Kai Liu

List of Publications by Citations

121 papers	7,282 citations	39 h-index	84 g-index
129 ext. papers	8,458 ext. citations	11.2 avg, IF	5.85 L-index

#	Paper	IF	Citations
121	Monolayer behaviour in bulk ReS2 due to electronic and vibrational decoupling. *Nature Communications*, **2014**, 5, 3252	17.4	728
120	Tuning interlayer coupling in large-area heterostructures with CVD-grown MoS2 and WS2 monolayers. *Nano Letters*, **2014**, 14, 3185-90	11.5	562
119	Elastic properties of chemical-vapor-deposited monolayer MoS2, WS2, and their bilayer heterostructures. *Nano Letters*, **2014**, 14, 5097-103	11.5	384
118	Flexible, Stretchable, Transparent Conducting Films Made from Superaligned Carbon Nanotubes. *Advanced Functional Materials*, **2010**, 20, 885-891	15.6	328
117	Controlled fabrication of high-quality carbon nanoscrolls from monolayer graphene. *Nano Letters*, **2009**, 9, 2565-70	11.5	276
116	Anisotropic in-plane thermal conductivity of black phosphorus nanoribbons at temperatures higher than 100 K. *Nature Communications*, **2015**, 6, 8573	17.4	249
115	Controlled growth of super-aligned carbon nanotube arrays for spinning continuous unidirectional sheets with tunable physical properties. *Nano Letters*, **2008**, 8, 700-5	11.5	239
114	Scratch-resistant, highly conductive, and high-strength carbon nanotube-based composite yarns. *ACS Nano*, **2010**, 4, 5827-34	16.7	217
113	Anomalously low electronic thermal conductivity in metallic vanadium dioxide. *Science*, **2017**, 355, 371-374	33.3	208
112	Carbon nanotube yarns with high tensile strength made by a twisting and shrinking method. *Nanotechnology*, **2010**, 21, 045708	3.4	192
111	Recent progresses on physics and applications of vanadium dioxide. *Materials Today*, **2018**, 21, 875-896	21.8	187
110	Fast Adaptive Thermal Camouflage Based on Flexible VO$_2$/Graphene/CNT Thin Films. *Nano Letters*, **2015**, 15, 8365-70	11.5	180
109	Measuring the work function of carbon nanotubes with thermionic method. *Nano Letters*, **2008**, 8, 647-51	11.5	169
108	Highly sensitive surface-enhanced Raman scattering substrate made from superaligned carbon nanotubes. *Nano Letters*, **2010**, 10, 1747-53	11.5	146
107	Cross-Stacked Superaligned Carbon Nanotube Films for Transparent and Stretchable Conductors. *Advanced Functional Materials*, **2011**, 21, 2721-2728	15.6	142
106	A growth mark method for studying growth mechanism of carbon nanotube arrays. *Carbon*, **2005**, 43, 2850-2856	10.4	131
105	An intermediate temperature garnet-type solid electrolyte-based molten lithium battery for grid energy storage. *Nature Energy*, **2018**, 3, 732-738	62.3	126

