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**Black phosphorus-monolayer MoS<sub>2</sub> van der Waals heterojunction p-n diode**

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#	Paper	IF	Citations
1061	High-Performance MoS <sub>2</sub> /CuO Nanosheet-on-One-Dimensional Heterojunction Photodetectors.		
1060	Ultrahigh-Performance Optoelectronics Demonstrated in Ultrathin Perovskite-Based Vertical Semiconductor Heterostructures.		
1059	Near-Direct Bandgap WSe <sub>2</sub> /ReS <sub>2</sub> Type-II pn Heterojunction for Enhanced Ultrafast Photodetection and High-Performance Photovoltaics.		
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1056	Self-Assembly High-Performance UVvisNIR Broadband In <sub>2</sub> Se <sub>3</sub> /Si Photodetector Array for Weak Signal Detection.		
1055	The potential application of phosphorene as an anode material in Li-ion batteries. <b>2014</b> , 2, 19046-19052		254
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696	Quantum oscillation in carrier transport in two-dimensional junctions. <i>Nanoscale</i> , <b>2018</b> , 10, 7912-7917	7.7	5
695	Ab initio effective deformation potentials of phosphorene and consistency checks. <b>2018</b> , 30, 225701		5
694	On the Generalized Thermal Conductance Characterizations of Mixed One-Dimensional-Two-Dimensional van der Waals Heterostructures and Their Implication for Pressure Sensors. <b>2018</b> , 10, 14221-14229		13
693	A semi-floating gate memory based on van der Waals heterostructures for quasi-non-volatile applications. <b>2018</b> , 13, 404-410		227
692	Van der Waals Coupled Organic Molecules with Monolayer MoS for Fast Response Photodetectors with Gate-Tunable Responsivity. <i>ACS Nano</i> , <b>2018</b> , 12, 4062-4073	16.7	120
691	The organic-2D transition metal dichalcogenide heterointerface. <b>2018</b> , 47, 3241-3264		113
690	Self-powered photogalvanic phosphorene photodetectors with high polarization sensitivity and suppressed dark current. <i>Nanoscale</i> , <b>2018</b> , 10, 7694-7701	7.7	32
689	WSe <sub>2</sub> /GeSe heterojunction photodiode with giant gate tunability. <b>2018</b> , 49, 103-108		49
688	Effect of stacking order and in-plane strain on the electronic properties of bilayer GeSe. <b>2018</b> , 20, 6929-6935		25
687	Electrically tunable band gap of the 1T-MoS <sub>2</sub> based heterostructure: A first-principles calculation. <b>2018</b> , 159, 222-228		4
686	Modulation of band gap by an applied electric field in BN-based heterostructures. <b>2018</b> , 273, 44-49		6
685	Dramatic Impact of Dimensionality on the Electrostatics of P-N Junctions and Its Sensing and Switching Applications. <b>2018</b> , 17, 293-298		25

684	A highly polarization sensitive antimonene photodetector with a broadband photoresponse and strong anisotropy. <i>Journal of Materials Chemistry C</i> , <b>2018</b> , 6, 2509-2514	7.1	48
683	The heterogeneity analysis of two-dimensional Mo(1-x)W(x)S(1-y)Se <sub>y</sub> alloys by optical methods. <b>2018</b> , 651, 7-12		0
682	High Performance Black Phosphorus Electronic and Photonic Devices with HfLaO Dielectric. <b>2018</b> , 39, 127-130		25
681	2D Photovoltaic Devices: Progress and Prospects. <b>2018</b> , 2, 1700294		77
680	Preparation of Black Phosphorus by the Mechanical Ball Milling Method and its Characterization. <b>2018</b> , 271, 18-22		5
679	2D Layered Material-Based van der Waals Heterostructures for Optoelectronics. <b>2018</b> , 28, 1706587		191
678	Exploring Two-Dimensional Materials toward the Next-Generation Circuits: From Monomer Design to Assembly Control. <b>2018</b> , 118, 6236-6296		261
677	Chemical Vapor Deposition Growth and Applications of Two-Dimensional Materials and Their Heterostructures. <b>2018</b> , 118, 6091-6133		643
676	Self-Aligned van der Waals Heterojunction Diodes and Transistors. <b>2018</b> , 18, 1421-1427		36
675	Carrier Transport Dynamics in High Speed Black Phosphorus Photodetectors. <b>2018</b> , 5, 1412-1417		10
674	Interlayer coupling effects on electronic properties of the phosphorene/h-BN van der Waals heterostructure: A first principles investigation. <b>2018</b> , 534, 51-55		7
673	Synthesis of In-Plane Artificial Lattices of Monolayer Multijunctions. <b>2018</b> , 30, 1704796		25
672	Strong interlayer coupling in phosphorene/graphene van der Waals heterostructure: A first-principles investigation. <b>2018</b> , 13, 1		17
671	Recent progress in 2D group-VA semiconductors: from theory to experiment. <b>2018</b> , 47, 982-1021		549
670	Mechanical Properties of 2D Materials Studied by In Situ Microscopy Techniques. <b>2018</b> , 5, 1701246		50
669	Generalized Scheme for High Performing Photodetectors with a p-Type 2D Channel Layer and n-Type Nanoparticles. <b>2018</b> , 14, 1703065		14
668	A fast and zero-biased photodetector based on GaTe/hSe vertical 2D p-n heterojunction. <b>2018</b> , 5, 025008		59
667	Tuning the Carrier Confinement in GeS/Phosphorene van der Waals Heterostructures. <b>2018</b> , 14, 1703536		37

