

# Van der Waals contacts between three-dimensional metals and semiconductors

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Citation Report

#	ARTICLE	IF	CITATIONS
3	Synergistic additive-mediated CVD growth and chemical modification of 2D materials. <i>Chemical Society Reviews</i> , 2019, 48, 4639-4654.	18.7	108
4	Enhancing Photoluminescence and Mobilities in WS <sub>2</sub> Monolayers with Oleic Acid Ligands. <i>Nano Letters</i> , 2019, 19, 6299-6307.	4.5	80
5	MoS <sub>2</sub> dual-gate transistors with electrostatically doped contacts. <i>Nano Research</i> , 2019, 12, 2515-2519.	5.8	21
6	Membraneless reproducible MoS <sub>2</sub> field-effect transistor biosensor for high sensitive and selective detection of FGF21. <i>Science China Materials</i> , 2019, 62, 1479-1487.	3.5	16
7	Recent Advances in Interface Engineering of Transition-Metal Dichalcogenides with Organic Molecules and Polymers. <i>ACS Nano</i> , 2019, 13, 9713-9734.	7.3	72
8	Van der Waals Heterostructures for High-Performance Device Applications: Challenges and Opportunities. <i>Advanced Materials</i> , 2020, 32, e1903800.	11.1	304
9	Atomic mechanism of strong interactions at the graphene/sapphire interface. <i>Nature Communications</i> , 2019, 10, 5013.	5.8	31
10	Monolayer MoS <sub>2</sub> growth at the Au/SiO <sub>2</sub> interface. <i>Nanoscale</i> , 2019, 11, 19700-19704.	2.8	7
11	Utilizing a NaOH Promoter to Achieve Large Single-Domain Monolayer WS <sub>2</sub> Films via Modified Chemical Vapor Deposition. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 35238-35246.	4.0	19
12	Production of SnS <sub>2</sub> Nanostructure as Improved Light-Assisted Electrochemical Water Splitting. <i>Nanomaterials</i> , 2019, 9, 1244.	1.9	16
13	One-Dimensional Edge Contacts to a Monolayer Semiconductor. <i>Nano Letters</i> , 2019, 19, 6914-6923.	4.5	61
14	Metallic contact induced van der Waals gap in a MoS <sub>2</sub> FET. <i>Nanoscale</i> , 2019, 11, 18246-18254.	2.8	13
15	Scalable Production of Two-Dimensional Metallic Transition Metal Dichalcogenide Nanosheet Powders Using NaCl Templates toward Electrocatalytic Applications. <i>Journal of the American Chemical Society</i> , 2019, 141, 18694-18703.	6.6	56
16	Influence of barrier inhomogeneities on transport properties of Pt/MoS <sub>2</sub> Schottky barrier junction. <i>Journal of Alloys and Compounds</i> , 2019, 797, 582-588.	2.8	15
17	Environmentally Controlled Charge Carrier Injection Mechanisms of Metal/WS <sub>2</sub> Junctions. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 2578-2584.	2.1	10
18	Economic mechanism of the machine-tractor park updating in the Samara region. <i>IOP Conference Series: Earth and Environmental Science</i> , 2019, 403, 012073.	0.2	15
19	Flat Band and Hole-induced Ferromagnetism in a Novel Carbon Monolayer. <i>Scientific Reports</i> , 2019, 9, 20116.	1.6	19
20	2D Layered Materials: Synthesis, Nonlinear Optical Properties, and Device Applications. <i>Laser and Photonics Reviews</i> , 2019, 13, 1800327.	4.4	353

#	ARTICLE	IF	CITATIONS
21	Probing Charge Transport Difference in Parallel and Vertical Layered Electronics with Thin Graphite Source/Drain Contacts. <i>Scientific Reports</i> , 2019, 9, 20087.	1.6	1
22	Some new mesoscopic crossover length scales concerning the Hamaker constant. <i>Science China Technological Sciences</i> , 2019, 62, 2310-2312.	2.0	6
23	NbS <sub>2</sub> : A Promising <i>p</i> -Type Ohmic Contact for Two-Dimensional Materials. <i>Physical Review Applied</i> , 2019, 12, .	1.5	36
24	A new metal transfer process for van der Waals contacts to vertical Schottky-junction transition metal dichalcogenide photovoltaics. <i>Science Advances</i> , 2019, 5, eaax6061.	4.7	74
25	Engineering Field Effect Transistors with 2D Semiconducting Channels: Status and Prospects. <i>Advanced Functional Materials</i> , 2020, 30, 1901971.	7.8	58
26	High rectification ratio metal-insulator-semiconductor tunnel diode based on single-layer MoS <sub>2</sub> . <i>Nanotechnology</i> , 2020, 31, 075202.	1.3	6
27	Au-InSe van der Waals Schottky junctions with ultralow reverse current and high photosensitivity. <i>Nanoscale</i> , 2020, 12, 4094-4100.	2.8	31
28	Interfacial charge modulation: carbon quantum dot implanted carbon nitride double-deck nanoframes for robust visible-light photocatalytic tetracycline degradation. <i>Nanoscale</i> , 2020, 12, 3135-3145.	2.8	45
29	Defect-Assisted Contact Property Enhancement in a Molybdenum Disulfide Monolayer. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 4129-4134.	4.0	15
30	Ultrashort Vertical-Channel van der Waals Semiconductor Transistors. <i>Advanced Science</i> , 2020, 7, 1902964.	5.6	24
31	Clean Interface Contact Using a ZnO Interlayer for Low-Contact-Resistance MoS <sub>2</sub> Transistors. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 5031-5039.	4.0	50
32	Bifunctional NbS <sub>2</sub> -Based Asymmetric Heterostructure for Lateral and Vertical Electronic Devices. <i>ACS Nano</i> , 2020, 14, 175-184.	7.3	51
33	High performance complementary WS <sub>2</sub> devices with hybrid Gr/Ni contacts. <i>Nanoscale</i> , 2020, 12, 21280-21290.	2.8	27
34	Vertical Integration of 2D Building Blocks for All-2D Electronics. <i>Advanced Electronic Materials</i> , 2020, 6, 2000550.	2.6	20
35	Improved Current Density and Contact Resistance in Bilayer MoSe <sub>2</sub> Field Effect Transistors by AlO <sub>x</sub> Capping. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 36355-36361.	4.0	31
36	Catalytically mediated epitaxy of 3D semiconductors on van der Waals substrates. <i>Applied Physics Reviews</i> , 2020, 7, .	5.5	15
37	Active metasurfaces for manipulatable terahertz technology. <i>Chinese Physics B</i> , 2020, 29, 094202.	0.7	11
38	Graphene-based vertical thin film transistors. <i>Science China Information Sciences</i> , 2020, 63, 1.	2.7	24

#	ARTICLE	IF	CITATIONS
39	Contact engineering for two-dimensional semiconductors. <i>Journal of Semiconductors</i> , 2020, 41, 071901.	2.0	19
40	WS <sub>2</sub> Nanotubes: Electrical Conduction and Field Emission Under Electron Irradiation and Mechanical Stress. <i>Small</i> , 2020, 16, e2002880.	5.2	42
41	Limiting Damage to 2D Materials during Focused Ion Beam Processing. <i>Physica Status Solidi (B): Basic Research</i> , 2020, 257, 2000318.	0.7	4
42	Origin of Weaker Fermi Level Pinning and Localized Interface States at Metal Silicide Schottky Barriers. <i>Journal of Physical Chemistry C</i> , 2020, 124, 19698-19703.	1.5	11
43	Hydrogen Plasma Exposure of Monolayer MoS <sub>2</sub> Field-Effect Transistors and Prevention of Desulfurization by Monolayer Graphene. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 37305-37312.	4.0	8
44	Towards Scalable Fabrications and Applications of 2D Layered Material-based Vertical and Lateral Heterostructures. <i>Chemical Research in Chinese Universities</i> , 2020, 36, 525-550.	1.3	6
45	Intercalation and hybrid heterostructure integration of two-dimensional atomic crystals with functional organic semiconductor molecules. <i>Nano Research</i> , 2020, 13, 2917-2924.	5.8	11
47	Dissipative Soliton Generation From Yb-Doped Fiber Laser Modulated by Mechanically Exfoliated NbSe <sub>2</sub> . <i>Frontiers in Physics</i> , 2020, 8, .	1.0	8
48	Progress and Prospects in Transition-Metal Dichalcogenide Research Beyond 2D. <i>Chemical Reviews</i> , 2020, 120, 12563-12591.	23.0	163
49	Highly conductive nanometer-thick gold films grown on molybdenum disulfide surfaces for interconnect applications. <i>Scientific Reports</i> , 2020, 10, 14463.	1.6	8
50	Large-scale flexible and transparent electronics based on monolayer molybdenum disulfide field-effect transistors. <i>Nature Electronics</i> , 2020, 3, 711-717.	13.1	255
51	Nonthermal Plasma-Enhanced Chemical Vapor Deposition of Two-Dimensional Molybdenum Disulfide. <i>ACS Omega</i> , 2020, 5, 21853-21861.	1.6	11
52	Combinatorial Large-Area MoS <sub>2</sub> /Anatase/TiO <sub>2</sub> Interface: A Pathway to Emergent Optical and Optoelectronic Functionalities. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 44345-44359.	4.0	10
53	Strain-Engineering of Contact Energy Barriers and Photoresponse Behaviors in Monolayer MoS <sub>2</sub> Flexible Devices. <i>Advanced Functional Materials</i> , 2020, 30, 2002023.	7.8	59
54	Large-Scale Vertical 1Tâ€²/2H MoTe <sub>2</sub> Nanosheet-Based Heterostructures for Low Contact Resistance Transistors. <i>ACS Applied Nano Materials</i> , 2020, 3, 10411-10417.	2.4	19
55	Strong Catalyst-Support Interactions in Electrochemical Oxygen Evolution on Ni-Fe Layered Double Hydroxide. <i>ACS Energy Letters</i> , 2020, 5, 3185-3194.	8.8	44
56	High-Throughput Growth of Wafer-Scale Monolayer Transition Metal Dichalcogenide via Vertical Ostwald Ripening. <i>Advanced Materials</i> , 2020, 32, e2003542.	11.1	69
57	Ledge-directed epitaxy of continuously self-aligned single-crystalline nanoribbons of transition metal dichalcogenides. <i>Nature Materials</i> , 2020, 19, 1300-1306.	13.3	104



