

# Kan Hao Xue

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

102  
papers

2,453  
citations

29  
h-index

45  
g-index

108  
ext. papers

3,460  
ext. citations

5.9  
avg, IF

5.53  
L-index

#	Paper	IF	Citations
102	Reversible transition between the polar and antipolar phases and its implications for wake-up and fatigue in HfO-based ferroelectric thin film.. <i>Nature Communications</i> , <b>2022</b> , 13, 645	17.4	11
101	Designing stable 2D materials solely from VIA elements. <i>Applied Physics Letters</i> , <b>2021</b> , 119, 223101	3.4	0
100	Pt/AlO <sub>x</sub> /TaO <sub>x</sub> /Ta Self-Rectifying Memristor With Record-Low Operation Current (. <i>IEEE Transactions on Electron Devices</i> , <b>2021</b> , 1-5	2.9	1
99	Multilevel switching in Mg-doped HfO <sub>x</sub> memristor through the mutual-ion effect. <i>Applied Physics Letters</i> , <b>2021</b> , 119, 153505	3.4	5
98	Tailoring the electron and hole dimensionality to achieve efficient and stable metal halide perovskite scintillators. <i>Nanophotonics</i> , <b>2021</b> , 10, 2249-2256	6.3	3
97	12.7 MA/cm <sup>2</sup> On-Current Density and High Uniformity Realized in AgGeSe/Al <sub>2</sub> O <sub>3</sub> Selectors. <i>IEEE Electron Device Letters</i> , <b>2021</b> , 42, 613-616	4.4	2
96	Low-Power Memristive Logic Device Enabled by Controllable Oxidation of 2D HfSe for In-Memory Computing. <i>Advanced Science</i> , <b>2021</b> , 8, e2005038	13.6	13
95	Lead halide perovskite for efficient optoacoustic conversion and application toward high-resolution ultrasound imaging. <i>Nature Communications</i> , <b>2021</b> , 12, 3348	17.4	42
94	Uniform and robust TiN/HfO <sub>2</sub> /Pt memristor through interfacial Al-doping engineering. <i>Applied Surface Science</i> , <b>2021</b> , 550, 149274	6.7	12
93	Rh-engineered ultrathin NiFe-LDH nanosheets enable highly-efficient overall water splitting and urea electrolysis. <i>Applied Catalysis B: Environmental</i> , <b>2021</b> , 284, 119740	21.8	107
92	Plasma-induced moieties impart super-efficient activity to hydrogen evolution electrocatalysts. <i>Nano Energy</i> , <b>2021</b> , 85, 106030	17.1	10
91	Ultra-High Performance Amorphous Ga O Photodetector Arrays for Solar-Blind Imaging. <i>Advanced Science</i> , <b>2021</b> , 8, e2101106	13.6	19
90	2D materials-based homogeneous transistor-memory architecture for neuromorphic hardware. <i>Science</i> , <b>2021</b> , 373, 1353-1358	33.3	46
89	Homo-layer hafnia-based memristor with large analog switching window. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 043502	3.4	4
88	Evolution of the conductive filament system in HfO-based memristors observed by direct atomic-scale imaging.. <i>Nature Communications</i> , <b>2021</b> , 12, 7232	17.4	13
87	Unveiling the Structural Descriptor of A <sub>3</sub> B <sub>2</sub> X <sub>9</sub> Perovskite Derivatives toward X-Ray Detectors with Low Detection Limit and High Stability. <i>Advanced Functional Materials</i> , <b>2020</b> , 30, 1910648	15.6	67
86	A new family of two-dimensional ferroelastic semiconductors with negative Poisson's ratios. <i>Nanoscale</i> , <b>2020</b> , 12, 14150-14159	7.7	11