104	Giant-amplitude, high-work density microactuators with phase transition activated nanolayer bimorphs. *Nano Letters*, **2012**, 12, 6302-8	11.5	124
103	Comprehensive study of the metal-insulator transition in pulsed laser deposited epitaxial VO2 thin films. *Journal of Applied Physics*, **2013**, 113, 043707	2.5	105
102	Ultra-long, free-standing, single-crystalline vanadium dioxide micro/nanowires grown by simple thermal evaporation. *Applied Physics Letters*, **2012**, 100, 103111	3.4	93
101	Probing local strain at MX(2)-metal boundaries with surface plasmon-enhanced Raman scattering. *Nano Letters*, **2014**, 14, 5329-34	11.5	87
100	In Situ TEM observation of the gasification and growth of carbon nanotubes using iron catalysts. *Nano Research*, **2011**, 4, 767-779	10	86
99	Axially engineered metal-insulator phase transition by graded doping VO2 nanowires. *Journal of the American Chemical Society*, **2013**, 135, 4850-5	16.4	84
98	New-type planar field emission display with superaligned carbon nanotube yarn emitter. *Nano Letters*, **2012**, 12, 2391-6	11.5	81
97	Fast High-Temperature Response of Carbon Nanotube Film and Its Application as an Incandescent Display. *Advanced Materials*, **2009**, 21, 3563-3566	24	77
96	Substrate induced changes in atomically thin 2-dimensional semiconductors: Fundamentals, engineering, and applications. *Applied Physics Reviews*, **2017**, 4, 011301	17.3	76
95	Flexible, All-Inorganic Actuators Based on Vanadium Dioxide and Carbon Nanotube Bimorphs. *Nano Letters*, **2017**, 17, 421-428	11.5	70
94	Field-effect modulation of conductance in VO2 nanobeam transistors with HfO2 as the gate dielectric. *Applied Physics Letters*, **2011**, 99, 062114	3.4	67
93	Powerful, multifunctional torsional micromuscles activated by phase transition. *Advanced Materials*, **2014**, 26, 1746-50	24	65
92	A Lithography-Free and Field-Programmable Photonic Metacanvas. *Advanced Materials*, **2018**, 30, 1703818	24	60
91	A soft non-porous separator and its effectiveness in stabilizing Li metal anodes cycling at 10 mA cm⁻² observed in situ in a capillary cell. *Journal of Materials Chemistry A*, **2017**, 5, 4300-4307	13	58
90	Performance limits of microactuation with vanadium dioxide as a solid engine. *ACS Nano*, **2013**, 7, 2266-72	16.7	55
89	Mechanical properties of two-dimensional materials and heterostructures. *Journal of Materials Research*, **2016**, 31, 832-844	2.5	53
88	Direct identification of metallic and semiconducting single-walled carbon nanotubes in scanning electron microscopy. *Nano Letters*, **2012**, 12, 4095-101	11.5	53
87	Dense electron system from gate-controlled surface metal-insulator transition. *Nano Letters*, **2012**, 12, 6272-7	11.5	48

86	Strain engineering in functional 2-dimensional materials. *Journal of Applied Physics*, **2019**, 125, 082402	2.5	45
85	Pressure-Temperature Phase Diagram of Vanadium Dioxide. *Nano Letters*, **2017**, 17, 2512-2516	11.5	43
84	Chemical and structural stability of 2D layered materials. *2D Materials*, **2019**, 6, 042001	5.9	43
83	Self-assembly and horizontal orientation growth of VO2 nanowires. *Scientific Reports*, **2014**, 4, 5456	4.9	43
82	Mechanically modulated tunneling resistance in monolayer MoS2. *Applied Physics Letters*, **2013**, 103, 183105	3.4	36
81	LaB6 tip-modified multiwalled carbon nanotube as high quality field emission electron source. *Applied Physics Letters*, **2006**, 89, 203112	3.4	36
80	Controlled Termination of the Growth of Vertically Aligned Carbon Nanotube Arrays. *Advanced Materials*, **2007**, 19, 975-978	24	35
79	A polarized infrared thermal detector made from super-aligned multiwalled carbon nanotube films. *Nanotechnology*, **2011**, 22, 025502	3.4	34
78	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	13	33
77	Cycling of a Lithium-Ion Battery with a Silicon Anode Drives Large Mechanical Actuation. *Advanced Materials*, **2016**, 28, 10236-10243	24	33
76	MOFs-derived ZnCo□e core□hell nanocages with remarkable oxygen evolution reaction performance. *Journal of Materials Chemistry A*, **2019**, 7, 17299-17305	13	32
75	Substrate modified thermal stability of mono- and few-layer MoS. *Nanoscale*, **2018**, 10, 3540-3546	7.7	32
74	Bifunctional NbS-Based Asymmetric Heterostructure for Lateral and Vertical Electronic Devices. *ACS Nano*, **2020**, 14, 175-184	16.7	32
73	Electric and Light Dual-Gate Tunable MoS Memtransistor. *ACS Applied Materials & Interfaces*, **2019**, 11, 43344-43350	9.5	31
72	Periodically striped films produced from super-aligned carbon nanotube arrays. *Nanotechnology*, **2009**, 20, 335705	3.4	31
71	A vapor-liquid-solid model for chemical vapor deposition growth of carbon nanotubes. *Journal of Nanoscience and Nanotechnology*, **2007**, 7, 1494-504	1.3	31
70	Elastic Properties and Fracture Behaviors of Biaxially Deformed, Polymorphic MoTe. *Nano Letters*, **2019**, 19, 761-769	11.5	31
69	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	3.8	30

