Kai Liu

List of Publications by Year
in descending order

128 papers	9,601 citations	47006 47 h-index	38395 95 g-index
129 all docs	129 docs citations	129 times ranked	13931 citing authors

#	Article	IF	Citations
1	Reconfigurable Carbon Nanotube Barristor. Advanced Functional Materials, 2022, 32, .	14.9	2
2	Phase-change materials for intelligent temperature regulation. Materials Today Energy, 2022, 23, 100888.	4.7	21
3	Recent Progress in Two-Dimensional MoTe2 Hetero-Phase Homojunctions. Nanomaterials, 2022, 12, 110.	4.1	8
4	Lateral layered semiconductor multijunctions for novel electronic devices. Chemical Society Reviews, 2022, 51, 4000-4022.	38.1	12
5	Ultrafast self-heating synthesis of robust heterogeneous nanocarbides for high current density hydrogen evolution reaction. Nature Communications, 2022, 13, .	12.8	62
6	Free-standing hybrid films comprising of ultra-dispersed titania nanocrystals and hierarchical conductive network for excellent high rate performance of lithium storage. Nano Research, 2021, 14, 2301-2308.	10.4	10
7	Enhanced photoresponse of TiO2/MoS2 heterostructure phototransistors by the coupling of interface charge transfer and photogating. Nano Research, 2021, 14, 982-991.	10.4	25
8	Ultrafast, Kinetically Limited, Ambient Synthesis of Vanadium Dioxides through Laser Direct Writing on Ultrathin Chalcogenide Matrix. ACS Nano, 2021, 15, 10502-10513.	14.6	17
9	Few-Layer MoS₂ Nanosheet/Carbon Nanotube Composite Films for Long-Lifetime Lithium Storage and Hydrogen Generation. ACS Applied Nano Materials, 2021, 4, 4754-4762.	5.0	13
10	Two-Dimensional Lateral Heterostructures Made by Selective Reaction on a Patterned Monolayer MoS2 Matrix. ACS Applied Materials & Interfaces, 2021, 13, 26143-26151.	8.0	5
11	Grainâ€Boundary Engineering of Monolayer MoS₂ for Energyâ€Efficient Lateral Synaptic Devices. Advanced Materials, 2021, 33, e2102435.	21.0	53
12	Advances in phase-change materials. Journal of Applied Physics, 2021, 130, .	2.5	4
13	Grainâ€Boundary Engineering of Monolayer MoS₂ for Energyâ€Efficient Lateral Synaptic Devices (Adv. Mater. 32/2021). Advanced Materials, 2021, 33, 2170251.	21.0	1
14	A new opportunity for the emerging tellurium semiconductor: making resistive switching devices. Nature Communications, 2021, 12, 6081.	12.8	25
15	Monolayer MoS₂ Synaptic Transistors for High-Temperature Neuromorphic Applications. Nano Letters, 2021, 21, 10400-10408.	9.1	41
16	Wafer-scale freestanding vanadium dioxide film. Science Advances, 2021, 7, eabk3438.	10.3	24
17	Optically Induced Phase Change for Magnetoresistance Modulation. Advanced Quantum Technologies, 2020, 3, 1900104.	3.9	34
18	Solution processed lead-free cesium titanium halide perovskites and their structural, thermal and optical characteristics. Journal of Materials Chemistry C, 2020, 8, 1591-1597.	5.5	67

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19	Mesoporous TiO₂ Spheres as Advanced Anodes for Low-Cost, Safe, and High-Areal-Capacity Lithium-Ion Full Batteries. ACS Applied Nano Materials, 2020, 3, 1019-1027.	5.0	25
20	Bifunctional NbS₂-Based Asymmetric Heterostructure for Lateral and Vertical Electronic Devices. ACS Nano, 2020, 14, 175-184.	14.6	51
21	Modulation of the resistive switching of BiFO₃ thin films through electrical stressing. Journal Physics D: Applied Physics, 2020, 53, 115301.	2.8	9