666	Interfacial Coupling Effect on Electron Transport in MoS/SrTiO Heterostructure: An Ab-initio Study. <b>2018</b> , 8, 714		7
665	Ultrathin two-dimensional metallic nanomaterials. <b>2018</b> , 2, 456-467		43
664	Tunneling Diode Based on WSe /SnS Heterostructure Incorporating High Detectivity and Responsivity. <b>2018</b> , 30, 1703286		183
663	THz photonics in two dimensional materials and metamaterials: properties, devices and prospects. <i>Journal of Materials Chemistry C</i> , <b>2018</b> , 6, 1291-1306	7.1	81
662	P-GaSe/N-MoS Vertical Heterostructures Synthesized by van der Waals Epitaxy for Photoresponse Modulation. <b>2018</b> , 14, 1702731		71
661	Charge-Transfer-Induced p-Type Channel in MoS Flake Field Effect Transistors. <b>2018</b> , 10, 4206-4212		23
660	Schottky barrier tuning of the graphene/SnS <sub>2</sub> van der Waals heterostructures through electric field. <b>2018</b> , 271, 56-61		16
659	Novel Optoelectronic Devices: Transition-Metal-Dichalcogenide-Based 2D Heterostructures. <i>Advanced Electronic Materials</i> , <b>2018</b> , 4, 1700335	6.4	61
658	Few-layer p-type phosphorene sheet: An efficient transparent conducting electrode in silicon heterojunction solar cell. <b>2018</b> , 151, 65-72		11
657	Electrophoretic Deposited Stable Chitosan@MoS Coating with Rapid In Situ Bacteria-Killing Ability under Dual-Light Irradiation. <b>2018</b> , 14, e1704347		125
656	Light Sources and Photodetectors Enabled by 2D Semiconductors. <b>2018</b> , 2, 1800019		24
655	Study of local currents in low dimension materials using complex injecting potentials. <b>2018</b> , 123, 165102		3
654	Carrier Transport and Photoresponse in GeSe/MoS Heterojunction p-n Diodes. <b>2018</b> , 14, e1704559		23
653	Material Synthesis and Device Aspects of Monolayer Tungsten Diselenide. <b>2018</b> , 8, 5221		12
652	Blue phosphorene: Calculation of five-band $k \cdot p$ Hamiltonian based on group theory and infinitesimal basis transformations approach. <b>2018</b> , 118, 1-5		2
651	Electronic Properties of van der Waals Heterostructure of Black Phosphorus and MoS <sub>2</sub> . <b>2018</b> , 122, 7027-7032		57
650	Temperature-Dependent and Gate-Tunable Rectification in a Black Phosphorus/WS van der Waals Heterojunction Diode. <b>2018</b> , 10, 13150-13157		34
649	Computational design and property predictions for two-dimensional nanostructures. <b>2018</b> , 21, 391-418		55



648	A revival of 2D materials, phosphorene: Its application as sensors. <b>2018</b> , 64, 60-69		42
647	Sensitivity Challenge of Steep Transistors. <b>2018</b> , 65, 1633-1639		13
646	Interfacial properties of black phosphorus/transition metal carbide van der Waals heterostructures. <b>2018</b> , 13, 1		15
645	Chemical synthesis of two-dimensional atomic crystals, heterostructures and superlattices. <b>2018</b> , 47, 3129-3151		99
644	Efficient band structure modulations in two-dimensional MnPSe/CrSiTe van der Waals heterostructures. <b>2018</b> , 29, 214001		6
643	Tunable Magnetic Interaction of Mn-Doped MoS <sub>2</sub> /SiC van der Waals Heterostructures Under Normal Strain. <b>2018</b> , 31, 449-453		0
642	Modulation of band gap by normal strain in SiC-based heterostructures. <b>2018</b> , 154, 634-639		0
641	Recent Applications of 2D Inorganic Nanosheets for Emerging Energy Storage System. <b>2018</b> , 24, 4757-4773		40
640	The rising star of 2D black phosphorus beyond graphene: synthesis, properties and electronic applications. <b>2018</b> , 5, 014002		152
639	Black-Phosphorus-Based Orientation-Induced Diodes. <b>2018</b> , 30, 1704653		38
638	Growth control, interface behavior, band alignment, and potential device applications of 2D lateral heterostructures. <b>2018</b> , 8, e1353		26
637	Applications of Phosphorene and Black Phosphorus in Energy Conversion and Storage Devices. <b>2018</b> , 8, 1702093		272
636	Pronounced Photovoltaic Effect in Electrically Tunable Lateral Black-Phosphorus Heterojunction Diode. <i>Advanced Electronic Materials</i> , <b>2018</b> , 4, 1700442	6.4	17
635	Vertical MoSe-MoO p-n heterojunction and its application in optoelectronics. <b>2018</b> , 29, 045202		9
634	Tuning the Schottky rectification in graphene-hexagonal boron nitride-molybdenum disulfide heterostructure. <b>2018</b> , 513, 677-683		28
633	Ultrahigh, Ultrafast, and Self-Powered Visible-Near-Infrared Optical Position-Sensitive Detector Based on a CVD-Prepared Vertically Standing Few-Layer MoS/Si Heterojunction. <b>2018</b> , 5, 1700502		57
632	Heterostructured graphene quantum dot/WSe <sub>2</sub> /Si photodetector with suppressed dark current and improved detectivity. <i>Nano Research</i> , <b>2018</b> , 11, 3233-3243	10	38
631	Nonlinear modeling of crystal system transition of black phosphorus using continuum-DFT model. <b>2018</b> , 30, 035901		5

630	Two dimensional materials based photodetectors. <b>2018</b> , 88, 149-173		50
629	Chemical vapor deposition growth of two-dimensional heterojunctions. <b>2018</b> , 61, 1		42
628	Strain-Induced Tunable Magnetic Interaction in (Mo,Co)S <sub>2</sub> /(Si,Co)C Heterostructure. <b>2018</b> , 31, 597-601		1
627	Ultra-sensitive and plasmon-tunable graphene photodetectors for micro-spectrometry. <i>Nanoscale</i> , <b>2018</b> , 10, 20013-20019	7.7	25
626	Tunable band offsets in the BP/PO van der Waals heterostructure: first-principles calculations. <b>2018</b> , 20, 29931-29938		5
625	Tunable transport and optoelectronic properties of monolayer black phosphorus by grafting PdCl quantum dots.. <b>2018</b> , 8, 35226-35236		4
624	Fabrication of a high performance ZnIn <sub>2</sub> S <sub>4</sub> /Si heterostructure photodetector array for weak signal detection. <i>Journal of Materials Chemistry C</i> , <b>2018</b> , 6, 12928-12939	7.1	20
623	Two-dimensional black phosphorus: its fabrication, functionalization and applications. <i>Nanoscale</i> , <b>2018</b> , 10, 21575-21603	7.7	54
622	A high performance self-driven photodetector based on a graphene/InSe/MoS <sub>2</sub> vertical heterostructure. <i>Journal of Materials Chemistry C</i> , <b>2018</b> , 6, 12407-12412	7.1	18
621	Effects of Electric Field on the Electronic Structures of Broken-gap Phosphorene/SnX <sub>2</sub> (X = S, Se) van der Waals Heterojunctions. <b>2018</b> , 10,		35
620	Electronic and optical properties of germanene/MoS heterobilayers: first principles study. <b>2018</b> , 24, 333		10
619	Electrical contacts to two-dimensional transition-metal dichalcogenides. <b>2018</b> , 39, 124001		7
618	Ultimate limit in size and performance of WSe vertical diodes. <b>2018</b> , 9, 5371		38
617	Performance Improvement in Hydrogenated Few-Layer Black Phosphorus Field-Effect Transistors. <b>2018</b> , 35, 127302		2
616	Hybrid Integration of Black Phosphorus-WSe <sub>2</sub> Heterojunction Photodetector on Silicon Waveguide. <b>2018</b> ,		
615	Carrier Engineering in Polarization-Sensitive Black Phosphorus van der Waals Junctions. <b>2018</b> , 10, 35615-35622	1.5	
614	Band Structure Engineering in 2D Materials for Optoelectronic Applications. <b>2018</b> , 3, 1800072		48
613	Analysis of the relationship between the contact barrier and rectification ratio in a two-dimensional PNI heterojunction. <b>2018</b> , 33, 114012		5