85	One-Dimensional All-Inorganic K <sub>2</sub> CuBr <sub>3</sub> with Violet Emission as Efficient X-ray Scintillators. <i>ACS Applied Electronic Materials</i> , <b>2020</b> , 2, 2242-2249	4	30
84	Forming-Free, Fast, Uniform, and High Endurance Resistive Switching From Cryogenic to High Temperatures in W/AlO <sub>x</sub> /Al <sub>2</sub> O <sub>3</sub> /Pt Bilayer Memristor. <i>IEEE Electron Device Letters</i> , <b>2020</b> , 41, 549-552	4.4	38
83	PtSe Monolayer: A Highly Efficient Electrocatalyst toward Hydrogen and Oxygen Electrode Reactions. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 13896-13903	9.5	15
82	Synergic Effect in a New Electrocatalyst Ni <sub>2</sub> SbTe <sub>2</sub> for Oxygen Reduction Reaction. <i>Journal of Physical Chemistry C</i> , <b>2020</b> , 124, 3671-3680	3.8	7
81	All-Inorganic Copper Halide as a Stable and Self-Absorption-Free X-ray Scintillator. <i>Journal of Physical Chemistry Letters</i> , <b>2020</b> , 11, 1873-1880	6.4	69
80	Two-dimensional perovskites as sensitive strain sensors. <i>Journal of Materials Chemistry C</i> , <b>2020</b> , 8, 3814-3820	3.8	13
79	Metal-Semiconductor-Metal (Ga <sub>2</sub> O <sub>3</sub> ) Solar-Blind Photodetectors with a Record-High Responsivity Rejection Ratio and Their Gain Mechanism. <i>ACS Photonics</i> , <b>2020</b> , 7, 812-820	6.3	69
78	Substrate-modulated ferromagnetism of two-dimensional Fe <sub>3</sub> GeTe <sub>2</sub> . <i>Applied Physics Letters</i> , <b>2020</b> , 116, 042402	3.4	14
77	Enhancement of DC/AC resistive switching performance in AlO <sub>x</sub> memristor by two-technique bilayer approach. <i>Applied Physics Letters</i> , <b>2020</b> , 116, 173504	3.4	11
76	Polyamorphism in K <sub>2</sub> Sb <sub>8</sub> Se <sub>13</sub> for multi-level phase-change memory. <i>Journal of Materials Chemistry C</i> , <b>2020</b> , 8, 6364-6369	7.1	10
75	Controlled Memory and Threshold Switching Behaviors in a Heterogeneous Memristor for Neuromorphic Computing. <i>Advanced Electronic Materials</i> , <b>2020</b> , 6, 2000309	6.4	21
74	Lead-free violet-emitting K <sub>2</sub> CuCl <sub>3</sub> single crystal with high photoluminescence quantum yield. <i>Organic Electronics</i> , <b>2020</b> , 86, 105903	3.5	13
73	Cation and Anion Co-doped Perovskite Nanofibers for Highly Efficient Electrocatalytic Oxygen Evolution. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 41259-41268	9.5	12
72	Nb <sub>2</sub> SiTe <sub>4</sub> and Nb <sub>2</sub> GeTe <sub>4</sub> : Unexplored 2D Ternary Layered Tellurides with High Stability, Narrow Band Gap and High Electron Mobility. <i>Journal of Electronic Materials</i> , <b>2020</b> , 49, 959-968	1.9	16
71	Oxygen migration around the filament region in HfO <sub>x</sub> memristors. <i>AIP Advances</i> , <b>2019</b> , 9, 105007	1.5	3
70	KTlO: a metal shrouded 2D semiconductor with high carrier mobility and tunable magnetism. <i>Nanoscale</i> , <b>2019</b> , 11, 1131-1139	7.7	25
69	Planar penta-transition metal phosphide and arsenide as narrow-gap semiconductors with ultrahigh carrier mobility. <i>Journal of Materials Science</i> , <b>2019</b> , 54, 7035-7047	4.3	13
68	TlP <sub>5</sub> : an unexplored direct band gap 2D semiconductor with ultra-high carrier mobility. <i>Journal of Materials Chemistry C</i> , <b>2019</b> , 7, 639-644	7.1	23