22	Recent advances for phase-transition materials for actuators. Journal of Applied Physics, 2020, 128, .	2.5	12
23	Solid Electrolytes: A Garnetâ€Type Solidâ€Electrolyteâ€Based Molten Lithiumâ^'Molybdenumâ^'Iron(II) Chloride Battery with Advanced Reaction Mechanism (Adv. Mater. 32/2020). Advanced Materials, 2020, 32, 2070242.	21.0	1
24	A lightly Fe-doped (NiS₂/MoS₂)/carbon nanotube hybrid electrocatalyst film with laser-drilled micropores for stabilized overall water splitting and pH-universal hydrogen evolution reaction. Journal of Materials Chemistry A, 2020, 8, 17527-17536.	10.3	59
25	Bioelectronicsâ€Related 2D Materials Beyond Graphene: Fundamentals, Properties, and Applications. Advanced Functional Materials, 2020, 30, 2003732.	14.9	39
26	Effect of Uniaxial Tensile Strains at Different Orientations on the Characteristics of AlGaN/GaN High-Electron-Mobility Transistors. IEEE Transactions on Electron Devices, 2020, 67, 449-454.	3.0	12
27	A Garnetâ€Type Solidâ€Electrolyteâ€Based Molten Lithiumâ^'Molybdenumâ^'Iron(II) Chloride Battery with Advanced Reaction Mechanism. Advanced Materials, 2020, 32, e2000960.	21.0	14
28	A flexible, multifunctional, active terahertz modulator with an ultra-low triggering threshold. Journal of Materials Chemistry C, 2020, 8, 10213-10220.	5.5	15
29	Direct laser patterning of two-dimensional lateral transition metal disulfide-oxide-disulfide heterostructures for ultrasensitive sensors. Nano Research, 2020, 13, 2035-2043.	10.4	21
30	Ionic Sensing Hydrogels: Ultrasensitive, Lowâ€Voltage Operational, and Asymmetric Ionic Sensing Hydrogel for Multipurpose Applications (Adv. Funct. Mater. 12/2020). Advanced Functional Materials, 2020, 30, 2070080.	14.9	1
31	Multiple Regulation over Growth Direction, Band Structure, and Dimension of Monolayer WS₂ by a Quartz Substrate. Chemistry of Materials, 2020, 32, 2508-2517.	6.7	21
32	High-purity electrolytic lithium obtained from low-purity sources using solid electrolyte. Nature Sustainability, 2020, 3, 386-390.	23.7	54
33	Ultrasensitive, Lowâ€Voltage Operational, and Asymmetric Ionic Sensing Hydrogel for Multipurpose Applications. Advanced Functional Materials, 2020, 30, 1909616.	14.9	29
34	Flexible and free-standing hetero-electrocatalyst of high-valence-cation doped MoS₂/MoO₂/CNT foam with synergistically enhanced hydrogen evolution reaction catalytic activity. Journal of Materials Chemistry A, 2020, 8, 14944-14954.	10.3	25
35	A Review on Anode Side Interface Stability Micromechanisms and Engineering for Garnet Electrolyte-based Solid-state Batteries. Chemical Research in Chinese Universities, 2020, 36, 351-359.	2.6	6
36	Role of the lattice in the light-induced insulator-to-metal transition in vanadium dioxide. Physical Review Research, 2020, 2, .	3.6	9

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37	High-Responsivity Photovoltaic Photodetectors Based on MoTe2/MoSe2 van der Waals Heterojunctions. Crystals, 2019, 9, 315.	2.2	21
38	Two-dimensional transition-metal dichalcogenides for electrochemical hydrogen evolution reaction. FlatChem, 2019, 18, 100140.	5.6	39
39	Electric and Light Dual-Gate Tunable MoS₂ Memtransistor. ACS Applied Materials & Interfaces, 2019, 11, 43344-43350.	8.0	51
40	Infrared micro-detectors with high sensitivity and high response speed using VO₂-coated helical carbon nanocoils. Journal of Materials Chemistry C, 2019, 7, 12095-12103.	5.5	21