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76	Wafer-scale production of patterned transition metal ditelluride layers for two-dimensional metal-semiconductor contacts at the Schottky-Mott limit. <i>Nature Electronics</i> , 2020, 3, 207-215.	13.1	91
77	Epitaxial growth of metal-semiconductor van der Waals heterostructures NbS <sub>2</sub> /MoS <sub>2</sub> with enhanced performance of transistors and photodetectors. <i>Science China Materials</i> , 2020, 63, 1548-1559.	3.5	40
78	Ultrafast and Sensitive Self-Powered Photodetector Featuring Self-Limited Depletion Region and Fully Depleted Channel with van der Waals Contacts. <i>ACS Nano</i> , 2020, 14, 9098-9106.	7.3	120
79	Double-Gate MoS <sub>2</sub> Field-Effect Transistor with a Multilayer Graphene Floating Gate: A Versatile Device for Logic, Memory, and Synaptic Applications. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 33926-33933.	4.0	41
80	Contact and injection engineering for low SS reconfigurable FETs and high gain complementary inverters. <i>Science Bulletin</i> , 2020, 65, 2007-2013.	4.3	13
81	Colloidal MoS <sub>2</sub> van der Waals Template for Growing Highly Uniform Nanomaterials. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 35716-35724.	4.0	3
82	Full-color active-matrix organic light-emitting diode display on human skin based on a large-area MoS <sub>2</sub> backplane. <i>Science Advances</i> , 2020, 6, eabb5898.	4.7	91
83	Low-Resistant Electrical and Robust Mechanical Contacts of Self-Attachable Flexible Transparent Electrodes with Patternable Circuits. <i>Advanced Functional Materials</i> , 2020, 30, 2000458.	7.8	28
84	Van der Waals interfacial reconstruction in monolayer transition-metal dichalcogenides and gold heterojunctions. <i>Nature Communications</i> , 2020, 11, 1011.	5.8	47
85	Interface-mediated noble metal deposition on transition metal dichalcogenide nanostructures. <i>Nature Chemistry</i> , 2020, 12, 284-293.	6.6	73
86	Van der Waals Epitaxy of Large-Area and Single-Crystalline Gold Films on MoS <sub>2</sub> for Low-Contact-Resistance 2D-3D Interfaces. <i>ACS Applied Nano Materials</i> , 2020, 3, 2997-3003.	2.4	8
87	Solution-Based Synthesis of Few-Layer WS <sub>2</sub> Large Area Continuous Films for Electronic Applications. <i>Scientific Reports</i> , 2020, 10, 1696.	1.6	26
88	van der Waals Integrated Devices Based on Nanomembranes of 3D Materials. <i>Nano Letters</i> , 2020, 20, 1410-1416.	4.5	19
89	Interface engineering of two-dimensional transition metal dichalcogenides towards next-generation electronic devices: recent advances and challenges. <i>Nanoscale Horizons</i> , 2020, 5, 787-807.	4.1	43
90	Spatially controlled lateral heterostructures of graphene and transition metal dichalcogenides toward atomically thin and multi-functional electronics. <i>Nanoscale</i> , 2020, 12, 5286-5292.	2.8	8
91	Preparation of benzoxazine-based N-doped mesoporous carbon material and its electrochemical behaviour as supercapacitor. <i>Journal of Electroanalytical Chemistry</i> , 2020, 868, 114196.	1.9	16
92	Programmable Synapse-Like MoS <sub>2</sub> Field-Effect Transistors Phase-Engineered by Dynamic Lithium Ion Modulation. <i>Advanced Electronic Materials</i> , 2020, 6, 1901410.	2.6	13
93	Functional hetero-interfaces in atomically thin materials. <i>Materials Today</i> , 2020, 37, 74-92.	8.3	21

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94	Epitaxial Growth of Centimeter-Scale Single-Crystal MoS <sub>2</sub> Monolayer on Au(111). ACS Nano, 2020, 14, 5036-5045.	7.3	211
95	Transition metal ditellurides make for better 2D contacts. Nature Electronics, 2020, 3, 187-188.	13.1	7
96	Laser annealing towards high-performance monolayer MoS <sub>2</sub> and WSe <sub>2</sub> field effect transistors. Nanotechnology, 2020, 31, 30LT02.	1.3	6
97	Conductive Atomic Force Microscopy of Semiconducting Transition Metal Dichalcogenides and Heterostructures. Nanomaterials, 2020, 10, 803.	1.9	34
98	Tungsten Diselenide Top-gate Transistors with Multilayer Antimonene Electrodes: Gate Stacks and Epitaxially Grown 2D Material Heterostructures. Scientific Reports, 2020, 10, 5967.	1.6	4
99	Customizing coaxial stacking VS <sub>2</sub> nanosheets for dual-band microwave absorption with superior performance in the C- and K <sub>u</sub> -bands. Journal of Materials Chemistry C, 2020, 8, 5923-5933.	2.7	86
100	Scalable preparation of water-soluble ink of few-layered WSe <sub>2</sub> nanosheets for large-area electronics*. Chinese Physics B, 2020, 29, 066802.	0.7	3
101	Correlating the electronic structures of metallic/semiconducting MoTe <sub>2</sub> interface to its atomic structures. National Science Review, 2021, 8, nwaa087.	4.6	5
102	Fast growth of large single-crystalline WS <sub>2</sub> monolayers via chemical vapor deposition. Nano Research, 2021, 14, 1659-1662.	5.8	14
103	2D WS <sub>2</sub> : From Vapor Phase Synthesis to Device Applications. Advanced Electronic Materials, 2021, 7, 2000688.	2.6	63
104	A novel contact engineering method for transistors based on two-dimensional materials. Journal of Materials Science and Technology, 2021, 69, 15-19.	5.6	10
105	High open-circuit voltage in transition metal dichalcogenide solar cells. Nano Energy, 2021, 79, 105427.	8.2	31
106	Recent progress in the development of backplane thin film transistors for information displays. Journal of Information Display, 2021, 22, 1-11.	2.1	60
107	Structure, Preparation, and Applications of 2D Material-Based Metal-Semiconductor Heterostructures. Small Structures, 2021, 2, 2000093.	6.9	71
108	Ambipolar 2D Semiconductors and Emerging Device Applications. Small Methods, 2021, 5, e2000837.	4.6	39
109	Recent progress and challenges on two-dimensional material photodetectors from the perspective of advanced characterization technologies. Nano Research, 2021, 14, 1840-1862.	5.8	36
110	Bi <sub>2</sub> O <sub>2</sub> Se:Bi <sub>2</sub> O <sub>5</sub> Se High- $\kappa$ Stack as a 2D Analog of Si:SiO <sub>2</sub> : A First-Principles Study. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2000465.	1.2	1
111	Weak Distance Dependence of Hot-Electron-Transfer Rates at the Interface between Monolayer MoS <sub>2</sub> and Gold. ACS Nano, 2021, 15, 819-828.	7.3	27