67	Two-dimensional silicon chalcogenides with high carrier mobility for photocatalytic water splitting. <i>Journal of Materials Science</i> , <b>2019</b> , 54, 11485-11496	4.3	13
66	In situ boost and reversible modulation of dual-mode photoluminescence under an electric field in a tape-casting-based Er-doped K <sub>0.5</sub> Na <sub>0.5</sub> NbO <sub>3</sub> laminar ceramic. <i>Journal of Materials Chemistry C</i> , <b>2019</b> , 7, 7885-7892	7.1	27
65	Heteroepitaxial passivation of CsAgBiBr wafers with suppressed ionic migration for X-ray imaging. <i>Nature Communications</i> , <b>2019</b> , 10, 1989	17.4	134
64	Ab Initio Simulation of Ta <sub>2</sub> O <sub>5</sub> : A High Symmetry Ground State Phase with Application to Interface Calculation. <i>Annalen Der Physik</i> , <b>2019</b> , 531, 1800524	2.6	5
63	Composition-Dependent Ferroelectric Properties in Sputtered Hf <sub>x</sub> Zr <sub>1-x</sub> O <sub>2</sub> Thin Films. <i>IEEE Electron Device Letters</i> , <b>2019</b> , 40, 570-573	4.4	19
62	Coexistence of Digital and Analog Resistive Switching With Low Operation Voltage in Oxygen-Gradient HfO <sub>x</sub> Memristors. <i>IEEE Electron Device Letters</i> , <b>2019</b> , 40, 1068-1071	4.4	18
61	An electro-photo-sensitive synaptic transistor for edge neuromorphic visual systems. <i>Nanoscale</i> , <b>2019</b> , 11, 17590-17599	7.7	34
60	Reversible modulation of photoenergy in Sm-doped (K <sub>0.5</sub> Na <sub>0.5</sub> )NbO <sub>3</sub> transparent ceramics via photochromic behavior. <i>Journal of Materials Chemistry A</i> , <b>2019</b> , 7, 19374-19384	13	59
59	Promising photocatalysts with high carrier mobility for water splitting in monolayer Ge <sub>2</sub> P <sub>4</sub> S <sub>2</sub> and Ge <sub>2</sub> As <sub>4</sub> S <sub>2</sub> . <i>International Journal of Hydrogen Energy</i> , <b>2019</b> , 44, 21536-21545	6.7	7
58	Gallium Thiophosphate: An Emerging Bidirectional Auxetic Two-Dimensional Crystal with Wide Direct Band Gap. <i>Journal of Physical Chemistry Letters</i> , <b>2019</b> , 10, 4455-4462	6.4	13
57	BaAs <sub>3</sub> : a narrow gap 2D semiconductor with vacancy-induced semiconductor-metal transition from first principles. <i>Journal of Materials Science</i> , <b>2019</b> , 54, 12676-12687	4.3	2
56	Lead-Free Halide Rb CuBr as Sensitive X-Ray Scintillator. <i>Advanced Materials</i> , <b>2019</b> , 31, e1904711	24	194
55	Self-compliance characteristics and switching degradation in TaO <sub>x</sub> -based memristors. <i>Applied Physics Express</i> , <b>2019</b> , 12, 104003	2.4	1
54	Electron transport properties of mirror twin grain boundaries in molybdenum disulfide: Impact of disorder. <i>Physical Review B</i> , <b>2019</b> , 100,	3.3	5
53	Single-layer planar penta-X <sub>2</sub> N <sub>4</sub> (X = Ni, Pd and Pt) as direct-bandgap semiconductors from first principle calculations. <i>Applied Surface Science</i> , <b>2019</b> , 469, 456-462	6.7	23
52	Tailoring the electrocatalytic activity of bimetallic nickel-iron diselenide hollow nanochains for water oxidation. <i>Nano Energy</i> , <b>2018</b> , 47, 275-284	17.1	90
51	Conducting mechanism of Ag-diffused Bi <sub>2</sub> Te <sub>3</sub> based resistive switching devices. <i>Applied Physics A: Materials Science and Processing</i> , <b>2018</b> , 124, 1	2.6	2
50	Reducing Forming Voltage by Applying Bipolar Incremental Step Pulse Programming in a 1T1R Structure Resistance Random Access Memory. <i>IEEE Electron Device Letters</i> , <b>2018</b> , 39, 815-818	4.4	15