41	Continuous, Ultra-lightweight, and Multipurpose Super-aligned Carbon Nanotube Tapes Viable over a Wide Range of Temperatures. Nano Letters, 2019, 19, 6756-6764.	9.1	17
42	Synthesis, properties, and applications of large-scale two-dimensional materials by polymer-assisted deposition. Journal of Semiconductors, 2019, 40, 061003.	3.7	9
43	Chemical and structural stability of 2D layered materials. 2D Materials, 2019, 6, 042001.	4.4	94
44	MOFs-derived ZnCoâ€“Fe coreâ€“shell nanocages with remarkable oxygen evolution reaction performance. Journal of Materials Chemistry A, 2019, 7, 17299-17305.	10.3	47
45	Highly Efficient Active All-Dielectric Metasurfaces Based on Hybrid Structures Integrated with Phase-Change Materials: From Terahertz to Optical Ranges. ACS Applied Materials & Interfaces, 2019, 11, 14229-14238.	8.0	29
46	Watching Dynamic Self-Assembly of Web Buckles in Strained MoS₂ Thin Films. ACS Nano, 2019, 13, 3106-3116.	14.6	24
47	Phase-transition modulated, high-performance dual-mode photodetectors based on WSe₂/VO₂ heterojunctions. Applied Physics Reviews, 2019, 6, 041407.	11.3	50
48	Possible phonon-induced electronic bi-stability in VO2 for ultrafast memory at room temperature. , 2019, , .		1
49	Strain engineering in functional 2-dimensional materials. Journal of Applied Physics, 2019, 125, .	2.5	79
50	Elastic Properties and Fracture Behaviors of Biaxially Deformed, Polymorphic MoTe₂. Nano Letters, 2019, 19, 761-769.	9.1	67
51	Evolution of local strain in Ag-deposited monolayer MoS₂ modulated by interface interactions. Nanoscale, 2019, 11, 22432-22439.	5.6	12
52	Recent progresses on physics and applications of vanadium dioxide. Materials Today, 2018, 21, 875-896.	14.2	318
53	Reconfigurable Photonic Platforms: A Lithographyâ€Free and Fieldâ€Programmable Photonic Metacanvas (Adv. Mater. 5/2018). Advanced Materials, 2018, 30, 1870034.	21.0	4
54	Substrate modified thermal stability of mono- and few-layer MoS₂. Nanoscale, 2018, 10, 3540-3546.	5.6	43

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55	Free-Standing, Binder-Free Titania/Super-Aligned Carbon Nanotube Anodes for Flexible and Fast-Charging Li-Ion Batteries. ACS Sustainable Chemistry and Engineering, 2018, 6, 3426-3433.	6.7	34
56	Robust photoluminescence energy of MoS2/graphene heterostructure against electron irradiation. Science China Materials, 2018, 61, 1351-1359.	6.3	8
57	Ultrathin two-dimensional metals with fully exposed (111) facets. Chemical Communications, 2018, 54, 160-163.	4.1	17
58	A Lithographyâ€Free and Fieldâ€Programmable Photonic Metacanvas. Advanced Materials, 2018, 30, 1703878.	21.0	75
59	Langmuirâ€“Blodgett self-assembly of ultrathin graphene quantum dot films with modulated optical properties. Nanoscale, 2018, 10, 19612-19620.	5.6	23
60	Probing Evolution of Local Strain at MoS₂-Metal Boundaries by Surface-Enhanced Raman Scattering. ACS Applied Materials & Interfaces, 2018, 10, 40246-40254.	8.0	28
61	Photo-driven nanoactuators based on carbon nanocoils and vanadium dioxide bimorphs. Nanoscale, 2018, 10, 11158-11164.	5.6	35
62	An intermediate temperature garnet-type solid electrolyte-based molten lithium battery for grid energy storage. Nature Energy, 2018, 3, 732-738.	39.5	170
63	Substrate induced changes in atomically thin 2-dimensional semiconductors: Fundamentals, engineering, and applications. Applied Physics Reviews, 2017, 4, 011301.	11.3	97