#	ARTICLE	IF	CITATIONS
112	Shallowing interfacial carrier trap in transition metal dichalcogenide heterostructures with interlayer hybridization. <i>Nano Research</i> , 2021, 14, 1390-1396.	5.8	9
113	Screening fermi-level pinning effect through van der waals contacts to monolayer MoS <sub>2</sub> . <i>Materials Today Physics</i> , 2021, 16, 100290.	2.9	36
114	Ohmic Contact Engineering for Two-Dimensional Materials. <i>Cell Reports Physical Science</i> , 2021, 2, 100298.	2.8	81
115	Fermi-level depinning of 2D transition metal dichalcogenide transistors. <i>Journal of Materials Chemistry C</i> , 2021, 9, 11407-11427.	2.7	49
116	Achieving Low Resistance Ohmic Contacts to Transition Metal Dichalcogenides (TMDCs). , 2021, , 185-196.		0
117	A wafer-scale synthesis of monolayer MoS <sub>2</sub> and their field-effect transistors toward practical applications. <i>Nanoscale Advances</i> , 2021, 3, 2117-2138.	2.2	31
118	Chemical vapour deposition. <i>Nature Reviews Methods Primers</i> , 2021, 1, .	11.8	244
119	Controlling phase transition in WSe <sub>2</sub> towards ideal n-type transistor. <i>Nano Research</i> , 2021, 14, 2703-2710.	5.8	13
120	High-Performance WSe <sub>2</sub> , n-Type Field-Effect Transistors Enabled by InO <sub>2</sub> ,“ Damage-Free Doping. <i>IEEE Electron Device Letters</i> , 2021, 42, 1081-1084.	2.2	4
121	Phenomenological Model of Gate-Dependent Kink in I-V Characteristics of MoS <sub>2</sub> Double-Gate FETs. <i>IEEE Journal of the Electron Devices Society</i> , 2021, 9, 441-446.	1.2	1
122	Wafer-scale single crystals: crystal growth mechanisms, fabrication methods, and functional applications. <i>Journal of Materials Chemistry C</i> , 2021, 9, 7829-7851.	2.7	11
123	Two-Dimensional Metallic Vanadium Diteelluride as a High-Performance Electrode Material. <i>ACS Nano</i> , 2021, 15, 1858-1868.	7.3	49
124	Tuning of the Optical Properties of Monolayer Blue Phosphorene. <i>Plasmonics</i> , 2021, 16, 1213-1221.	1.8	4
125	Electrochemically Exfoliated Platinum Dichalcogenide Atomic Layers for High-Performance Air-Stable Infrared Photodetectors. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 8518-8527.	4.0	23
126	A mode-balanced reconfigurable logic gate built in a van der Waals strata. <i>Npj 2D Materials and Applications</i> , 2021, 5, .	3.9	9
127	Tip-Based Cleaning and Smoothing Improves Performance in Monolayer MoS <sub>2</sub> Devices. <i>ACS Omega</i> , 2021, 6, 4013-4021.	1.6	13
128	Emerging Opportunities for 2D Semiconductor/Ferroelectric Transistorâ€”Structure Devices. <i>Advanced Materials</i> , 2021, 33, e2005620.	11.1	76
129	High On-State Current in Chemical Vapor Deposited Monolayer MoS <sub>2</sub> nFETs With Sn Ohmic Contacts. <i>IEEE Electron Device Letters</i> , 2021, 42, 272-275.	2.2	38

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130	Frequency Doubler and Universal Logic Gate Based on Two-Dimensional Transition Metal Dichalcogenide Transistors with Low Power Consumption. ACS Applied Materials & Interfaces, 2021, 13, 7470-7475.	4.0	7
131	Gate-tunable quantum dot formation between localized-resonant states in a few-layer MoS <sub>2</sub> . Nanotechnology, 2021, 32, 195207.	1.3	5
132	WS <sub>2</sub> Nanosheet/Si Heterojunction Diodes for UV-Visible Broadband Photodetection. ACS Applied Nano Materials, 2021, 4, 3241-3251.	2.4	17
133	Impact of device scaling on the electrical properties of MoS <sub>2</sub> field-effect transistors. Scientific Reports, 2021, 11, 6610.	1.6	33
134	Two-step chemical vapor deposition synthesis of NiTe <sub>2</sub> -MoS <sub>2</sub> vertical junctions with improved MoS <sub>2</sub> transistor performance. Nanotechnology, 2021, 32, 235204.	1.3	12
135	Direct Optoelectronic Imaging of 2D Semiconductor-3D Metal Buried Interfaces. ACS Nano, 2021, 15, 5618-5630.	7.3	35
136	High Current Nb-Doped P-Channel MoS <sub>2</sub> Field-Effect Transistor Using Pt Contact. IEEE Electron Device Letters, 2021, 42, 343-346.	2.2	7
137	Engineering Schottky-to-Ohmic contact transition for 2D metal-semiconductor junctions. Applied Physics Letters, 2021, 118, .	1.5	22
138	Giant tunnel electroresistance in ferroelectric tunnel junctions with metal contacts to two-dimensional ferroelectric materials. Physical Review B, 2021, 103, .	1.1	26
139	Fermi-Level Pinning Free High-Performance 2D CMOS Inverter Fabricated with Van Der Waals Bottom Contacts. Advanced Electronic Materials, 2021, 7, 2001212.	2.6	28
140	Promises and prospects of two-dimensional transistors. Nature, 2021, 591, 43-53.	13.7	548
141	Thickness-Dependent Study of High- Performance WS <sub>2</sub> -FETs With Ultrascaled Channel Lengths. IEEE Transactions on Electron Devices, 2021, 68, 2123-2129.	1.6	11
142	Mechanism of MoS <sub>2</sub> Growth on a Au(111) Surface: An Ab Initio Molecular Dynamics Study. Chemistry of Materials, 2021, 33, 3241-3248.	3.2	11
143	Demystifying the role of channel region in two-dimensional transistors. Applied Physics Express, 2021, 14, 044003.	1.1	3
144	Deep learning-enabled prediction of 2D material breakdown. Nanotechnology, 2021, 32, 265203.	1.3	6
145	Seeded 2D epitaxy of large-area single-crystal films of the van der Waals semiconductor 2H MoTe <sub>2</sub> . Science, 2021, 372, 195-200.	6.0	143
146	Electronic, thermoelectric, transport and optical properties of MoSe <sub>2</sub> /BAs van der Waals heterostructures. Results in Physics, 2021, 23, 104010.	2.0	26
147	Tunneling Spectroscopy for Electronic Bands in Multi-Walled Carbon Nanotubes with Van Der Waals Gap. Molecules, 2021, 26, 2128.	1.7	2

#	ARTICLE	IF	CITATIONS
148	Two-dimensional nanomaterials with engineered bandgap: Synthesis, properties, applications. Nano Today, 2021, 37, 101059.	6.2	82
149	Simultaneous measurement of temperature and relative humidity based on a twisted microfiber coated with nanomaterials. Applied Optics, 2021, 60, 3849.	0.9	13
150	Transferred van der Waals metal electrodes for sub-1-nm MoS <sub>2</sub> vertical transistors. Nature Electronics, 2021, 4, 342-347.	13.1	140
151	Dramatic Reduction of Contact Resistance via Ultrathin LiF in Two-Dimensional MoS <sub>2</sub> Field Effect Transistors. Nano Letters, 2021, 21, 3503-3510.	4.5	18
152	The More, the Better—Recent Advances in Construction of 2D Multi-Heterostructures. Advanced Functional Materials, 2021, 31, 2102049.	7.8	27
153	Substrate-controlled dynamics of spin qubits in low dimensional van der Waals materials. Applied Physics Letters, 2021, 118, .	1.5	9
154	Chemical Insights into Interfacial Effects in Inorganic Nanomaterials. Advanced Materials, 2021, 33, e2006159.	11.1	22
155	Single-Crystalline Metallic Films Induced by van der Waals Epitaxy on Black Phosphorus. Chemistry of Materials, 2021, 33, 3593-3601.	3.2	6
156	Applications of Bioinspired Reversible Dry and Wet Adhesives: A Review. Frontiers in Mechanical Engineering, 2021, 7, .	0.8	11
157	A vertical transistor with a sub-1-nm channel. Nature Electronics, 2021, 4, 325-325.	13.1	5
158	Interaction Between Two Ground-State Atoms. International Journal of Theoretical Physics, 2021, 60, 2025-2036.	0.5	0
159	Ultralow contact resistance between semimetal and monolayer semiconductors. Nature, 2021, 593, 211-217.	13.7	579
160	Probing and pushing the limit of emerging electronic materials via van der Waals integration. MRS Bulletin, 2021, 46, 534-546.	1.7	5
161	Understanding the Role of 2D Nature on the Junction Properties in WS <sub>2</sub> Layers; Effect of AFM Tip Induced Loading Force on Spatially Varying Contact. Surfaces and Interfaces, 2021, 24, 101131.	1.5	1
162	One-Dimensional Edge Contacts to Two-Dimensional Transition-Metal Dichalcogenides: Uncovering the Role of Schottky-Barrier Anisotropy in Charge Transport across $S_{Mo_2}$ Metal Interfaces. Physical Review Applied, 2021, 15, .	1.5	33
163	Record-high saturation current in end-bond contacted monolayer MoS <sub>2</sub> transistors. Nano Research, 2022, 15, 475-481.	5.8	24
164	Highly Efficient Experimental Approach to Evaluate Metal to 2D Semiconductor Interfaces in Vertical Diodes with Asymmetric Metal Contacts. ACS Applied Materials & Interfaces, 2021, 13, 27705-27712.	4.0	7
165	Band engineering of large scale graphene/hexagonal boron nitride in-plane heterostructure: Role of the connecting angle. Physica E: Low-Dimensional Systems and Nanostructures, 2021, 131, 114751.	1.3	6