68	Fabrication and processing of high-strength densely packed carbon nanotube yarns without solution processes. *Nanoscale*, **2012**, 4, 3389-93	7.7	28
67	Solution processed lead-free cesium titanium halide perovskites and their structural, thermal and optical characteristics. *Journal of Materials Chemistry C*, **2020**, 8, 1591-1597	7.1	28
66	Direct observation of nanoscale Peltier and Joule effects at metal-insulator domain walls in vanadium dioxide nanobeams. *Nano Letters*, **2014**, 14, 2394-400	11.5	27
65	Phase-transition modulated, high-performance dual-mode photodetectors based on WSe2/VO2 heterojunctions. *Applied Physics Reviews*, **2019**, 6, 041407	17.3	27
64	SWCNT-MoS -SWCNT Vertical Point Heterostructures. *Advanced Materials*, **2017**, 29, 1604469	24	26
63	TiO2-based solar cells sensitized by chemical-bath-deposited few-layer MoS2. *Journal of Power Sources*, **2015**, 275, 943-949	8.9	25
62	Modulating Photoluminescence of Monolayer Molybdenum Disulfide by Metal-Insulator Phase Transition in Active Substrates. *Small*, **2016**, 12, 3976-84	11	24
61	High-purity electrolytic lithium obtained from low-purity sources using solid electrolyte. *Nature Sustainability*, **2020**, 3, 386-390	22.1	23
60	Observation of Charge Generation and Transfer during CVD Growth of Carbon Nanotubes. *Nano Letters*, **2016**, 16, 4102-9	11.5	23
59	Effect of carbon deposits on the reactor wall during the growth of multi-walled carbon nanotube arrays. *Carbon*, **2007**, 45, 2379-2387	10.4	23
58	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	8.3	22
57	Self-Passivation of Defects: Effects of High-Energy Particle Irradiation on the Elastic Modulus of Multilayer Graphene. *Advanced Materials*, **2015**, 27, 6841-7	24	21
56	Photo-driven nanoactuators based on carbon nanocoils and vanadium dioxide bimorphs. *Nanoscale*, **2018**, 10, 11158-11164	7.7	21
55	Sintering behavior of garnet-type Li6.4La3Zr1.4Ta0.6O12 in Li2CO3 atmosphere and its electrochemical property. *International Journal of Applied Ceramic Technology*, **2017**, 14, 921-927	2	20
54	Directly Metering Light Absorption and Heat Transfer in Single Nanowires Using Metal□nsulator Transition in VO2. *Advanced Optical Materials*, **2015**, 3, 336-341	8.1	20
53	Vibrational spectrum renormalization by enforced coupling across the van der Waals gap between MoS2 and WS2 monolayers. *Physical Review B*, **2015**, 92,	3.3	19
52	Anisotropic interfacial friction of inclined multiwall carbon nanotube array surface. *Carbon*, **2012**, 50, 5372-5379	10.4	19
51	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	9.5	18

