovskite scintillators. <i>Nanophotonics</i> , 2021, 10, 2249-2256.	2.9	16
74	A High-Performance Ag/TiN/HfO _x /HfO _y /HfO _x /Pt Diffusive Memristor for Calibration-Free True Random Number Generator. <i>Advanced Electronic Materials</i> , 2022, 8, .	2.6	15
75	Low work function of crystalline GeTe/Sb ₂ Te ₃ superlattice-like films induced by Te dangling bonds. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 495302.	1.3	14
76	Polyamorphism in K ₂ Sb ₈ Se ₁₃ for multi-level phase-change memory. <i>Journal of Materials Chemistry C</i> , 2020, 8, 6364-6369.	2.7	14
77	Device characterization of correlated electron random access memories. <i>Journal of Applied Physics</i> , 2011, 109, .	1.1	13
78	Conductance quantization in an AgInSbTe-based memristor at nanosecond scale. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	13
79	Material and process optimization of correlated electron random access memories. <i>Journal of Applied Physics</i> , 2011, 109, 091603.	1.1	12
80	Structural disorder in the high-temperature cubic phase of GeTe. <i>RSC Advances</i> , 2018, 8, 17435-17442.	1.7	12
81	Ab Initio Simulation of Ta ₂ O ₅ : A High Symmetry Ground State Phase with Application to Interface Calculation. <i>Annalen Der Physik</i> , 2019, 531, 1800524.	0.9	12
82	Synergic Effect in a New Electrocatalyst Ni ₂ SbTe ₂ for Oxygen Reduction Reaction. <i>Journal of Physical Chemistry C</i> , 2020, 124, 3671-3680.	1.5	11
83	Pt/Al ₂ O ₃ /TaO _x /Ta Self-Rectifying Memristor With Record-Low Operation Current ($\lt; 2 \text{ pA}$), Low Power (fJ), and High Scalability. <i>IEEE Transactions on Electron Devices</i> , 2022, 69, 838-842.	1.6	11
84	Effect of metal-to-metal interface states on the electric-field modified magnetic anisotropy in MgO/Fe/non-magnetic metal. <i>Journal of Applied Physics</i> , 2016, 119, 133905.	1.1	9
85	Electron transport properties of mirror twin grain boundaries in molybdenum disulfide: Impact of disorder. <i>Physical Review B</i> , 2019, 100, .	1.1	9
86	Homo-layer hafnia-based memristor with large analog switching window. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	9
87	Oxygen migration around the filament region in HfO _x memristors. <i>AIP Advances</i> , 2019, 9, .	0.6	8
88	Filament-to-dielectric band alignments in TiO_2 and HfO_2 . <i>Journal of Computational Electronics</i> , 2017, 16, 1057-1065.	1.3	7
89	Designing stable 2D materials solely from VIA elements. <i>Applied Physics Letters</i> , 2021, 119, .	1.5	6
90	NITROGEN-RICH TITANIUM NITRIDE SERVING as Pt-Al DIFFUSION BARRIER FOR FeRAM APPLICATION. <i>Integrated Ferroelectrics</i> , 2008, 96, 19-26.	0.3	5

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91	Effect of MgO/Fe Interface Oxidation State on Electric-Field Modulation of Interfacial Magnetic Anisotropy. Journal of Electronic Materials, 2016, 45, 3162-3166.	1.0	5
92	STUDIES ON THE RELAX BEHAVIOR OF SrBi ₂ Ta ₂ O ₉ THIN FILMS. Integrated Ferroelectrics, 2006, 79, 81-87.	0.3	4
93	First-principles study of A-site substitution in ferroelectric bismuth titanate. Journal of Materials Science, 2014, 49, 6363-6372.	1.7	4
94	Conducting mechanism of Ag-diffused Bi ²⁺ Te based resistive switching devices. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	1.1	4
95	12.7 MA/cm ² On-Current Density and High Uniformity Realized in AgGeSe/Al ₂ O ₃ Selectors. IEEE Electron Device Letters, 2021, 42, 613-616.	2.2	4
96	2022 roadmap on neuromorphic devices and applications research in China. Neuromorphic Computing and Engineering, 2022, 2, 042501.	2.8	4
97	Highly stable halide perovskites for photocatalysis <i>via</i> multi-dimensional structure design and <i>in situ</i> phase transition. Dalton Transactions, 2022, 51, 11316-11324.	1.6	4
98	BaAs ₃ : a narrow gap 2D semiconductor with vacancy-induced semiconductor \rightarrow metal transition from first principles. Journal of Materials Science, 2019, 54, 12676-12687.	1.7	3
99	STUDIES ON THE FATIGUE BEHAVIOR OF FERROELECTRIC FILM USING PREISACH APPROACH. Integrated Ferroelectrics, 2008, 99, 3-12.	0.3	2
100	Quasi-Fermi-Level Phase Space and its Applications in Ambipolar Two-Dimensional Field-Effect Transistors. Physical Review Applied, 2022, 17, .	1.5	2
101	Investigation on Annealing and Etching Effects for Pt/Bi _{3.15} Nd _{0.85} Ti ₃ O ₁₂ /Pt Ferroelectric Capacitors. Japanese Journal of Applied Physics, 2007, 46, 4200-4202.	0.8	1
102	Model and Key Fabrication Technologies for FeRAM. ECS Transactions, 2009, 22, 217-225.	0.3	1
103	Investigation on Divalent Metal Substituted Bismuth Titanate Ferroelectric Thin Films. Integrated Ferroelectrics, 2011, 124, 26-32.	0.3	1
104	Operating Current Reduction in Nickel Oxide Correlated Electron Random Access Memories (CeRAMs) Through Controlled Fabrication Processes. Integrated Ferroelectrics, 2011, 124, 105-111.	0.3	1
105	Self-compliance characteristics and switching degradation in TaO _x -based memristors. Applied Physics Express, 2019, 12, 104003.	1.1	1
106	Cs ₂ AgBiBr ₆ -Tellurium heterojunction-based high-performance X-ray detectors. , 2022, , .		1
107	Etching Behavior and Damage Rejuvenation of Top Electrode and Bi _{3.15} Nd _{0.85} Ti ₃ O ₁₂ Films Applied in Ferroelectric Random Access Memory Devices. Japanese Journal of Applied Physics, 2009, 48, 050209.	0.8	0
108	Re-Programmable Antifuse FPGA Utilizing Resistive CeRAM Elements. Integrated Ferroelectrics, 2011, 124, 97-104.	0.3	0