#	ARTICLE	IF	CITATIONS
166	Field-effect at electrical contacts to two-dimensional materials. Nano Research, 2021, 14, 4894-4900.	5.8	11
167	The Photodetectors Based on Lateral Monolayer MoS <sub>2</sub> /WS <sub>2</sub> Heterojunctions. Nanoscale Research Letters, 2021, 16, 123.	3.1	29
168	p-/n-Type modulation of 2D transition metal dichalcogenides for electronic and optoelectronic devices. Nano Research, 2022, 15, 123-144.	5.8	20
169	Sub-Picosecond Nanodiodes for Low-Power Ultrafast Electronics. Advanced Materials, 2021, 33, e2100874.	11.1	6
171	Tuning Schottky Barrier and Contact Type of Metal-Semiconductor in Ti <sub>3</sub> C <sub>2</sub> T <sub>2</sub> /MoS <sub>2</sub> (T = F, O, OH) by Strain: A First-Principles Study. Journal of Physical Chemistry C, 2021, 125, 16200-16210.	1.5	29
172	Analytical measurements of contact resistivity in two-dimensional WSe <sub>2</sub> field-effect transistors. 2D Materials, 2021, 8, 045019.	2.0	9
173	Efficient Ohmic contacts and built-in atomic sublayer protection in MoSi <sub>2</sub> N <sub>4</sub> and WSi <sub>2</sub> N <sub>4</sub> monolayers. Npj 2D Materials and Applications, 2021, 5, .	3.9	98
174	Toward Low-Temperature Solid-Source Synthesis of Monolayer MoS <sub>2</sub> . ACS Applied Materials & Interfaces, 2021, 13, 41866-41874.	4.0	21
175	Universal Patterning for 2D Van der Waals Materials via Direct Optical Lithography. Advanced Functional Materials, 2021, 31, 2105302.	7.8	6
176	Tuning bandstructure of folded MoS <sub>2</sub> through fluid dynamics. Nano Research, 2022, 15, 2734-2740.	5.8	7
177	Modulated electronic and optical properties of bilayer/trilayer Blue Phosphorene/MoX <sub>2</sub> (X=S, Se) van der Waals heterostructures. Surfaces and Interfaces, 2021, 25, 101228.	1.5	5
178	Band Gap Engineering and 14 Electron Superatoms in 2D Superoctahedral Boranes B <sub>4</sub> X <sub>2</sub> (B, N, P, As, Sb). Journal of Physical Chemistry C, 2021, 125, 17280-17290.	1.5	6
179	Dipole-induced Ohmic contacts between monolayer Janus MoSSe and bulk metals. Npj 2D Materials and Applications, 2021, 5, .	3.9	18
180	Gate-Defined Quantum Confinement in CVD 2D WS <sub>2</sub> . Advanced Materials, 2022, 34, e2103907.	11.1	18
181	Indium-contacted van der Waals gap tunneling spectroscopy for van der Waals layered materials. Scientific Reports, 2021, 11, 17790.	1.6	1
182	Low barrier height in a ZnO nanorods/NbSe <sub>2</sub> heterostructure prepared by van der Waals epitaxy. APL Materials, 2021, 9, .	2.2	2
183	Two-dimensional van der Waals thin film transistors as active matrix for spatially resolved pressure sensing. Nano Research, 2021, 14, 3395-3401.	5.8	19
184	Electrode-Induced Self-Healed Monolayer MoS <sub>2</sub> for High Performance Transistors and Phototransistors. Advanced Materials, 2021, 33, e2102091.	11.1	26

#	ARTICLE	IF	CITATIONS
185	Observation of high carrier density, ohmic contact, and metallic conductivity down to 5 K in aluminum-contacted multilayer MoS <sub>2</sub> flakes. Japanese Journal of Applied Physics, 2021, 60, 111001.	0.8	2
186	Molecule-Upgrade van der Waals Contacts for Schottky-Barrier-Free Electronics. Advanced Materials, 2021, 33, e2104935.	11.1	26
187	Performance Limits and Potential of Multilayer Graphene-Tungsten Diselenide Heterostructures. Advanced Electronic Materials, 0, , 2100355.	2.6	2
188	Relative humidity sensor based on U-shaped microfiber interferometer coated with MoS <sub>2</sub> films. Materials Letters, 2021, 301, 130245.	1.3	9
189	Lateral heterostructures of zigzag phosphorene nanoribbons as a platform for high performance 5Ånm transistor. Journal of Physics and Chemistry of Solids, 2021, 157, 110201.	1.9	0
190	Energetic bombardment and defect generation during magnetron-sputter-deposition of metal layers on graphene. Applied Surface Science, 2021, 566, 150661.	3.1	8
191	Flexible hollow TiO <sub>2</sub> @CMS/carbon-fiber van der Waals heterostructures for simulated-solar light photocatalysis and photoelectrocatalysis. Journal of Materials Science and Technology, 2022, 98, 143-150.	5.6	27
192	Origins of genuine Ohmic van der Waals contact between indium and MoS <sub>2</sub> . Npj 2D Materials and Applications, 2021, 5, .	3.9	43
193	Physics of electron emission and injection in two-dimensional materials: Theory and simulation. Informa-Materially, 2021, 3, 502-535.	8.5	66
194	Hidden Vacancy Benefit in Monolayer 2D Semiconductors. Advanced Materials, 2021, 33, e2007051.	11.1	65
195	High performance sub-bandgap photodetection via internal photoemission based on ideal metal/2D-material van der Waals Schottky interface. Nanoscale, 2021, 13, 16448-16456.	2.8	14
196	Thickness-modulated lateral MoS <sub>2</sub> diodes with sub-terahertz cutoff frequency. Nanoscale, 2021, 13, 8940-8947.	2.8	8
197	Layered Semiconducting 2D Materials for Future Transistor Applications. Small Structures, 2021, 2, 2000103.	6.9	85
198	Design and tailoring of two-dimensional Schottky, PN and tunnelling junctions for electronics and optoelectronics. Nanoscale, 2021, 13, 6713-6751.	2.8	30
199	Modulating electron structure of hollow MoS <sub>2</sub> nanoarchitectures with oxygen doping for electrochemical hydrogen evolution. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2020, 601, 124950.	2.3	8
200	An outlook into the flat land of 2D materials beyond graphene: synthesis, properties and device applications. 2D Materials, 2021, 8, 013001.	2.0	32
201	Visualizing the metal- $\text{MoS}_2$ contacts in two-dimensional field-effect transistors with atomic resolution. Physical Review Materials, 2019, 3, .	0.9	25
202	Cold-source paradigm for steep-slope transistors based on van der Waals heterojunctions. Physical Review Research, 2020, 2, .	1.3	13

#	ARTICLE	IF	CITATIONS
203	Sub-1nm EOT WS <sub>2</sub> -FET with I <sub>DS</sub> > 600 <sup>1</sup> / <sub>4A</sub> / <sub>1/4m</sub> at V <sub>DS</sub> =1V and SS < 70mV/dec at L <sub>G</sub> =40nm. , 2020, , .		2
204	Electronic Structure and Stacking Arrangement of Tungsten Disulfide at the Gold Contact. ACS Nano, 2021, 15, 18060-18070.	7.3	6
205	A Critical Outlook for the Pursuit of Lower Contact Resistance in Organic Transistors. Advanced Materials, 2022, 34, e2104075.	11.1	53
206	Status and prospects of Ohmic contacts on two-dimensional semiconductors. Nanotechnology, 2022, 33, 062005.	1.3	5
207	An artificial neural network chip based on two-dimensional semiconductor. Science Bulletin, 2022, 67, 270-277.	4.3	20
208	Visualizing Spatial Evolution of Electron-Correlated Interface in Two-Dimensional Heterostructures. ACS Nano, 2021, 15, 16589-16596.	7.3	15
209	Salt-assisted chemical vapor deposition of two-dimensional transition metal dichalcogenides. IScience, 2021, 24, 103229.	1.9	24
210	Review: Electronic Band Structure and Interface Properties. Springer Theses, 2020, , 13-36.	0.0	0
211	Forbidden Reflection Moiré Patterns in Metal-2D Material Interfaces. Microscopy and Microanalysis, 2020, 26, 860-863.	0.2	0
212	The band shifts in MoS <sub>2</sub> (0001) and WSe <sub>2</sub> (0001) induced by palladium adsorption. Journal of Physics Condensed Matter, 2020, 32, 465001.	0.7	3
213	Origin of phonon-limited mobility in two-dimensional metal dichalcogenides. Journal of Physics Condensed Matter, 2022, 34, 013003.	0.7	13
215	Complementary Two-Dimensional (2-D) FET Technology With MoS <sub>2</sub> /hBN/Graphene Stack. IEEE Electron Device Letters, 2021, 42, 1890-1893.	2.2	4
216	Self-gating enhanced carrier transfer in semiconductor electrocatalyst verified in microdevice. Chinese Chemical Letters, 2022, 33, 3221-3226.	4.8	8
217	High-performance electronics and optoelectronics of monolayer tungsten diselenide full film from pre-seeding strategy. Informa Mater, 2021, 3, 1455-1469.	8.5	32
218	Schottky Contacts Regularized Linear Regression for Signal Inconsistency Circumvent in Resistive Gas Micro-Nanosensors. Small Methods, 2021, 5, e2101194.	4.6	2
219	A fiber-optic ultraviolet sensor based on the evanescent field: Enhanced effects of black phosphorous film. Optical Fiber Technology, 2021, 67, 102747.	1.4	1
220	Van der Waals crystal radio with Pt/MoSe <sub>2</sub> Schottky diode and h-BN capacitor for RF energy harvesting. Nano Energy, 2022, 92, 106771.	8.2	8
221	Epitaxial Growth of Step-Like Cr <sub>2</sub> S <sub>3</sub> Lateral Homojunctions Towards Versatile Conduction Polarities and Enhanced Transistor Performances. Small, 2022, 18, e2105744.	5.2	9