612	Recent Advances in Synthesis and Applications of 2D Junctions. <b>2018</b> , 14, e1801606		16
611	All-Inorganic Perovskite Quantum Dot-Monolayer MoS Mixed-Dimensional van der Waals Heterostructure for Ultrasensitive Photodetector. <b>2018</b> , 5, 1801219		101
610	The impact of substrate surface defects on the properties of two-dimensional van der Waals heterostructures. <i>Nanoscale</i> , <b>2018</b> , 10, 19212-19219	7.7	9
609	High-Quality Reconfigurable Black Phosphorus p-n Junctions. <b>2018</b> , 1-5		3
608	Recent progress in photodetectors based on low-dimensional nanomaterials. <b>2018</b> , 7, 393-411		20
607	A MoSe <sub>2</sub> /WSe <sub>2</sub> Heterojunction-Based Photodetector at Telecommunication Wavelengths. <b>2018</b> , 28, 1804388		60
606	Promise and Challenge of Phosphorus in Science, Technology, and Application. <b>2018</b> , 28, 1803471		49
605	Epitaxial Growth of 1D Atomic Chain Based Se Nanoplates on Monolayer ReS <sub>2</sub> for High-Performance Photodetectors. <b>2018</b> , 28, 1806254		37
604	Wafer-Scale Fabrication of Two-Dimensional PtS/PtSe Heterojunctions for Efficient and Broad band Photodetection. <b>2018</b> , 10, 40614-40622		70
603	Spatially and Precisely Controlled Large-Scale and Persistent Optical Gating in a TiO <sub>2</sub> -MoS <sub>2</sub> Heterostructure. <b>2018</b> , 10, 38319-38325		0
602	2D WSe <sub>2</sub> /MoS <sub>2</sub> van der Waals heterojunction photodiode for visible-near infrared broadband detection. <b>2018</b> , 113, 163102		33
601	Strain-Modulated Band Engineering in Two-Dimensional Black Phosphorus/MoS <sub>2</sub> van der Waals Heterojunction. <b>2018</b> , 3, 14641-14649		16
600	Electrical modulation of terahertz radiation using graphene-phosphorene heterostructures. <b>2018</b> , 33, 124010		14
599	Recent Advances in van der Waals Heterojunctions Based on Semiconducting Transition Metal Dichalcogenides. <i>Advanced Electronic Materials</i> , <b>2018</b> , 4, 1800270	6.4	17
598	WSe <sub>2</sub> /ReS <sub>2</sub> vdW Heterostructure for Versatile Optoelectronic Applications. <b>2018</b> ,		2
597	Real-space-transfer mechanism of negative differential conductivity in gated graphene-phosphorene hybrid structures: Phenomenological heating model. <b>2018</b> , 124, 114501		10
596	Fabrication of a p $\bar{n}$ Heterojunction Using Topological Insulator Bi <sub>2</sub> Te <sub>3</sub> Bi and Its Annealing Response. <b>2018</b> , 47, 6972-6983		8
595	Polarization-Dependent Photocurrent of Black Phosphorus/Rhenium Disulfide Heterojunctions. <b>2018</b> , 5, 1800960		15

594	Band Modulation of Black Phosphorus and Molybdenum Disulfide van der Waals Heterojunction: Twist and Electric Field Effects. <b>2018</b> ,	8
593	Insights into the mechanism of the enhanced visible-light photocatalytic activity of black phosphorus/BiVO <sub>4</sub> heterostructure: a first-principles study. <b>2018</b> , 6, 19167-19175	49
592	Optical and electrical transport properties of ZnO/MoS <sub>2</sub> heterojunction p-n structure. <b>2018</b> , 220, 433-440	7
591	First-principles calculations of the electronic properties of SiC-based bilayer and trilayer heterostructures. <b>2018</b> , 20, 24726-24734	46
590	Progress in Contact, Doping and Mobility Engineering of MoS <sub>2</sub> : An Atomically Thin 2D Semiconductor. <b>2018</b> , 8, 316	75
589	High-Throughput Computational Screening of Vertical 2D van der Waals Heterostructures for High-efficiency Excitonic Solar Cells. <b>2018</b> , 10, 32142-32150	41
588	Synthesis and Characterization of Phosphorene: A Novel 2D Material. <b>2018</b> , 61-92	0
587	Approaching the Schottky-Mott limit in van der Waals metal-semiconductor junctions. <b>2018</b> , 557, 696-700	766
586	Strain tuned InSe/MoS bilayer van der Waals heterostructures for photovoltaics or photocatalysis. <b>2018</b> , 20, 17574-17582	38
585	Highly Polarized and Fast Photoresponse of Black Phosphorus-InSe Vertical p-n Heterojunctions. <b>2018</b> , 28, 1802011	93
584	High-Performance Photovoltaic Effect with Electrically Balanced Charge Carriers in Black Phosphorus and WS <sub>2</sub> Heterojunction. <b>2018</b> , 5, 1800671	15
583	Semiconductor Nanomembrane Materials for High-Performance Soft Electronic Devices. <b>2018</b> , 140, 9001-9019	22
582	Grain Boundaries Are Benign and Suppress Nonradiative Electron-Hole Recombination in Monolayer Black Phosphorus: A Time-Domain Ab Initio Study. <b>2018</b> , 9, 3856-3862	39
581	Theoretical study of strained black phosphorus photodetector integrated with silicon waveguide. <b>2018</b> , 122, 501-509	5
580	Tunable black phosphorus heterojunction transistors for multifunctional optoelectronics. <i>Nanoscale</i> , <b>2018</b> , 10, 14359-14367	7-7 19
579	Realization of N-Type Semiconducting of Phosphorene through Surface Metal Doping and Work Function Study. <b>2018</b> , 2018, 1-9	8
578	Two-dimensional light-emitting materials: preparation, properties and applications. <b>2018</b> , 47, 6128-6174	118
577	Recent Progress and Future Prospects of 2D-Based Photodetectors. <b>2018</b> , 30, e1801164	221