64	A soft non-porous separator and its effectiveness in stabilizing Li metal anodes cycling at 10 mA cm^{â^'2} observed in situ in a capillary cell. Journal of Materials Chemistry A, 2017, 5, 4300-4307.	10.3	66
65	Anomalously low electronic thermal conductivity in metallic vanadium dioxide. Science, 2017, 355, 371-374.	12.6	307
66	Pressureâ€“Temperature Phase Diagram of Vanadium Dioxide. Nano Letters, 2017, 17, 2512-2516.	9.1	65
67	SWCNTâ€MoS₂â€SWCNT Vertical Point Heterostructures. Advanced Materials, 2017, 29, 1604469.	21.0	32
68	Flexible, All-Inorganic Actuators Based on Vanadium Dioxide and Carbon Nanotube Bimorphs. Nano Letters, 2017, 17, 421-428.	9.1	89
69	Simple synthesis of a double-shell hollow structured MnO₂@TiO₂ composite as an anode material for lithium ion batteries. RSC Advances, 2017, 7, 46263-46270.	3.6	18
70	Fast synthesis of uniform mesoporous titania submicrospheres with high tap densities for high-volumetric performance Li-ion batteries. Science China Materials, 2017, 60, 304-314.	6.3	17
71	Sintering behavior of garnetâ€type Li_{6.4}La₃Zr_{1.4}Ta_{0.6}O₁₂ in Li₂CO₃ atmosphere and its electrochemical property. International Journal of Applied Ceramic Technology, 2017, 14, 921-927.	2.1	27
72	Interfacing 2D Semiconductors with Functional Oxides: Fundamentals, Properties, and Applications. Crystals, 2017, 7, 265.	2.2	18

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73	Crossing Thermal Lubricity and Electronic Effects in Friction: Vanadium Dioxide under the Metalâ€“Insulator Transition. Advanced Materials Interfaces, 2016, 3, 1500388.	3.7	13
74	Modulating Photoluminescence of Monolayer Molybdenum Disulfide by Metalâ€“Insulator Phase Transition in Active Substrates. Small, 2016, 12, 3976-3984.	10.0	30
75	Three Dimensional Sculpturing of Vertical Nanowire Arrays by Conventional Photolithography. Scientific Reports, 2016, 6, 18886.	3.3	7
76	Stress compensation for arbitrary curvature control in vanadium dioxide phase transition actuators. Applied Physics Letters, 2016, 109, .	3.3	19
77	Cycling of a Lithiumâ€Ion Battery with a Silicon Anode Drives Large Mechanical Actuation. Advanced Materials, 2016, 28, 10236-10243.	21.0	40
78	Mechanical properties of two-dimensional materials and heterostructures. Journal of Materials Research, 2016, 31, 832-844.	2.6	84
79	Observation of Charge Generation and Transfer during CVD Growth of Carbon Nanotubes. Nano Letters, 2016, 16, 4102-4109.	9.1	30
80	Vibrational spectrum renormalization by enforced coupling across the van der Waals gap between<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="bold">Mo</mml:mi><mml:msub><mml:mi mathvariant="bold">S</mml:mi><mml:mn mathvariant="bold">2</mml:mn></mml:msub></mml:mrow></mml:math>and<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="bold">W</mml:mi><mml:msub><mml:mi mathvariant="bold">S</mml:mi><mml:mn mathva	3.2	30
81	Selfâ€Passivation of Defects: Effects of Highâ€Energy Particle Irradiation on the Elastic Modulus of Multilayer Graphene. Advanced Materials, 2015, 27, 6841-6847.	21.0	24
82	Directly Metering Light Absorption and Heat Transfer in Single Nanowires Using Metalâ€“Insulator Transition in VO₂. Advanced Optical Materials, 2015, 3, 336-341.	7.3	21
83	Fast Adaptive Thermal Camouflage Based on Flexible VO₂/Graphene/CNT Thin Films. Nano Letters, 2015, 15, 8365-8370.	9.1	253