#	ARTICLE	IF	CITATIONS
222	Van der Waals Heterostructure of Hexagonal Boron Nitride with an AlGaN/GaN Epitaxial Wafer for High-Performance Radio Frequency Applications. ACS Applied Materials & Interfaces, 2021, 13, 59440-59449.	4.0	8
223	In-situ Transmission Electron Microscopy Observation of Germanium Growth on Freestanding Graphene: Unfolding Mechanism of 3D Crystal Growth During Van der Waals Epitaxy. Small, 2022, 18, e2101890.	5.2	5
224	Approaching the intrinsic exciton physics limit in two-dimensional semiconductor diodes. Nature, 2021, 599, 404-410.	13.7	57
225	Molecular Approach to Engineer Two-Dimensional Devices for CMOS and beyond-CMOS Applications. Chemical Reviews, 2022, 122, 50-131.	23.0	46
226	Organic dye concentration monitoring through an optical microfiber enabled by multiwalled carbon nanotubes. Journal of the Optical Society of America B: Optical Physics, 2021, 38, F178.	0.9	6
227	Making clean electrical contacts on 2D transition metal dichalcogenides. Nature Reviews Physics, 2022, 4, 101-112.	11.9	91
228	High performance and gate-controlled GeSe/HfS <sub>2</sub> negative differential resistance device. RSC Advances, 2022, 12, 1278-1286.	1.7	9
229	Latest advance on seamless metal-semiconductor contact with ultralow Schottky barrier in 2D-material-based devices. Nano Today, 2022, 42, 101372.	6.2	21
230	Side-Contact Architecture for p/n-Stacked-Nano-Sheet ZrS <sub>2</sub> 2D-FETs Beyond 1-nm Technology Node. , 2021, , .		0
231	Complementary Two-Dimensional (2-D) MoS <sub>2</sub> FET Technology. , 2021, , .		2
232	Tunable Conductance of MoS <sub>2</sub> and WS <sub>2</sub> Quantum Dots by Electron Transfer with Redox-Active Quinone. ACS Applied Materials & Interfaces, 2022, 14, 5750-5761.	4.0	13
233	Soft-lock drawing of super-aligned carbon nanotube bundles for nanometre electrical contacts. Nature Nanotechnology, 2022, 17, 278-284.	15.6	24
234	Anomalously persistent p-type behavior of WSe <sub>2</sub> field-effect transistors by oxidized edge-induced Fermi-level pinning. Journal of Materials Chemistry C, 2022, 10, 846-853.	2.7	5
235	(INVITED) Opto-electronic properties of solution-synthesized MoS <sub>2</sub> metal-semiconductor-metal photodetector. Optical Materials: X, 2022, 13, 100135.	0.3	4
236	Selective hydrogenation improves interface properties of high-k dielectrics on 2D semiconductors. Nano Research, 2022, 15, 4646-4652.	5.8	6
237	Nanospike electrodes and charge nanoribbons: A new design for nanoscale thin-film transistors. Science Advances, 2022, 8, eabm1154.	4.7	10
238	Enhanced Performance of WS <sub>2</sub> Field-Effect Transistor through Mono and Bilayer h-BN Tunneling Contacts. Small, 2022, 18, e2105753.	5.2	22
239	Hole doping effect of MoS <sub>2</sub> via electron capture of He <sup>+</sup> ion irradiation. Scientific Reports, 2021, 11, 23590.	1.6	8

#	ARTICLE	IF	CITATIONS
240	Cotrollable growth of monolayer MoS <sub>2</sub> films and the application in devices. Wuli Xuebao/Acta Physica Sinica, 2022, .	0.2	0
241	Recent progress on van der Waals heterojunctions applied in photocatalysis. Journal of Materials Chemistry A, 2022, 10, 7604-7625.	5.2	32
242	Fermi Level Pinning Dependent 2D Semiconductor Devices: Challenges and Prospects. Advanced Materials, 2022, 34, e2108425.	11.1	80
243	Tunable metal contacts at layered black-arsenic/metal interface forming during metal deposition for device fabrication. Communications Materials, 2022, 3, .	2.9	1
244	Reduced Fermi Level Pinning at Physisorptive Sites of Moire-MoS <sub>2</sub> /Metal Schottky Barriers. ACS Applied Materials & Interfaces, 2022, 14, 11903-11909.	4.0	17
245	Energy Barrier at Indium/Indium Selenide Nanosheet Interfaces: Implications of Metal-to-Insulator Transition for Field-Effect Transistor Modeling. ACS Applied Nano Materials, 2022, 5, 1911-1916.	2.4	2
246	2D Heterostructures for Highly Efficient Photodetectors: From Advanced Synthesis to Characterizations, Mechanisms, and Device Applications. Advanced Photonics Research, 2022, 3, .	1.7	13
247	Challenges and opportunities in 2D heterostructures for electronic and optoelectronic devices. IScience, 2022, 25, 103942.	1.9	38
248	Fluorinated Graphene Contacts and Passivation Layer for MoS <sub>2</sub> Field Effect Transistors. Advanced Electronic Materials, 2022, 8, .	2.6	5
249	Are 2D Interfaces Really Flat?. ACS Nano, 2022, 16, 5316-5324.	7.3	15
250	Facet-Dependent Electrocatalytic Reduction of CO <sub>2</sub> to HCOOH over Pd Nanoparticles. Key Engineering Materials, 0, 915, 115-120.	0.4	0
251	Substrate-Dependent Growth Mode Control of MoS <sub>2</sub> Monolayers: Implications for Hydrogen Evolution and Field-Effect Transistors. ACS Applied Nano Materials, 2022, 5, 4336-4342.	2.4	4
252	Twist Angle-Dependent Interface Thermal Conductance in MoS <sub>2</sub> Bilayers. Journal of Electronic Materials, 2022, 51, 2949-2955.	1.0	2
253	Electronic Tuning in WSe <sub>2</sub> /Au via van der Waals Interface Twisting and Intercalation. ACS Nano, 2022, 16, 6541-6551.	7.3	17
254	Hybridized bands and stacking-dependent band edges in ferromagnetic Fe <sub>3</sub> GeTe <sub>2</sub> /CrGeTe <sub>3</sub> moiré heterobilayer. Scientific Reports, 2022, 12, 5101.	1.6	2
255	All-van der Waals Barrier-Free Contacts for High-Mobility Transistors. Advanced Materials, 2022, 34, e2109521.	11.1	38
256	Reducing Contact Resistance and Boosting Device Performance of Monolayer MoS <sub>2</sub> by In Situ Fe Doping. Advanced Materials, 2022, 34, e2200885.	11.1	34
257	Bridging the gap between atomically thin semiconductors and metal leads. Nature Communications, 2022, 13, 1777.	5.8	17

#	ARTICLE	IF	CITATIONS
258	Facile Damage-free Double Exposure for High-Performance 2D Semiconductor Based Transistors. <i>Materials Today Physics</i> , 2022, , 100678.	2.9	6
259	Interface transition from Ohmic to Schottky contact in Ti <sub>3</sub> X <sub>2</sub> /MoS <sub>2</sub> (X= B, C, N): Insights from first-principles. <i>Surfaces and Interfaces</i> , 2022, 30, 101823.	1.5	4
260	Tune the electronic structure of MoS <sub>2</sub> homojunction for broadband photodetection. <i>Journal of Materials Science and Technology</i> , 2022, 119, 61-68.	5.6	7
261	Sub-200 nm Alloyed Contacts to Synthetic Monolayer MoS <sub>2</sub> . , 2021, , .		19
262	Contact Modulation Using Pulsed Thermal Annealing in 2-Dimensional Semiconductors. , 2021, , .		0
263	A wafer-scale van der Waals dielectric made from an inorganic molecular crystal film. <i>Nature Electronics</i> , 2021, 4, 906-913.	13.1	86
264	Healing of donor defect states in monolayer molybdenum disulfide using oxygen-incorporated chemical vapour deposition. <i>Nature Electronics</i> , 2022, 5, 28-36.	13.1	44
265	Contact Engineering for High-Performance N-Type 2D Semiconductor Transistors. , 2021, , .		8
266	A room-temperature gate-tunable bipolar valley Hall effect in molybdenum disulfide/tungsten diselenide heterostructures. <i>Nature Electronics</i> , 2022, 5, 23-27.	13.1	16
267	Layer-by-Layer Growth of AA-Stacking MoS <sub>2</sub> for Tunable Broadband Phototransistors. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 59154-59163.	4.0	26
268	Gate-Controlled Quantum Dots Based on 2D Materials. <i>Advanced Quantum Technologies</i> , 2022, 5, .	1.8	13
269	Tuning the Electrical Performance of 2D Perovskite Field-Effect Transistors by Forming Organic Semiconductor/Perovskite van der Waals Heterojunctions. <i>Advanced Electronic Materials</i> , 2022, 8, .	2.6	10
270	Growth of Tellurium Nanobelts on h-BN for p-type Transistors with Ultrahigh Hole Mobility. <i>Nano-Micro Letters</i> , 2022, 14, 109.	14.4	31
271	Layer-by-layer epitaxy of multi-layer MoS <sub>2</sub> wafers. <i>National Science Review</i> , 2022, 9, .	4.6	41
272	Interaction- and defect-free van der Waals contacts between metals and two-dimensional semiconductors. <i>Nature Electronics</i> , 2022, 5, 241-247.	13.1	84
273	Edge-Assisted Epitaxy of 2D TaSe <sub>2</sub> â€MoSe <sub>2</sub> Metal-Semiconductor Heterostructures and Application to Schottky Diodes. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	10
274	Graphene charge-injection photodetectors. <i>Nature Electronics</i> , 2022, 5, 281-288.	13.1	70
275	Mass-Produced 2D Nanocomposite-Based Temperature-Independent All-Printed Relative Humidity Sensor. <i>ACS Omega</i> , 2022, 7, 16605-16615.	1.6	7