576	Strong coherent coupling between graphene surface plasmons and anisotropic black phosphorus localized surface plasmons. <b>2018</b> , 26, 1633-1644		70
575	An atom-to-circuit modeling approach to all-2D metal-insulator-semiconductor field-effect transistors. <b>2018</b> , 2,		10
574	Band gap reduction in van der Waals layered 2D materials via a de-charge transfer mechanism. <i>Nanoscale</i> , <b>2018</b> , 10, 16759-16764	7.7	15
573	Interlayer coupling in two-dimensional semiconductor materials. <b>2018</b> , 33, 093001		23
572	Electronic and vibrational properties of TMDs heterogeneous bilayers, nontwisted bilayers silicene/TMDs heterostructures and photovoltaic heterojunctions of fullerenes with TMDs monolayers. <b>2018</b> , 104, 155-164		19
571	Room-temperature pyro-catalytic hydrogen generation of 2D few-layer black phosphorene under cold-hot alternation. <b>2018</b> , 9, 2889		85
570	Progress on Black Phosphorus Photonics. <b>2018</b> , 6, 1800365		29
569	Synthesis of hexagonal boron nitride heterostructures for 2D van der Waals electronics. <b>2018</b> , 47, 6342-6369		80
568	Various Structures of 2D Transition-Metal Dichalcogenides and Their Applications. <b>2018</b> , 2, 1800094		49
567	Van der Waals Heterostructure Based Field Effect Transistor Application. <b>2018</b> , 8, 8		17
566	Progress on Crystal Growth of Two-Dimensional Semiconductors for Optoelectronic Applications. <b>2018</b> , 8, 252		4
565	Electrical Rectifying and Photosensing Property of Schottky Diode Based on MoS. <b>2018</b> , 10, 24613-24619		22
564	High performance self-gating graphene/MoS diode enabled by asymmetric contacts. <b>2018</b> , 29, 395201		5
563	Tunable Bandgap and Optical Properties of Black Phosphorene Nanotubes. <b>2018</b> , 11,		19
562	High Detectivity from a Lateral Graphene/MoS <sub>2</sub> Schottky Photodetector Grown by Chemical Vapor Deposition. <i>Advanced Electronic Materials</i> , <b>2018</b> , 4, 1800069	6.4	26
561	2D library beyond graphene and transition metal dichalcogenides: a focus on photodetection. <b>2018</b> , 47, 6296-6341		145
560	Spin-dependent k.p Hamiltonian of black phosphorene based on L <sub>w</sub> din partitioning method. <b>2018</b> , 124, 035702		2
559	Acoustically enhanced photodetection by a black phosphorus-MoS van der Waals heterojunction p-n diode. <i>Nanoscale</i> , <b>2018</b> , 10, 10148-10153	7.7	21

558	Engineering graphene and TMDs based van der Waals heterostructures for photovoltaic and photoelectrochemical solar energy conversion. <b>2018</b> , 47, 4981-5037		226
557	Negative Photoconductance in van der Waals Heterostructure-Based Floating Gate Phototransistor. <i>ACS Nano</i> , <b>2018</b> , 12, 9513-9520	16.7	75
556	Photoinduced Orientation-Dependent Interlayer Carrier Transportation in Cross-Stacked Black Phosphorus van der Waals Junctions. <b>2018</b> , 5, 1800964		5
555	Towards high performance hybrid two-dimensional material plasmonic devices: strong and highly anisotropic plasmonic resonances in nanostructured graphene-black phosphorus bilayer. <b>2018</b> , 26, 22528-22533 <sup>42</sup>		42
554	Strong optical force and its confinement applications based on heterogeneous phosphorene pairs. <b>2018</b> , 26, 23221-23232		7
553	Polarization-resolved black phosphorus/molybdenum disulfide mid-wave infrared photodiodes with high detectivity at room temperature. <b>2018</b> , 12, 601-607		226
552	Interlayer coupling and external electric field tunable electronic properties of a 2D type-I HgI <sub>2</sub> /MoS <sub>2</sub> heterostructure. <i>Journal of Materials Chemistry C</i> , <b>2018</b> , 6, 10256-10262	7.1	45
551	Efficient ultraviolet photodetector device based on modulated wide band gap Type-II CuO/CdSe core-shell nanowires. <b>2018</b> , 123, 234-241		8
550	Tuning of the temperature dependence of the resonance frequency shift in atomically thin mechanical resonators with van der Waals heterojunctions. <b>2018</b> , 5, 045022		4
549	Ultrahigh-photoresponsive UV photodetector based on a BP/ReS <sub>2</sub> heterostructure p-n diode. <i>Nanoscale</i> , <b>2018</b> , 10, 16805-16811	7.7	49
548	Independent Band Modulation in 2D van der Waals Heterostructures via a Novel Device Architecture. <b>2018</b> , 5, 1800237		27
547	Biomass-waste derived graphene quantum dots and their applications. <b>2018</b> , 140, 77-99		119
546	The Role of Molybdenum Oxysulfide Rings in the Formation of Two-Dimensional Molybdenum Disulfide by Powder Vaporization. <b>2018</b> , 122, 7320-7327		4
545	In-Plane Homojunctions and Their Dominant Effects on Charge Transport in Vertical van der Waals Heterostructures. <b>2018</b> , 122, 20513-20520		1
544	Monolayer Transition Metal Dichalcogenides as Light Sources. <b>2018</b> , 30, e1707627		46
543	Functional Protection of Exfoliated Black Phosphorus by Noncovalent Modification with Anthraquinone. <i>ACS Nano</i> , <b>2018</b> , 12, 5666-5673	16.7	63
542	Synthesis of ultrathin two-dimensional nanosheets and van der Waals heterostructures from non-layered ECuI. <b>2018</b> , 2,		21
541	Photoelectric Detectors Based on Inorganic p-Type Semiconductor Materials. <b>2018</b> , 30, e1706262		221