84	Magnetoresistance oscillations in topological insulator Bi2Te3 nanoscale antidot arrays. Nanotechnology, 2015, 26, 265301.	2.6	3
85	Anisotropic in-plane thermal conductivity of black phosphorus nanoribbons at temperatures higher than 100â€‰K. Nature Communications, 2015, 6, 8573.	12.8	311
86	TiO2-based solar cells sensitized by chemical-bath-deposited few-layer MoS2. Journal of Power Sources, 2015, 275, 943-949.	7.8	27
87	Tuning Interlayer Coupling in Large-Area Heterostructures with CVD-Grown MoS₂ and WS₂ Monolayers. Nano Letters, 2014, 14, 3185-3190.	9.1	683
88	Monolayer behaviour in bulk ReS2 due to electronic and vibrational decoupling. Nature Communications, 2014, 5, 3252.	12.8	906
89	A specially designed Liâ€“H2O2 semi-fuel cell: A potential choice for electric vehicle propulsion. RSC Advances, 2014, 4, 18894.	3.6	6
90	Direct Observation of Nanoscale Peltier and Joule Effects at Metalâ€“Insulator Domain Walls in Vanadium Dioxide Nanobeams. Nano Letters, 2014, 14, 2394-2400.	9.1	37

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91	Probing Local Strain at MX₂â€“Metal Boundaries with Surface Plasmon-Enhanced Raman Scattering. Nano Letters, 2014, 14, 5329-5334.	9.1	118
92	Elastic Properties of Chemical-Vapor-Deposited Monolayer MoS₂, WS₂, and Their Bilayer Heterostructures. Nano Letters, 2014, 14, 5097-5103.	9.1	512
93	Powerful, Multifunctional Torsional Micromuscles Activated by Phase Transition. Advanced Materials, 2014, 26, 1746-1750.	21.0	76
94	Self-Assembly and Horizontal Orientation Growth of VO2 Nanowires. Scientific Reports, 2014, 4, 5456.	3.3	49
95	Mechanically modulated tunneling resistance in monolayer MoS2. Applied Physics Letters, 2013, 103, .	3.3	43
96	Excitation of Surface Plasmon Resonance in Composite Structures Based on Single-Layer Superaligned Carbon Nanotube Films. Journal of Physical Chemistry C, 2013, 117, 23190-23197.	3.1	12
97	High-order ALE method for the Navierâ€“Stokes equations on a moving hybrid unstructured mesh using flux reconstruction method. International Journal of Computational Fluid Dynamics, 2013, 27, 251-267.	1.2	7
98	Axially Engineered Metalâ€“Insulator Phase Transition by Graded Doping VO₂ Nanowires. Journal of the American Chemical Society, 2013, 135, 4850-4855.	13.7	96
99	Comprehensive study of the metal-insulator transition in pulsed laser deposited epitaxial VO2 thin films. Journal of Applied Physics, 2013, 113, .	2.5	134
100	Performance Limits of Microactuation with Vanadium Dioxide as a Solid Engine. ACS Nano, 2013, 7, 2266-2272.	14.6	66
101	Ultra-long, free-standing, single-crystalline vanadium dioxide micro/nanowires grown by simple thermal evaporation. Applied Physics Letters, 2012, 100, .	3.3	103
102	Anisotropic interfacial friction of inclined multiwall carbon nanotube array surface. Carbon, 2012, 50, 5372-5379.	10.3	24
103	Giant-Amplitude, High-Work Density Microactuators with Phase Transition Activated Nanolayer Bimorphs. Nano Letters, 2012, 12, 6302-6308.	9.1	158
104	Dense Electron System from Gate-Controlled Surface Metalâ€“Insulator Transition. Nano Letters, 2012, 12, 6272-6277.	9.1	57
105	Direct Identification of Metallic and Semiconducting Single-Walled Carbon Nanotubes in Scanning Electron Microscopy. Nano Letters, 2012, 12, 4095-4101.	9.1	61
106	New-Type Planar Field Emission Display with Superaligned Carbon Nanotube Yarn Emitter. Nano Letters, 2012, 12, 2391-2396.	9.1	87