#	ARTICLE	IF	CITATIONS
276	The Trend of 2D Transistors toward Integrated Circuits: Scaling Down and New Mechanisms. <i>Advanced Materials</i> , 2022, 34, e2201916.	11.1	37
277	Uniform nucleation and epitaxy of bilayer molybdenum disulfide on sapphire. <i>Nature</i> , 2022, 605, 69-75.	13.7	174
278	HgCdTe/black phosphorus van der Waals heterojunction for high-performance polarization-sensitive midwave infrared photodetector. <i>Science Advances</i> , 2022, 8, eabn1811.	4.7	50
279	Review of recent studies on nanoscale electrical junctions and contacts: Quantum tunneling, current crowding, and interface engineering. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2022, 40, 030802.	0.9	8
280	Benchmarking Noise and Dephasing in Emerging Electrical Materials for Quantum Technologies. <i>Advanced Materials</i> , 2023, 35, e2109671.	11.1	9
281	Structural Evolution and Bandgap Modulation of Layered $\text{GeSe}_2$ Single Crystal under High Pressure. <i>Chinese Physics B</i> , , .	0.7	1
282	Ultrafast flash memory with large self-rectifying ratio based on atomically thin $\text{MoS}_2$ -channel transistor. <i>Materials Futures</i> , 2022, 1, 025301.	3.1	12
283	Scalable production of $\text{p-MoS}_2/\text{n-MoS}_2$ heterostructure array and its application for self-powered photodetectors and CMOS inverters. <i>2D Materials</i> , 2022, 9, 035015.	2.0	4
284	Recent Progress in 1D Contacts for 2D Material-Based Devices. <i>Advanced Materials</i> , 2022, 34, e2202408.	11.1	13
285	Direct observation of contact resistivity for monolayer TMD based junctions via PL spectroscopy. <i>Nanoscale</i> , 2022, 14, 8260-8270.	2.8	2
286	Circuit-Level Memory Technologies and Applications based on 2D Materials. <i>Advanced Materials</i> , 2022, 34, .	11.1	17
287	Graphene-assisted metal transfer printing for wafer-scale integration of metal electrodes and two-dimensional materials. <i>Nature Electronics</i> , 2022, 5, 275-280.	13.1	61
288	Electrochemical Construction of Edge-Contacted Metal-Semiconductor Junctions with Low Contact Barrier. <i>Advanced Materials</i> , 2022, 34, .	11.1	5
289	Realization of Ultra-Scaled $\text{MoS}_2$ Vertical Diodes via Double-Side Electrodes Lamination. <i>Nano Letters</i> , 2022, 22, 4429-4436.	4.5	16
290	Two-dimensional $\text{M}_4\text{N}_4\text{Si}$ monolayers and van der Waals heterostructures: Promising spintronic properties and band alignments. <i>Physical Review Materials</i> , 2022, 6, .	0.9	15
291	Accelerated Mining of 2D Van der Waals Heterojunctions by Integrating Supervised and Unsupervised Learning. <i>Chemistry of Materials</i> , 2022, 34, 5571-5583.	3.2	7
292	Electrical contact properties between Yb and few-layer $\text{WS}_2$ . <i>Applied Physics Letters</i> , 2022, 120, 253505.	1.5	2
293	Impact of Trap Profile on the Characteristics of 2-D $\text{MoS}_2$ Memtransistors: A Simulation Study. <i>IEEE Transactions on Electron Devices</i> , 2022, 69, 4750-4756.	1.6	0

#	ARTICLE	IF	CITATIONS
294	Impact of Macromolecules on the Stability of MoS <sub>2</sub> Nanosheets and Understanding the Fate and Behavior Simulated in a Wastewater Treatment Plant Under Aerobic Conditions. International Journal of Environmental Research, 2022, 16, .	1.1	0
295	Improving carrier mobility in two-dimensional semiconductors with rippled materials. Nature Electronics, 2022, 5, 489-496.	13.1	52
296	On-Chip Integrated High Gain Complementary MoS <sub>2</sub> Inverter Circuit with Exceptional High Hole Current Pa-Channel Field-Effect Transistors. Advanced Electronic Materials, 2022, 8, .	2.6	3
297	A nanogapped hysteresis-free field-effect transistor. Applied Physics Letters, 2022, 121, 023503.	1.5	0
298	Contact optimisation strategy for wafer-scale field-effect transistors based on two-dimensional semiconductors. Journal of Materials Science and Technology, 2023, 133, 230-237.	5.6	5
299	Longitudinal and latitudinal split-gate field-effect transistors for NAND and NOR logic circuit applications. Npj 2D Materials and Applications, 2022, 6, .	3.9	3
300	Ultrafast interfacial carrier dynamics and persistent topological surface states of Bi <sub>2</sub> Se <sub>3</sub> in heterojunctions with VSe <sub>2</sub> . Communications Physics, 2022, 5, .	2.0	8
301	Esaki Diode Behavior in Highly Uniform MoS <sub>2</sub> /Silicon Carbide Heterojunctions. Advanced Materials Interfaces, 2022, 9, .	1.9	14
302	Performance Upper Limit of Sub-10 nm Monolayer MoS <sub>2</sub> Transistors with MoS <sub>2</sub> -Mo Electrodes. Journal of Physical Chemistry C, 2022, 126, 12100-12112.	1.5	3
303	Metal-to-semiconductor transitions in constituent-tunable layered two-dimensional Nb W <sub>1</sub> -Se <sub>2</sub> based on first principles calculations. Physica E: Low-Dimensional Systems and Nanostructures, 2022, 144, 115388.	1.3	2
304	Mechanisms of Quasi van der Waals Epitaxy of Three-Dimensional Metallic Nanoislands on Suspended Two-Dimensional Materials. Nano Letters, 2022, 22, 5849-5858.	4.5	15
305	Tuning Positive and Negative Transconductance in Multilayer $\text{MoS}_2$ with Indium Contacts. Physical Review Applied, 2022, 18, .	1.5	1
306	Integrated Urinalysis Devices Based on Interface-Engineered Field-Effect Transistor Biosensors Incorporated With Electronic Circuits. Advanced Materials, 2022, 34, .	11.1	32
307	How to report and benchmark emerging field-effect transistors. Nature Electronics, 2022, 5, 416-423.	13.1	57
308	P-type electrical contacts for 2D transition-metal dichalcogenides. Nature, 2022, 610, 61-66.	13.7	90
309	Intergranular Diffusion-Assisted Liquid-Phase Chemical Vapor Deposition for Wafer-Scale Synthesis of Patternable 2D Semiconductors. Advanced Functional Materials, 2022, 32, .	7.8	3
310	Bi-layer tungsten diselenide transistors with on-state currents exceeding 1.5 mA/mm. Nature Electronics, 2022, 5, 497-504.	13.1	51
311	2D semiconductors for specific electronic applications: from device to system. Npj 2D Materials and Applications, 2022, 6, .	3.9	53

#	ARTICLE	IF	CITATIONS
312	Metal contacts with Moire interfaces on WSe <sub>2</sub> for ambipolar applications. Applied Physics Letters, 2022, 121, .	1.5	7
313	Large-Scale Ultrafast Strain Engineering of CVD-Grown Two-Dimensional Materials on Strain Self-Limited Deformable Nanostructures toward Enhanced Field-Effect Transistors. Nano Letters, 2022, 22, 7734-7741.	4.5	10
315	Controlled p-Type Doping of MoS <sub>2</sub> Monolayer by Copper Chloride. Nanomaterials, 2022, 12, 2893.	1.9	9
316	Coulomb Screening and Scattering in Atomically Thin Transistors across Dimensional Crossover. Nano Letters, 2022, 22, 6671-6677.	4.5	6
317	MoS <sub>2</sub> Transistor with Weak Fermi Level Pinning via MXene Contacts. Advanced Functional Materials, 2022, 32, .	7.8	13
318	A U-shaped microfiber interferometer coated with MoS <sub>2</sub> film for simultaneous measuring relative humidity and temperature. Optical Fiber Technology, 2022, 73, 103009.	1.4	2
319	Photonic synapses with ultralow energy consumption for artificial visual perception and brain storage. Opto-Electronic Advances, 2022, 5, 210069-210069.	6.4	15
320	N, P co-doping triggered phase transition of MoS <sub>2</sub> with enlarged interlayer spacing for efficient hydrogen evolution. New Journal of Chemistry, 2022, 46, 15693-15700.	1.4	5
321	Waveguide Integrated MoTe <sub>2</sub> Photodetector with High speed and energy efficient. , 2022, , .		4
322	Improved electrical properties of encapsulated MoTe <sub>2</sub> with 1Tâ€² edge contacts via laser irradiation. Materials Science in Semiconductor Processing, 2023, 153, 107133.	1.9	1
323	Co-Operative Influence of O <sub>2</sub> and H <sub>2</sub> O in the Degradation of Layered Black Arsenic. Journal of Physical Chemistry C, 2022, 126, 15222-15228.	1.5	1
324	Van der Waals Epitaxial Trilayer MoS <sub>2</sub> Crystals for Highâ€³speed Electronics. Advanced Functional Materials, 2022, 32, .	7.8	6
325	Exploring the photoelectric properties of 2D MoS <sub>2</sub> thin films grown by CVD. Journal of Materials Research, 2022, 37, 3470-3480.	1.2	1
326	Statistical Assessment of High-Performance Scaled Double-Gate Transistors from Monolayer WS <sub>2</sub> . ACS Nano, 2022, 16, 14942-14950.	7.3	8
327	Two-dimensional material templates for van der Waals epitaxy, remote epitaxy, and intercalation growth. Applied Physics Reviews, 2022, 9, .	5.5	9
328	Edge-Contact MoS <sub>2</sub> Transistors Fabricated Using Thermal Scanning Probe Lithography. ACS Applied Materials & Interfaces, 2022, 14, 42328-42336.	4.0	5
329	Lowering Contact Resistances of Two-Dimensional Semiconductors by Memristive Forming. Nano Letters, 2022, 22, 7094-7103.	4.5	4
330	Challenges of Waferâ€³scale Integration of 2D Semiconductors for Highâ€³Performance Transistor Circuits. Advanced Materials, 2022, 34, .	11.1	28