540	Enhanced photoresponsivity and hole mobility of MoTe <sub>2</sub> phototransistors by using an Al <sub>2</sub> O <sub>3</sub> high- $\kappa$ gate dielectric. <b>2018</b> , 63, 997-1005		11
539	Probing photoresponse of aligned single-walled carbon nanotube doped ultrathin MoS <sub>2</sub> . <b>2018</b> , 29, 345205		8
538	Single-Shot Optical Anisotropy Imaging with Quantitative Polarization Interference Microscopy. <b>2018</b> , 12, 1800070		9
537	Atomic Layer GaSe/MoS <sub>2</sub> van der Waals Heterostructure Photodiodes with Low Noise and Large Dynamic Range. <b>2018</b> , 5, 2693-2700		32
536	Layer-dependent band alignment of few layers of blue phosphorus and their van der Waals heterostructures with graphene. <b>2018</b> , 97,		34
535	Flexible integrated black phosphorus sensor arrays for high performance ion sensing. <b>2018</b> , 273, 358-364		30
534	Many-Body Complexes in 2D Semiconductors. <b>2019</b> , 31, e1706945		199
533	Electronic performance of printed PEDOT:PSS lines correlated to the physical and chemical properties of coated inkjet papers.. <b>2019</b> , 9, 23925-23938		1
532	Van der Waals heterostructures for optoelectronics: Progress and prospects. <b>2019</b> , 16, 435-455		62
531	Edge-Modified Phosphorene Antidot Nanoflakes and Their van der Waals Heterojunctions for Solar Cell Applications. <b>2019</b> , 123, 20748-20756		12
530	Graphene van der Waals heterostructures for high-performance photodetectors. <i>Journal of Materials Chemistry C</i> , <b>2019</b> , 7, 11056-11067	7.1	21
529	Modulation of the electronic properties and spin polarization of 2H VS nanoribbons by tuning ribbon widths and edge decoration. <b>2019</b> , 21, 18211-18218		5
528	Electronic and magnetic properties of a black phosphorene/TiS heterostructure with transition metal atom intercalation: a first-principles study.. <b>2019</b> , 9, 19418-19428		1
527	Direction and strain controlled anisotropic transport behaviors of 2D GeSe-phosphorene vdW heterojunctions. <b>2019</b> , 30, 445703		13
526	On the elasticity and piezoelectricity of black(blue) phosphorus/ZnO van der Waals heterostructures. <b>2019</b> , 169, 109134		10
525	Synthesis and Optoelectronic Applications of a Stable Type 2D Material: BMnS. <i>ACS Nano</i> , <b>2019</b> , 13, 12662-12670		26
524	Self-Assembly of Atomically Thin Chiral Copper Heterostructures Templated by Black Phosphorus. <b>2019</b> , 29, 1903120		7
523	Epitaxial multilayers of alkanes on two-dimensional black phosphorus as passivating and electrically insulating nanostructures. <i>Nanoscale</i> , <b>2019</b> , 11, 17252-17261	7.7	11

522	Superior Photo-thermionic electron Emission from Illuminated Phosphorene Surface. <b>2019</b> , 9, 10307	6
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514	Seamless MoTe <sub>2</sub> Homo Junction PIN Diode toward 1300 nm Short-Wave Infrared Detection. <b>2019</b> , 7, 1900768	11
513	A two-dimensional MoS/CN broken-gap heterostructure, a first principles study.. <b>2019</b> , 9, 19837-19843	16
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457	Dynamically controllable polarity modulation of MoTe field-effect transistors through ultraviolet light and electrostatic activation. <b>2019</b> , 5, eaav3430	57
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431	Detection of interfacial charge transfer in MoS <sub>2</sub> /PbI <sub>2</sub> heterostructures via Kelvin probe force microscope. <b>2019</b> , 125, 1		5
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411	Few layered black phosphorus/MoS2 nanohybrid: A promising co-catalyst for solar driven hydrogen evolution. <b>2019</b> , 241, 491-498		110
410	Progress, Challenges, and Opportunities for 2D Material Based Photodetectors. <b>2019</b> , 29, 1803807		481
409	The Role of Graphene and Other 2D Materials in Solar Photovoltaics. <b>2019</b> , 31, e1802722		163
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402	Two-dimensional phosphorene/C3N p-n heterostructure: Effect of contact type on electronic and optical properties. <b>2019</b> , 62, 478-489		1
401	Near-Unity Anisotropic Infrared Absorption in Monolayer Black Phosphorus With/Without Subwavelength Patterning Design. <b>2019</b> , 25, 1-7		8
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383	Photoexcited charge carrier behaviors in solar energy conversion systems from theoretical simulations. <b>2020</b> , 10, e1441		3
382	Engineering Field Effect Transistors with 2D Semiconducting Channels: Status and Prospects. <b>2020</b> , 30, 1901971		36
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372	Improvement of gel properties of mackerel mince by phlorotannin extracts from sporophyll of <i>Undaria pinnatifida</i> and UVA induced cross-linking. <b>2020</b> , 51, 333-342		3
371	Surface Functionalization of Black Phosphorus with a Highly Reducing Organoruthenium Complex: Interface Properties and Enhanced Photoresponsivity of Photodetectors. <b>2020</b> , 26, 6576-6582		3
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369	Optoelectronic and photonic devices based on transition metal dichalcogenides. <b>2020</b> , 7, 014002		31
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363	Black phosphorus @ molybdenum disulfide 2D nanocomposite with broad light absorption and high stability for methylene blue decomposition photocatalyst. <b>2020</b> , 31, 155704		11
362	Salt-Assisted Growth of P-type $\text{Cu}_9\text{S}_5$ Nanoflakes for P-N Heterojunction Photodetectors with High Responsivity. <b>2020</b> , 30, 1908382		21
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359	Black Phosphorus. <b>2020</b> ,	3
358	Recent advances in black phosphorus and transition metal dichalcogenideBased electronic and optoelectronics devices. <b>2020</b> , 251-312	2
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354	Zero-Dimensional MXene-Based Optical Devices for Ultrafast and Ultranarrow Photonics Applications. <b>2020</b> , 7, 2002209	27
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349	Lateral Monolayer MoSe <sub>2</sub> -WSe <sub>2</sub> p-n Heterojunctions with Giant Built-In Potentials. <b>2020</b> , 16, e2002263	29
348	Computational screening of vdWs heterostructures of BSe with MoSe <sub>2</sub> and WSe <sub>2</sub> as sustainable hydrogen production materials. <b>2020</b> ,	1
347	Discovery and characterization of 2D materials and their heterostructures. <b>2020</b> , 1-11	2
346	Design and synthesis of two-dimensional materials and their heterostructures. <b>2020</b> , 13-54	1
345	Electronic and optoelectronic properties of the heterostructure devices composed of two-dimensional layered materials. <b>2020</b> , 151-193	2
344	Synthesis of Highly Stable One-Dimensional Black Phosphorus/h-BN Heterostructures: A Novel Flexible Electronic Platform. <b>2020</b> , 37, 076203	3
343	Surface Functionalization of Black Phosphorus by Cu: Effective Electron Doping and Enhanced Photoresponse. <b>2020</b> , 7, 2000701	4