107	Fabrication and processing of high-strength densely packed carbon nanotube yarns without solution processes. Nanoscale, 2012, 4, 3389.	5.6	36
108	A polarized infrared thermal detector made from super-aligned multiwalled carbon nanotube films. Nanotechnology, 2011, 22, 025502.	2.6	36

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109	Field-effect modulation of conductance in VO2 nanobeam transistors with HfO2 as the gate dielectric. Applied Physics Letters, 2011, 99, .	3.3	70
110	In Situ TEM observation of the gasification and growth of carbon nanotubes using iron catalysts. Nano Research, 2011, 4, 767-779.	10.4	91
111	Crossâ€Stacked Superaligned Carbon Nanotube Films for Transparent and Stretchable Conductors. Advanced Functional Materials, 2011, 21, 2721-2728.	14.9	156
112	Flexible, Stretchable, Transparent Conducting Films Made from Superaligned Carbon Nanotubes. Advanced Functional Materials, 2010, 20, 885-891.	14.9	363
113	Field emission behavior study of multiwalled carbon nanotube yarn under the influence of adsorbents. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2010, 28, 736-739.	1.2	13
114	Scratch-Resistant, Highly Conductive, and High-Strength Carbon Nanotube-Based Composite Yarns. ACS Nano, 2010, 4, 5827-5834.	14.6	243
115	Highly Sensitive Surface-Enhanced Raman Scattering Substrate Made from Superaligned Carbon Nanotubes. Nano Letters, 2010, 10, 1747-1753.	9.1	157
116	Carbon nanotube yarns with high tensile strength made by a twisting and shrinking method. Nanotechnology, 2010, 21, 045708.	2.6	219
117	Periodically striped films produced from super-aligned carbon nanotube arrays. Nanotechnology, 2009, 20, 335705.	2.6	34
118	Fast Highâ€Temperature Response of Carbon Nanotube Film and Its Application as an Incandescent Display. Advanced Materials, 2009, 21, 3563-3566.	21.0	91
119	Thermal Analysis Study of the Growth Kinetics of Carbon Nanotubes and Epitaxial Graphene Layers on Them. Journal of Physical Chemistry C, 2009, 113, 9623-9631.	3.1	32
120	Controlled Fabrication of High-Quality Carbon Nanoscrolls from Monolayer Graphene. Nano Letters, 2009, 9, 2565-2570.	9.1	312
121	Measuring the Work Function of Carbon Nanotubes with Thermionic Method. Nano Letters, 2008, 8, 647-651.	9.1	199
122	Controlled Growth of Super-Aligned Carbon Nanotube Arrays for Spinning Continuous Unidirectional Sheets with Tunable Physical Properties. Nano Letters, 2008, 8, 700-705.	9.1	259
123	A Vapor-Liquid-Solid Model for Chemical Vapor Deposition Growth of Carbon Nanotubes. Journal of Nanoscience and Nanotechnology, 2007, 7, 1494-1504.	0.9	39
124	Controlled Termination of the Growth of Vertically Aligned Carbon Nanotube Arrays. Advanced Materials, 2007, 19, 975-978.	21.0	37
125	Effect of carbon deposits on the reactor wall during the growth of multi-walled carbon nanotube arrays. Carbon, 2007, 45, 2379-2387.	10.3	26
126	LaB6 tip-modified multiwalled carbon nanotube as high quality field emission electron source. Applied Physics Letters, 2006, 89, 203112.	3.3	38

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127	A growth mark method for studying growth mechanism of carbon nanotube arrays. Carbon, 2005, 43, 2850-2856.	10.3	142
128	Stable freestanding two-dimensional anionic electrons in YCl with extremely weak interlayer interaction. Journal of Materials Chemistry C, 0, , .	5.5	2