#	ARTICLE	IF	CITATIONS
331	Low-resistance metal contacts to encapsulated semiconductor monolayers with long transfer length. <i>Nature Electronics</i> , 2022, 5, 579-585.	13.1	20
332	High Conductivity Update Linearity MoS <sub>2</sub> Memtransistors Array Based on Lithium Ion Modulation. <i>Advanced Materials Interfaces</i> , 0, , 2201775.	1.9	0
333	Two dimensional semiconducting materials for ultimately scaled transistors. <i>IScience</i> , 2022, 25, 105160.	1.9	11
334	Low-Power Logic-In-Memory Complementary Inverter Based on p-WSe <sub>2</sub> and n-WSe <sub>2</sub> . <i>Advanced Electronic Materials</i> , 2022, 8, .	2.6	4
335	Transistors and logic circuits enabled by 2D transition metal dichalcogenides: a state-of-the-art survey. <i>Journal of Materials Chemistry C</i> , 2022, 10, 17002-17026.	2.7	6
336	Schottky barrier heights and mechanism of charge transfer at metal-Bi <sub>2</sub> OS <sub>2</sub> interfaces. <i>Science China Materials</i> , 2023, 66, 811-818.	3.5	6
337	Origin of contact polarity at metal-2D transition metal dichalcogenide interfaces. <i>Npj 2D Materials and Applications</i> , 2022, 6, .	3.9	2
338	Self-Forming p-n Junction Diode Realized with WSe <sub>2</sub> Surface and Edge Dual Contacts. <i>Small</i> , 2022, 18, .	5.2	4
339	Formation of One-Dimensional van der Waals Heterostructures via Self-Assembly of Blue Phosphorene Nanoribbons to Carbon Nanotubes. <i>Acta Mechanica Solida Sinica</i> , 2022, 35, 913-921.	1.0	1
340	Two-dimensional devices and integration towards the silicon lines. <i>Nature Materials</i> , 2022, 21, 1225-1239.	13.3	79
341	Facile one-pot iodine gas phase doping on 2D MoS <sub>2</sub> /CuS FET at room temperature. <i>Nanotechnology</i> , 2023, 34, 015702.	1.3	3
342	M <sub>3</sub> C <sub>2</sub> (OH) <sub>2</sub> (M = Zr and Hf): An Ideal Electrode Material for sub-5 Ånm 2D Field-Effect Transistors. <i>Advanced Materials Interfaces</i> , 2022, 9, .	1.9	2
343	p-type 2D Semiconductors for Future Electronics. <i>Advanced Materials</i> , 2023, 35, .	11.1	15
344	Recent Progress in Contact Engineering of Field-Effect Transistor Based on Two-Dimensional Materials. <i>Nanomaterials</i> , 2022, 12, 3845.	1.9	3
345	Challenges for Nanoscale CMOS Logic Based on Two-Dimensional Materials. <i>Nanomaterials</i> , 2022, 12, 3548.	1.9	13
346	Two-dimensional C <sub>3</sub> N/WS <sub>2</sub> vdW heterojunction for direct Z-scheme photocatalytic overall water splitting. <i>International Journal of Hydrogen Energy</i> , 2023, 48, 2186-2199.	3.8	21
347	Evaluation of Metal-Semiconductor Contact Quality: Correlation of 1/f Noise and Nonlinearity. <i>IEEE Transactions on Electron Devices</i> , 2022, , 1-6.	1.6	0
349	Challenges and Opportunities of Chemiresistors Based on Microelectromechanical Systems for Chemical Olfaction. <i>ACS Nano</i> , 2022, 16, 17778-17801.	7.3	6

#	ARTICLE	IF	CITATIONS
350	P-Type Ohmic Contact to Monolayer WSe <sub>2</sub> Field-Effect Transistors Using High-Electron Affinity Amorphous MoO <sub>3</sub> . ACS Applied Electronic Materials, 2022, 4, 5379-5386.	2.0	3
351	Van der Waals-Interface-Dominated All-2D Electronics. Advanced Materials, 2023, 35, .	11.1	13
352	Recent Advances in Two-dimensional p-type Metal Chalcogenides synthesis, doping strategies and applications. Journal Physics D: Applied Physics, 0, , .	1.3	0
353	Formation of In-Plane Semiconductor-Metal Contacts in 2D Platinum Telluride by Converting PtTe <sub>2</sub> to Pt <sub>2</sub> Te <sub>2</sub> . Nano Letters, 2022, 22, 9571-9577.	4.5	6
354	High-Performance Monolayer MoS <sub>2</sub> Field-Effect Transistors on Cyclic Olefin Copolymer-Passivated SiO <sub>2</sub> Gate Dielectric. Advanced Optical Materials, 0, , 2201653.	3.6	4
355	Heterogeneous Fe(IV) O mediated fenton-like process on Fe-Zr heterojunction for selective oxidation of organic pollutants at near neutral pH. Chemical Engineering Journal, 2023, 454, 140516.	6.6	4
356	Tuning electronic and optical properties of BlueP/MoSe <sub>2</sub> van der Waals heterostructures by strain and external electric field. Results in Physics, 2023, 44, 106135.	2.0	4
357	Progress in the Development of Active-Matrix Quantum-Dot Light-Emitting Diodes Driven by Non-Si Thin-Film Transistors. Materials, 2022, 15, 8511.	1.3	2
358	Modulation Doping of Single-Layer Semiconductors for Improved Contact at Metal Interfaces. Nano Letters, 2022, 22, 9700-9706.	4.5	4
359	Plasmonic Slot Waveguide - Integrated MoTe <sub>2</sub> Photodetector with 30-GHz Bandwidth at Telecom Wavelength. , 2022, , .		1
361	Two-dimensional layered materials and heterostructures for flexible electronics. Matter, 2022, 5, 4116-4132.	5.0	10
362	Comparison of contact metals evaporated onto monolayer molybdenum disulfide. Journal of Applied Physics, 2022, 132, 224305.	1.1	0
363	Only gold can pull this off: mechanical exfoliations of transition metal dichalcogenides beyond scotch tape. Applied Physics A: Materials Science and Processing, 2023, 129, .	1.1	7
364	Three-dimensional transistors and integration based on low-dimensional materials for the post-Moore's law era. Materials Today, 2022, , .	8.3	4
367	Wafer-scale integration of transition metal dichalcogenide field-effect transistors using adhesion lithography. Nature Electronics, 2023, 6, 146-153.	13.1	9
368	è¶...è—,é†á±žæ€\$MoO <sub>2</sub> ç³ç±³ç%¶ãæŽšãæ^ãšã...¶èCEfã¼·ãžæŽ¥èš ã°”ç”ç”ç©¶. Science China Materials, 2023, 66, 1504-1510		
369	Epitaxial van der Waals contacts for low schottky barrier MoS <sub>2</sub> field effect transistors. Nano Research, 2023, 16, 11832-11838.	5.8	5
370	Record-High Work-Function p-Type CuBiP <sub>2</sub> Se <sub>6</sub> Atomic Layers for High-Photoresponse van der Waals Vertical Heterostructure Phototransistor. Advanced Materials, 2023, 35, .	11.1	6