342	High-Performance Broadband Photodetector Based on Monolayer MoS Hybridized with Environment-Friendly CuInSe Quantum Dots. <b>2020</b> , 12, 54927-54935		14
341	Distinctive Interfacial Charge Behavior and Versatile Photoresponse Performance in Isotropic/Anisotropic WS/ReS Heterojunctions. <b>2020</b> , 12, 53475-53483		18
340	Black phosphorus photonics toward on-chip applications. <b>2020</b> , 7, 031302		8
339	Wireless Hand-Held Device Based on Polylactic Acid-Protected, Highly Stable, CTAB-Functionalized Phosphorene for CO Gas Sensing. <b>2020</b> , 12, 38365-38375		7
338	The first-principles study of nH-V complex: impurity effects on p-type SnO monolayer. <b>2020</b> , 22, 19275-19281		1
337	The optical properties of few-layer InSe. <b>2020</b> , 128, 060901		10
336	High-performance junction field-effect transistor based on black phosphorus/EGa2O3 heterostructure. <b>2020</b> , 41, 082002		7
335	Plasmonic sensor utilizing Ti3C2Tx MXene layer and fluoride glass substrate for bio- and gas-sensing applications: Performance evaluation. <b>2020</b> , 42, 100863		9
334	Ultrafast Photocurrent Response and High Detectivity in Two-Dimensional MoSe-based Heterojunctions. <b>2020</b> , 12, 46476-46482		11
333	Integration of multi-layer black phosphorus into photoconductive antennas for THz emission. <b>2020</b> , 128, 063104		4
332	Steer the Rheology of Solvent with Little Surfactant to Exfoliate MoS2 Nanosheet by Liquid Phase Exfoliation Method. <i>Nano</i> , <b>2020</b> , 15, 2050118	1.1	1
331	Spectrally Selective Mid-Wave Infrared Detection Using Fabry-Pérot Cavity Enhanced Black Phosphorus 2D Photodiodes. <i>ACS Nano</i> , <b>2020</b> , 14, 13645-13651	16.7	18
330	Tuning Interface Barrier in 2D BP/ReSe2 Heterojunctions in Control of Optoelectronic Performances and Energy Conversion Efficiencies. <b>2020</b> , 7, 2886-2895		7
329	Visible region absorption in TMDs/phosphorene heterostructures for use in solar energy conversion applications.. <b>2020</b> , 10, 31730-31739		8
328	Electronic and photocatalytic properties of two-dimensional boron phosphide/SiC van der Waals heterostructure with direct type-II band alignment: a first principles study.. <b>2020</b> , 10, 32027-32033		7
327	A type-II blue phosphorus/MoSe2 van der Waals heterostructure: improved electronic and optical properties via vertical electric field. <b>2020</b> , 1, 1849-1857		6
326	2D Transition Metal Dichalcogenide Heterostructures for p- and n-Type Photovoltaic Self-Powered Gas Sensor. <b>2020</b> , 30, 2003360		46
325	Probing the Importance of Charge Balance and Noise Current in WSe/WS/MoS van der Waals Heterojunction Phototransistors by Selective Electrostatic Doping. <b>2020</b> , 7, 2001475		7

324	Nanolayered Black Arsenic/Bilicon Lateral Heterojunction Photodetector for Visible to Mid-Infrared Wavelengths. <b>2020</b> , 3, 9401-9409		2
323	The Role of the Height Fluctuation Effect in the Tunable Interfacial Electronic Structure of the Vertically Stacked BP/MoS <sub>2</sub> Heterojunction. <b>2020</b> , 124, 20256-20261		2
322	The Magnetic Proximity Effect Induced Large Valley Splitting in 2D InSe/Fel Heterostructures. <b>2020</b> , 10,		2
321	Photoelectric Characteristics of a Large-Area n-MoS/p-Si Heterojunction Structure Formed through Sulfurization Process. <b>2020</b> , 20,		3
320	Substrates in the Synthesis of Two-Dimensional Materials via Chemical Vapor Deposition. <b>2020</b> , 32, 10321-10347		4
319	Mechanisms and Applications of Steady-State Photoluminescence Spectroscopy in Two-Dimensional Transition-Metal Dichalcogenides. <i>ACS Nano</i> , <b>2020</b> , 14, 14579-14604	16.7	20
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316	Conductivity Modulation of a Slit Channel in a Monolayer MoS <sub>2</sub> Homostructure. <b>2020</b> , 14, 2000082		2
315	Ultra-high current gain tunneling hot-electron transfer amplifier based on vertical van der Waals heterojunctions. <i>Nano Research</i> , <b>2020</b> , 13, 2085-2090	10	2
314	Synthesis Techniques, Optoelectronic Properties, and Broadband Photodetection of Thin-Film Black Phosphorus. <b>2020</b> , 8, 2000045		18
313	Ultra-thin tubular graphitic carbon Nitride-Carbon Dot lateral heterostructures: One-Step synthesis and highly efficient catalytic hydrogen generation. <b>2020</b> , 397, 125470		38
312	Properties of 2D Heterostructures. <b>2020</b> , 123-141		2
311	Intercalation of NbO nano-flowers into the walls of few-layer black phosphorus creating a heterostructure of FL-BP@NbO with the potential for environmental application. <b>2020</b> , 49, 7474-7487		7
310	Emerging Opportunities for Electrostatic Control in Atomically Thin Devices. <i>ACS Nano</i> , <b>2020</b> , 14, 6498-6518	16.8	26
309	Uptake of formaldehyde onto doped phosphorene nanosheets: A cluster DFT study of single and co-adsorption states. <b>2020</b> , 831, 154885		17
308	State of the art two-dimensional materials-based photodetectors: Prospects, challenges and future outlook. <b>2020</b> , 89, 28-46		5
307	Transport and photoelectric properties of vertical black phosphorus heterojunctions. <b>2020</b> , 44, 10507-10518		3