49	Oxygen vacancy chain and conductive filament formation in hafnia. <i>Journal of Applied Physics</i> , <b>2018</b> , 123, 161505	2.5	25
48	Boolean and Sequential Logic in a One-Memristor-One-Resistor (1M1R) Structure for In-Memory Computing. <i>Advanced Electronic Materials</i> , <b>2018</b> , 4, 1800229	6.4	13
47	Improved LDA-1/2 method for band structure calculations in covalent semiconductors. <i>Computational Materials Science</i> , <b>2018</b> , 153, 493-505	3.2	39
46	Model of dielectric breakdown in hafnia-based ferroelectric capacitors. <i>Journal of Applied Physics</i> , <b>2018</b> , 124, 024103	2.5	11
45	Structural disorder in the high-temperature cubic phase of GeTe.. <i>RSC Advances</i> , <b>2018</b> , 8, 17435-17442	3.7	6
44	Design lateral heterostructure of monolayer ZrS <sub>2</sub> and HfS <sub>2</sub> from first principles calculations. <i>Applied Surface Science</i> , <b>2018</b> , 436, 919-926	6.7	21
43	GGA-1/2 self-energy correction for accurate band structure calculations: the case of resistive switching oxides. <i>Journal of Physics Communications</i> , <b>2018</b> , 2, 105005	1.2	44
42	Theoretical investigation of the Ag filament morphology in conductive bridge random access memories. <i>Journal of Applied Physics</i> , <b>2018</b> , 124, 152125	2.5	11
41	Performance enhancement of TaOx resistive switching memory using graded oxygen content. <i>Applied Physics Letters</i> , <b>2018</b> , 113, 183501	3.4	22
40	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> , <b>2018</b> , 65, 4659-4666	2.9	35
39	Diverse spike-timing-dependent plasticity based on multilevel HfO <sub>x</sub> memristor for neuromorphic computing. <i>Applied Physics A: Materials Science and Processing</i> , <b>2018</b> , 124, 1	2.6	18
38	Ideal strength and elastic instability in single-layer 8-Pmmn borophene. <i>RSC Advances</i> , <b>2017</b> , 7, 8654-8666	3.7	40
37	Stability, electronic and thermodynamic properties of aluminene from first-principles calculations. <i>Applied Surface Science</i> , <b>2017</b> , 409, 85-90	6.7	40
36	Ferroelectric fatigue in layered perovskites from self-energy corrected density functional theory. <i>RSC Advances</i> , <b>2017</b> , 7, 21856-21868	3.7	14
35	Customized binary and multi-level HfO <sub>2</sub> -based memristors tuned by oxidation conditions. <i>Scientific Reports</i> , <b>2017</b> , 7, 10070	4.9	30
34	Correlation analysis between the current fluctuation characteristics and the conductive filament morphology of HfO <sub>2</sub> -based memristor. <i>Applied Physics Letters</i> , <b>2017</b> , 111, 213505	3.4	11
33	Filament-to-dielectric band alignments in (hbox {TiO}_{2}) and (hbox {HfO}_{2}) resistive RAMs. <i>Journal of Computational Electronics</i> , <b>2017</b> , 16, 1057-1065	1.8	5
32	Realization of Functional Complete Stateful Boolean Logic in Memristive Crossbar. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2016</b> , 8, 34559-34567	9.5	42

31	Mimicking the brain functions of learning, forgetting and explicit/implicit memories with SrTiO-based memristive devices. <i>Physical Chemistry Chemical Physics</i> , <b>2016</b> , 18, 31796-31802	3.6	31
30	Effect of MgO/Fe Interface Oxidation State on Electric-Field Modulation of Interfacial Magnetic Anisotropy. <i>Journal of Electronic Materials</i> , <b>2016</b> , 45, 3162-3166	1.9	3
29	Conductance quantization in an AgInSbTe-based memristor at nanosecond scale. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 153506	3.4	11
28	Low work function of crystalline GeTe/Sb <sub>2</sub> Te <sub>3</sub> superlattice-like films induced by Te dangling bonds. <i>Journal Physics D: Applied Physics</i> , <b>2016</b> , 49, 495302	3	10
27	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> , <b>2016</b> , 163, A2817-A2829	3.9	43
26	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> , <b>2016</b> , 119, 133905	2.5	9
25	Pressure-induced novel compounds in the Hf-O system from first-principles calculations. <i>Physical Review B</i> , <b>2015</b> , 92,	3.3	31
24	A Comprehensive Model for Non-Aqueous Lithium Air Batteries Involving Different Reaction Mechanisms. <i>Journal of the Electrochemical Society</i> , <b>2015</b> , 162, A614-A621	3.9	66
23	A Combined Ab Initio 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> , <b>2014</b> , 61, 1394-1402	2.9	50
22	A Multiscale Model of Electrochemical Double Layers in Energy Conversion and Storage Devices. <i>Journal of the Electrochemical Society</i> , <b>2014</b> , 161, E3302-E3310	3.9	42
21	First-principles study of A-site substitution in ferroelectric bismuth titanate. <i>Journal of Materials Science</i> , <b>2014</b> , 49, 6363-6372	4.3	3
20	Impact of the Cathode Microstructure on the Discharge Performance of Lithium Air Batteries: A Multiscale Model. <i>Journal of the Electrochemical Society</i> , <b>2014</b> , 161, E3028-E3035	3.9	64
19	A convective transport theory for high rate discharge in lithium ion cells. <i>Electrochimica Acta</i> , <b>2013</b> , 87, 575-590	6.7	15
18	Prediction of semimetallic tetragonal Hf <sub>2</sub> O <sub>3</sub> and Zr <sub>2</sub> O <sub>3</sub> from first principles. <i>Physical Review Letters</i> , <b>2013</b> , 110, 065502	7.4	67
17	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> , <b>2013</b> , 2, M3084-M3100	2	63
16	Re-Programmable Antifuse FPGA Utilizing Resistive CeRAM Elements. <i>Integrated Ferroelectrics</i> , <b>2011</b> , 124, 97-104	0.8	
15	Device characterization of correlated electron random access memories. <i>Journal of Applied Physics</i> , <b>2011</b> , 109, 091608	2.5	8
14	Material and process optimization of correlated electron random access memories. <i>Journal of Applied Physics</i> , <b>2011</b> , 109, 091603	2.5	10