#	ARTICLE	IF	CITATIONS
371	Controlled Adhesion of Ice toward Ultraclean 2D Materials. <i>Advanced Materials</i> , 2023, 35, .	11.1	8
372	Comprehensive Polarity Regulation of $WSe_2$ Field Effect Transistors Enabled by Combining Contact Engineering and Plasma Doping. <i>Physica Status Solidi - Rapid Research Letters</i> , 2023, 17, .	1.2	2
373	Approaching the quantum limit in two-dimensional semiconductor contacts. <i>Nature</i> , 2023, 613, 274-279.	13.7	100
374	Electric-field-driven interfacial trapping of drifting triboelectric charges via contact electrification. <i>Energy and Environmental Science</i> , 2023, 16, 598-609.	15.6	11
375	Emerging $MoS_2$ Wafer-Scale Technique for Integrated Circuits. <i>Nano-Micro Letters</i> , 2023, 15, .	14.4	37
376	A Monolayer $MoS_2$ FET with an EOT of 1.1 nm Achieved by the Direct Formation of a High- $\epsilon$ $Er_2O_3$ Insulator Through Thermal Evaporation. <i>Small</i> , 2023, 19, .	5.2	7
377	Modifying the Power and Performance of 2-Dimensional $MoS_2$ Field Effect Transistors. <i>Research</i> , 2023, 6, .	2.8	9
378	Electronic Modulation of Semimetallic Electrode for 2D van der Waals Devices. <i>Small Structures</i> , 2023, 4, .	6.9	4
379	Mechanical and electronic properties of $MX/Te$ ( $M=Ge, Sn$ ; $X=As, Se, Te$ ) van der Waals heterostructures. <i>Surfaces and Interfaces</i> , 2023, 36, 102604.	1.5	2
381	p-Type ohmic contact to $MoS_2$ via binary compound electrodes. <i>Journal of Materials Chemistry C</i> , 2023, 11, 3119-3126.	2.7	1
382	Heterogeneous Integration of Atomically Thin Indium Tungsten Oxide Transistors for Low-Power 3D Monolithic Complementary Inverter. <i>Advanced Science</i> , 2023, 11, 2205481.	5.6	2
383	One-dimensional semimetal contacts to two-dimensional semiconductors. <i>Nature Communications</i> , 2023, 14, .	5.8	13
384	Synthesis of 2D heterostructures. , 2023, , 55-95.		0
385	Projected Water Scarcity and Hydrological Extremes in the Yellow River Basin in the 21st Century under SSP-RCP Scenarios. <i>Water (Switzerland)</i> , 2023, 15, 446.	1.2	4
386	Effects of Oxygen Plasma Treatment on Fermi Level Pinning and Tunneling at the Metal-Semiconductor Interface of $WSe_2$ FETs. <i>Advanced Electronic Materials</i> , 2023, 9, .	2.6	4
387	Intrinsic Seebeck coefficients of 2D polycrystalline $PtSe_2$ semiconducting films through two-step annealing. <i>Journal of Materials Chemistry A</i> , 2023, 11, 5714-5724.	5.2	7
388	Multifunctional indium selenide devices based on van der Waals contacts: High-quality Schottky diodes and optoelectronic memories. <i>Nano Energy</i> , 2023, 108, 108238.	8.2	5
389	High-Performance Monolayer $WSe_2$ p/n FETs via Antimony-Platinum Modulated Contact Technology towards 2D CMOS Electronics. , 2022, , .		4

#	ARTICLE	IF	CITATIONS
390	Coherent consolidation of trillions of nucleations for mono-atom step-level flat surfaces. Nature Communications, 2023, 14, .	5.8	1
391	Sb <sub>2</sub> Te <sub>3</sub> /MoS <sub>2</sub> Van der Waals Junctions with High Thermal Stability and Low Contact Resistance. Advanced Electronic Materials, 2023, 9, .	2.6	3
392	High-throughput screening of phase-engineered atomically thin transition-metal dichalcogenides for van der Waals contacts at the Schottky-Mott limit. Information Materials, 2023, 5, .	8.5	11
393	Bright and Efficient Light-Emitting Devices Based on 2D Transition Metal Dichalcogenides. Advanced Materials, 2023, 35, .	11.1	10
394	Two-Dimensional Semiconductors with High Intrinsic Carrier Mobility at Room Temperature. Physical Review Letters, 2023, 130, .	2.9	15
395	Wafer-scale and universal van der Waals metal semiconductor contact. Nature Communications, 2023, 14, .	5.8	15
396	Chironomus sp. as a Bioindicator for Assessing Microplastic Contamination and the Heavy Metals Associated with It in the Sediment of Wastewater in Sohag Governorate, Egypt. Water, Air, and Soil Pollution, 2023, 234, .	1.1	5
397	Improvements in 2D p-type WSe <sub>2</sub> transistors towards ultimate CMOS scaling. Scientific Reports, 2023, 13, .	1.6	7
398	Excellent Optoelectronic Properties and Low Contact Resistance of Graphene/MoS <sub>2</sub> Heterostructure Optoelectronic Devices: First-Principles Calculation and Experimental Verification. ACS Applied Electronic Materials, 2023, 5, 1676-1687.	2.0	3
399	«Ç»æ–™èÇfâ¼·ăŽă™”ă»řăç•ÇéÇçš„éÇ°„ç” mãœ~¼ă¼®è”ă¼• Chinese Science Bulletin, 2023, , .	0.4	1
400	Semimetal-Monolayer Transition Metal Dichalcogenides Photodetectors for Wafer-Scale Broadband Photonics. Advanced Photonics Research, 2023, 4, .	1.7	0
401	Dielectric Interface Engineering for High-Performance Monolayer MoS <sub>2</sub> Transistors via TaO <sub>x</sub> Interfacial Layer. IEEE Transactions on Electron Devices, 2023, 70, 2067-2074.	1.6	4
402	Bridging Synthesis and Controllable Doping of Monolayer 4 in. Length Transition-Metal Dichalcogenides Single Crystals with High Electron Mobility. Advanced Materials, 2023, 35, .	11.1	8
403	Resolving Interface Barrier Deviation from the Schottky-Mott Rule: A Mitigation Strategy via Engineering MoS <sub>2</sub> -Metal van der Waals Contact. Journal of Physical Chemistry Letters, 2023, 14, 2940-2949.	2.1	1
404	Defects in WS <sub>2</sub> monolayer calculated with a nonlocal functional: any difference from GGA?. Electronic Structure, 2023, 5, 024001.	1.0	2
405	Semimetal contacts to monolayer semiconductor: weak metalization as an effective mechanism to Schottky barrier lowering. Journal Physics D: Applied Physics, 2023, 56, 234001.	1.3	8
406	Threshold Voltage Model for 2-D FETs With Undoped Body and Gated Source. IEEE Transactions on Electron Devices, 2023, 70, 2575-2580.	1.6	0
407	Ballistic two-dimensional InSe transistors. Nature, 2023, 616, 470-475.	13.7	66

#	ARTICLE	IF	CITATIONS
408	Van Der Waals Metal Contacts for Electronic and Optoelectronic Devices. ACS Applied Electronic Materials, 2023, 5, 1903-1925.	2.0	1
409	2D fin field-effect transistors integrated with epitaxial high-k gate oxide. Nature, 2023, 616, 66-72.	13.7	42
410	éçáç”µæžæŽÿè\$ á”ç””çš,,ä°CEç» é†’á±žæ€Sèj†æ;é†’á±žçj«á±žáCE-á°ç%o©çš,,á°†á†á’CEá™”á»†ç”ç©†èj;á±•. Chinese Science Bulletin,		
411	Highly reproducible van der Waals integration of two-dimensional electronics on the wafer scale. Nature Nanotechnology, 2023, 18, 471-478.	15.6	22
412	Large-area synthesis of high electrical performance MoS <sub>2</sub> by a commercially scalable atomic layer deposition process. Npj 2D Materials and Applications, 2023, 7, .	3.9	8
413	Keep in contact. Science Bulletin, 2023, 68, 787-787.	4.3	0
414	Growth and applications of two-dimensional single crystals. 2D Materials, 2023, 10, 032001.	2.0	4
415	Two-Dimensional (2D) Materials-Inserted Conductive Bridge Random Access Memory: Controllable Injection of Cations in Vertical Stacking Alignment of MoSe <sub>2</sub> Layers Prepared by Plasma-Assisted Chemical Vapor Reaction. , 2023, 5, 1401-1410.		3
416	Graphene-Enhanced Metal Transfer Printing for Strong van der Waals Contacts between 3D Metals and 2D Semiconductors. Advanced Functional Materials, 2023, 33, .	7.8	5
417	Two-dimensional transition metal dichalcogenides for post-silicon electronics. , 2023, , 20230015.		2
418	Ultrascaled Contacts to Monolayer MoS <sub>2</sub> Field Effect Transistors. Nano Letters, 2023, 23, 3426-3434.	4.5	8
419	Two-dimensional MoSi <sub>2</sub> As <sub>4</sub> -based field-effect transistors integrating switching and gas-sensing functions. Nanoscale, 2023, 15, 9106-9115.	2.8	6
431	Contact Resistances to n- and p-type 2D Semiconductors MoS <sub>2</sub> and WSe <sub>2</sub> with Moire Lattice Interfaces. , 2023, , .		0
432	Dielectrics for Two-Dimensional Transition-Metal Dichalcogenide Applications. ACS Nano, 2023, 17, 9870-9905.	7.3	8
454	Scaled contact length with low contact resistance in monolayer 2D channel transistors. , 2023, , .		2
490	Silicon-processes-compatible contact engineering for two-dimensional materials integrated circuits. Nano Research, 2023, 16, 12471-12490.	5.8	1
509	Computational Design of Two-Dimensional Semiconductors and Heterostructures for Sustainable Electronics Applications. , 2023, , .		0