306	Carrier polarity modulation of molybdenum ditelluride (MoTe) for phototransistor and switching photodiode applications. <i>Nanoscale</i> , <b>2020</b> , 12, 15687-15696	7.7	18
305	Macro van der Waals p-n heterojunction based on SnSe and SnS. <b>2020</b> , 31, 385203		4
304	Large Valley Splitting and Enhancement of Curie Temperature in a Two-Dimensional V13/Cr13 Heterostructure. <b>2020</b> , 124, 7156-7162		9
303	Multifunctional black phosphorus/MoS2 van der Waals heterojunction. <b>2020</b> , 9, 2487-2493		4
302	Scalable Synthesis of a MoS2/Black Phosphorus Heterostructure for pH-Universal Hydrogen Evolution Catalysis. <b>2020</b> , 12, 2840-2848		26
301	A gate-tunable symmetric bipolar junction transistor fabricated via femtosecond laser processing. <b>2020</b> , 2, 1733-1740		6
300	Fabrication, optical properties, and applications of twisted two-dimensional materials. <b>2020</b> , 9, 1717-1742		9
299	Review of 2D group VA material-based heterostructures. <b>2020</b> , 53, 293002		18
298	Present advances and perspectives of broadband photo-detectors based on emerging 2D-Xenes beyond graphene. <i>Nano Research</i> , <b>2020</b> , 13, 891-918	10	27
297	Substitutional transition metal doping in MoS2: a first-principles study. <b>2020</b> , 1, 010008		6
296	High-Performance p-BP/n-PdSe Near-Infrared Photodiodes with a Fast and Gate-Tunable Photoresponse. <b>2020</b> , 12, 19625-19634		32
295	Black phosphorus-based van der Waals heterostructures for mid-infrared light-emission applications. <b>2020</b> , 9, 114		51
294	Ultrasensitive Phototransistor Based on WSe-MoS van der Waals Heterojunction. <b>2020</b> , 20, 5741-5748		54
293	Mo Doping Assisting the CVD Synthesis of Size-Controlled, Uniformly Distributed Single-Layer MoS on Rutile TiO(110). <b>2020</b> , 12, 34378-34387		6
292	Epitaxial growth of In2Se3 on monolayer transition metal dichalcogenide single crystals for high performance photodetectors. <b>2020</b> , 20, 100734		9
291	Single-Crystal Hybrid Perovskite Platelets on Graphene: A Mixed-Dimensional Van Der Waals Heterostructure with Strong Interface Coupling. <b>2020</b> , 30, 1909672		22
290	MoTe p-n Homojunctions Defined by Ferroelectric Polarization. <b>2020</b> , 32, e1907937		60
289	Out-of-Plane Homojunction Enabled High Performance SnS2 Lateral Phototransistor. <b>2020</b> , 8, 1901971		18

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286	Rectifying behavior in twisted bilayer black phosphorus nanojunctions mediated through intrinsic anisotropy. <b>2020</b> , 2, 1493-1501		9
285	Near-Direct Bandgap WSe/ReS Type-II pn Heterojunction for Enhanced Ultrafast Photodetection and High-Performance Photovoltaics. <b>2020</b> , 20, 1707-1717		80
284	Recent advances in doping engineering of black phosphorus. <b>2020</b> , 8, 5421-5441		38
283	WSe <sub>2</sub> 2D p-type semiconductor-based electronic devices for information technology: Design, preparation, and applications. <b>2020</b> , 2, 656-697		49
282	Ultrasensitive Multilayer MoS <sub>2</sub> -Based Photodetector with Permanently Grounded Gate Effect. <i>Advanced Electronic Materials</i> , <b>2020</b> , 6, 1901256	6.4	9
281	Tin and Tin Compound Materials as Anodes in Lithium-Ion and Sodium-Ion Batteries: A Review. <b>2020</b> , 8, 141		25
280	Programmable transition metal dichalcogenide homojunctions controlled by nonvolatile ferroelectric domains. <b>2020</b> , 3, 43-50		98
279	van der Waals Integrated Devices Based on Nanomembranes of 3D Materials. <b>2020</b> , 20, 1410-1416		10
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276	Van der Waals Heterostructures with Tunable Tunneling Behavior Enabled by MoO <sub>3</sub> Surface Functionalization. <b>2020</b> , 8, 1901867		5
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274	An asymmetric hot carrier tunneling van der Waals heterostructure for multibit optoelectronic memory. <b>2020</b> , 7, 1331-1340		19
273	Controlled nanostructures and simultaneous passivation of black phosphorus (phosphorene) with Nafion. <b>2020</b> , 35, 141-152		5
272	Gate-Modulated Ultrasensitive Visible and Near-Infrared Photodetection of Oxygen Plasma-Treated WSe Lateral pn-Homojunctions. <b>2020</b> , 12, 23261-23271		19
271	A black Phosphorus/BiVO <sub>4</sub> (010) heterostructure for promising photocatalytic performance: First-principles study. <b>2020</b> , 143, 109466		10