13	Investigation on Divalent Metal Substituted Bismuth Titanate Ferroelectric Thin Films. <i>Integrated Ferroelectrics</i> , <b>2011</b> , 124, 26-32	0.8	1
12	A non-filamentary model for unipolar switching transition metal oxide resistance random access memories. <i>Journal of Applied Physics</i> , <b>2011</b> , 109, 091602	2.5	16
11	Operating Current Reduction in Nickel Oxide Correlated Electron Random Access Memories (CeRAMs) Through Controlled Fabrication Processes. <i>Integrated Ferroelectrics</i> , <b>2011</b> , 124, 105-111	0.8	0
10	A comparative study on Bi <sub>4</sub> Ti <sub>3</sub> O <sub>12</sub> and Bi <sub>3.25</sub> La <sub>0.75</sub> Ti <sub>3</sub> O <sub>12</sub> ferroelectric thin films derived by metal organic decomposition. <i>Journal of Applied Physics</i> , <b>2010</b> , 107, 104123	2.5	15
9	Etching Behavior and Damage Rejuvenation of Top Electrode and Bi <sub>3.15</sub> Nd <sub>0.85</sub> Ti <sub>3</sub> O <sub>12</sub> Films Applied in Ferroelectric Random Access Memory Devices. <i>Japanese Journal of Applied Physics</i> , <b>2009</b> , 48, 050209	1.4	
8	Low temperature preparation of ferroelectric bismuth titanate thin films. <i>Applied Physics Letters</i> , <b>2009</b> , 95, 052908	3.4	15
7	STUDIES ON THE FATIGUE BEHAVIOR OF FERROELECTRIC FILM USING PREISACH APPROACH. <i>Integrated Ferroelectrics</i> , <b>2008</b> , 99, 3-12	0.8	2
6	NITROGEN-RICH TITANIUM NITRIDE SERVING as Pt-Al DIFFUSION BARRIER FOR FeRAM APPLICATION. <i>Integrated Ferroelectrics</i> , <b>2008</b> , 96, 19-26	0.8	4
5	Investigation on Annealing and Etching Effects for Pt/Bi <sub>3.15</sub> Nd <sub>0.85</sub> Ti <sub>3</sub> O <sub>12</sub> /Pt Ferroelectric Capacitors. <i>Japanese Journal of Applied Physics</i> , <b>2007</b> , 46, 4200-4202	1.4	1
4	STUDIES ON THE RELAX BEHAVIOR OF SrBi <sub>2</sub> Ta <sub>2</sub> O <sub>9</sub> THIN FILMS. <i>Integrated Ferroelectrics</i> , <b>2006</b> , 79, 81-87.8		3
3	Microscopic mechanism of imprint in hafnium oxide-based ferroelectrics. <i>Nano Research</i> , 1	10	4
2	A High-Performance Ag/TiN/HfO <sub>x</sub> /HfO <sub>y</sub> /HfO <sub>x</sub> /Pt Diffusive Memristor for Calibration-Free True Random Number Generator. <i>Advanced Electronic Materials</i> , 2200202	6.4	3
1	HfO <sub>x</sub> /AlO <sub>y</sub> Superlattice-Like Memristive Synapse. <i>Advanced Science</i> , 2201446	13.6	1