50	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	5.6	18
49	Watching Dynamic Self-Assembly of Web Buckles in Strained MoS Thin Films. *ACS Nano*, **2019**, 13, 3106-3116	13.9	17
48	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	7.1	16
47	Ultrasensitive, Low-Voltage Operational, and Asymmetric Ionic Sensing Hydrogel for Multipurpose Applications. *Advanced Functional Materials*, **2020**, 30, 1909616	15.6	16
46	Two-dimensional transition-metal dichalcogenides for electrochemical hydrogen evolution reaction. *FlatChem*, **2019**, 18, 100140	5.1	16
45	Langmuir-Blodgett self-assembly of ultrathin graphene quantum dot films with modulated optical properties. *Nanoscale*, **2018**, 10, 19612-19620	7.7	16
44	Probing Evolution of Local Strain at MoS-Metal Boundaries by Surface-Enhanced Raman Scattering. *ACS Applied Materials & Interfaces*, **2018**, 10, 40246-40254	9.5	15
43	Multiple Regulation over Growth Direction, Band Structure, and Dimension of Monolayer WS2 by a Quartz Substrate. *Chemistry of Materials*, **2020**, 32, 2508-2517	9.6	14
42	Bioelectronics-Related 2D Materials Beyond Graphene: Fundamentals, Properties, and Applications. *Advanced Functional Materials*, **2020**, 30, 2003732	15.6	14
41	Stress compensation for arbitrary curvature control in vanadium dioxide phase transition actuators. *Applied Physics Letters*, **2016**, 109, 023504	3.4	14
40	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	3.7	13
39	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	13	13
38	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	7.1	13
37	Interfacing 2D Semiconductors with Functional Oxides: Fundamentals, Properties, and Applications. *Crystals*, **2017**, 7, 265	2.3	13
36	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	3.8	12
35	A Garnet-Type Solid-Electrolyte-Based Molten Lithium-Molybdenum-Iron(II) Chloride Battery with Advanced Reaction Mechanism. *Advanced Materials*, **2020**, 32, e2000960	24	11
34	High-Responsivity Photovoltaic Photodetectors Based on MoTe2/MoSe2 van der Waals Heterojunctions. *Crystals*, **2019**, 9, 315	2.3	11
33	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	1.3	11

32	Ultrathin two-dimensional metals with fully exposed (111) facets. *Chemical Communications*, **2017**, 54, 160-163	5.8	11
31	Grain-Boundary Engineering of Monolayer MoS for Energy-Efficient Lateral Synaptic Devices. *Advanced Materials*, **2021**, 33, e2102435	24	10
30	Continuous, Ultra-lightweight, and Multipurpose Super-aligned Carbon Nanotube Tapes Viable over a Wide Range of Temperatures. *Nano Letters*, **2019**, 19, 6756-6764	11.5	9
29	A flexible, multifunctional, active terahertz modulator with an ultra-low triggering threshold. *Journal of Materials Chemistry C*, **2020**, 8, 10213-10220	7.1	9
28	Crossing Thermal Lubricity and Electronic Effects in Friction: Vanadium Dioxide under the Metal□Insulator Transition. *Advanced Materials Interfaces*, **2016**, 3, 1500388	4.6	9
27	Direct laser patterning of two-dimensional lateral transition metal disulfide-oxide-disulfide heterostructures for ultrasensitive sensors. *Nano Research*, **2020**, 13, 2035-2043	10	8
26	Optically Induced Phase Change for Magnetoresistance Modulation. *Advanced Quantum Technologies*, **2020**, 3, 1900104	4.3	8
25	Enhanced photoresponse of TiO2/MoS2 heterostructure phototransistors by the coupling of interface charge transfer and photogating. *Nano Research*, **2021**, 14, 982-991	10	8
24	Evolution of local strain in Ag-deposited monolayer MoS modulated by interface interactions. *Nanoscale*, **2019**, 11, 22432-22439	7.7	7
23	Three Dimensional Sculpturing of Vertical Nanowire Arrays by Conventional Photolithography. *Scientific Reports*, **2016**, 6, 18886	4.9	7
22	Robust photoluminescence energy of MoS2/graphene heterostructure against electron irradiation. *Science China Materials*, **2018**, 61, 1351-1359	7.1	6
21	A specially designed Li□H2O2 semi-fuel cell: A potential choice for electric vehicle propulsion. *RSC Advances*, **2014**, 4, 18894	3.7	6
20	Modulation of the resistive switching of BiFO3 thin films through electrical stressing. *Journal Physics D: Applied Physics*, **2020**, 53, 115301	3	6
19	Recent advances for phase-transition materials for actuators. *Journal of Applied Physics*, **2020**, 128, 101101	2.5	6
18	Ultrafast, Kinetically Limited, Ambient Synthesis of Vanadium Dioxides through Laser Direct Writing on Ultrathin Chalcogenide Matrix. *ACS Nano*, **2021**, 15, 10502-10513	16.7	6
17	Few-Layer MoS2 Nanosheet/Carbon Nanotube Composite Films for Long-Lifetime Lithium Storage and Hydrogen Generation. *ACS Applied Nano Materials*, **2021**, 4, 4754-4762	5.6	6
16	Wafer-scale freestanding vanadium dioxide film. *Science Advances*, **2021**, 7, eabk3438	14.3	6
15	A new opportunity for the emerging tellurium semiconductor: making resistive switching devices. *Nature Communications*, **2021**, 12, 6081	17.4	5

14	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	2.2	5
13	Synthesis, properties, and applications of large-scale two-dimensional materials by polymer-assisted deposition. *Journal of Semiconductors*, **2019**, 40, 061003	2.3	4
12	Free-standing hybrid films comprising of ultra-dispersed titania nanocrystals and hierarchical conductive network for excellent high rate performance of lithium storage. *Nano Research*, **2020**, 14, 2301	10	3
11	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	2.9	3
10	Reconfigurable Photonic Platforms: A Lithography-Free and Field-Programmable Photonic Metacanvas (Adv. Mater. 5/2018). *Advanced Materials*, **2018**, 30, 1870034	24	3
9	High-order ALE method for the Navier–Stokes equations on a moving hybrid unstructured mesh using flux reconstruction method. *International Journal of Computational Fluid Dynamics*, **2013**, 27, 251-267	1.2	3
8	Role of the lattice in the light-induced insulator-to-metal transition in vanadium dioxide. *Physical Review Research*, **2020**, 2,	3.9	3
7	Magnetoresistance oscillations in topological insulator Bi2Te3 nanoscale antidot arrays. *Nanotechnology*, **2015**, 26, 265301	3.4	2
6	Phase-Change Materials for Intelligent Temperature Regulation. *Materials Today Energy*, **2021**, 100888	7	2
5	Ionic Sensing Hydrogels: Ultrasensitive, Low-Voltage Operational, and Asymmetric Ionic Sensing Hydrogel for Multipurpose Applications (Adv. Funct. Mater. 12/2020). *Advanced Functional Materials*, **2020**, 30, 2070080	15.6	1
4	Reconfigurable Carbon Nanotube Barristor. *Advanced Functional Materials*,2107454	15.6	1
3	Solid Electrolytes: A Garnet-Type Solid-Electrolyte-Based Molten Lithium–Molybdenum–Iron(II) Chloride Battery with Advanced Reaction Mechanism (Adv. Mater. 32/2020). *Advanced Materials*, **2020**, 32, 2070242	24	1
2	Two-Dimensional Lateral Heterostructures Made by Selective Reaction on a Patterned Monolayer MoS Matrix. *ACS Applied Materials & Interfaces*, **2021**, 13, 26143-26151	9.5	1
1	Grain-Boundary Engineering of Monolayer MoS2 for Energy-Efficient Lateral Synaptic Devices (Adv. Mater. 32/2021). *Advanced Materials*, **2021**, 33, 2170251	24	