270	P-type laser-doped WSe/MoTe van der Waals heterostructure photodetector. <b>2020</b> , 31, 295201		12
269	2D Material Optoelectronics for Information Functional Device Applications: Status and Challenges. <b>2020</b> , 7, 2000058		84
268	The photovoltaic and photoconductive photodetector based on GeSe/2D semiconductor van der Waals heterostructure. <b>2020</b> , 116, 141101		16
267	Van der Waals heterostructures of MoS <sub>2</sub> and Janus MoSSe monolayers on graphitic boron-carbon-nitride (BC <sub>3</sub> , C <sub>3</sub> N <sub>4</sub> , C <sub>3</sub> N <sub>3</sub> and C <sub>4</sub> N <sub>3</sub> ) nanosheets: a first-principles study. <b>2020</b> , 53, 355106		50
266	Strain, electric-field and functionalization induced widely tunable electronic properties in MoS/BC <sub>3</sub> , C <sub>3</sub> N <sub>4</sub> and [Formula: see text] van der Waals heterostructures. <b>2020</b> , 31, 295202		34
265	First-Principles Study of Strain Modulation in S <sub>3</sub> P <sub>2</sub> /Black Phosphorene vdW Heterostructured Nanosheets for Flexible Electronics. <b>2020</b> , 3, 4407-4417		7
264	Emerging pnictogen-based 2D semiconductors: sensing and electronic devices. <i>Nanoscale</i> , <b>2020</b> , 12, 10430-10445		15
263	Strain-tunable photogalvanic effect in phosphorene. <b>2020</b> , 24, 101154		0
262	Nanoscale Interfaces of Janus Monolayers of Transition Metal Dichalcogenides for 2D Photovoltaic and Piezoelectric Applications. <b>2020</b> , 124, 10385-10397		50
261	Magnetic modification of transition-metal-atom-adsorbed blue phosphorus monolayer: A first-principles study. <b>2020</b> , 129, 47003		
260	Staggered band offset induced high performance opto-electronic devices: Atomically thin vertically stacked GaSe-SnS <sub>2</sub> van der Waals p-n heterostructures. <i>Applied Surface Science</i> , <b>2021</b> , 535, 147480	6.7	6
259	Avalanche photodetectors based on two-dimensional layered materials. <i>Nano Research</i> , <b>2021</b> , 14, 1878-1888		15
258	Interlayer angle-dependent electronic structure and optoelectronic properties of BP-MoS <sub>2</sub> heterostructure: A first principle study. <b>2021</b> , 186, 110056		3
257	Monolayer Mo <sub>2</sub> B: A non-magnetic metal and potential application as anode material for ion batteries and catalyst for hydrogen evolution. <i>Applied Surface Science</i> , <b>2021</b> , 538, 148026	6.7	3
256	Protecting black phosphorus with selectively adsorbed graphene quantum dot layers. <i>Applied Surface Science</i> , <b>2021</b> , 538, 148089	6.7	1
255	Interfacial electronic coupling and band alignment of P3HT and exfoliated black phosphorous van der Waals heterojunctions. <i>Applied Surface Science</i> , <b>2021</b> , 541, 148455	6.7	2
254	The Art of Constructing Black Phosphorus Nanosheet Based Heterostructures: From 2D to 3D. <b>2021</b> , 33, e2005254		16
253	Single nanoflake-based PtSe <sub>2</sub> pB junction (in-plane) formed by optical excitation of point defects in BN for ultrafast switching photodiodes. <i>Journal of Materials Chemistry C</i> , <b>2021</b> , 9, 199-207	7.1	14

252	Self-Driven WSe <sub>2</sub> /Bi <sub>2</sub> O <sub>2</sub> Se Van der Waals Heterostructure Photodetectors with High Light On/Off Ratio and Fast Response. <b>2021</b> , 31, 2008351		49
251	Ambipolar 2D Semiconductors and Emerging Device Applications.. <b>2021</b> , 5, e2000837		12
250	Application of two-dimensional materials as anodes for rechargeable metal-ion batteries: A comprehensive perspective from density functional theory simulations. <b>2021</b> , 35, 203-282		23
249	Wafer-scale vertical van der Waals heterostructures. <b>2021</b> , 3, 3-21		48
248	Gate tunable self-powered few-layer black phosphorus broadband photodetector. <b>2021</b> , 23, 399-404		1
247	Band Alignment Engineering in Two-Dimensional Transition Metal Dichalcogenide-Based Heterostructures for Photodetectors. <b>2021</b> , 2, 2000136		50
246	Recent Advances in Electrochemical Water Splitting and Reduction of CO <sub>2</sub> into Green Fuels on 2D Phosphorene-Based Catalyst. <b>2021</b> , 9, 2000741		4
245	Emerging low-dimensional materials for mid-infrared detection. <i>Nano Research</i> , <b>2021</b> , 14, 1863-1877	10	7
244	Plasmon-Enhanced Photovoltaic Characteristics of Black Phosphorus-MoS <sub>2</sub> Heterojunction. <b>2021</b> , 2, 41-51		2
243	Photodetectors based on homojunctions of transition metal dichalcogenides. <b>2021</b> , 70, 177301-177301		1
242	Recent advances in 2D black phosphorus based materials for gas sensing applications. <i>Journal of Materials Chemistry C</i> , <b>2021</b> , 9, 3773-3794	7.1	20
241	A van der Waals heterostructure of MoS <sub>2</sub> /MoSi <sub>2</sub> N <sub>4</sub> : a first-principles study. <b>2021</b> , 45, 8291-8296		20
240	Atomically Controlled Two-Dimensional Heterostructures: Synthesis, Characterization and Applications. <b>2021</b> , 201-235		
239	Charge transfer doping with an organic layer to achieve a high-performance p-type WSe <sub>2</sub> transistor. <i>Journal of Materials Chemistry C</i> , <b>2021</b> , 9, 9592-9598	7.1	3
238	Emerging beyond-graphene elemental 2D materials for energy and catalysis applications. <b>2021</b> , 50, 10983-11036		10
237	Modulation of MoTe <sub>2</sub> /MoS <sub>2</sub> van der Waals heterojunctions for multifunctional devices using NO plasma with an opposite doping effect. <i>Nanoscale</i> , <b>2021</b> , 13, 7851-7860	7.7	2
236	Photogating effect in two-dimensional photodetectors. <b>2021</b> , 70, 027801-027801		3
235	Controllable preparation and photoelectric applications of two-dimensional in-plane and van der Waals heterostructures. <b>2021</b> , 70, 027901-027901		5



234	Solution-Processable Carbon and Graphene Quantum Dots Photodetectors. <b>2021</b> , 157-214		
233	In-plane ferroelectricity in few-layered GeS and its van der Waals ferroelectric diodes. <i>Nanoscale</i> , <b>2021</b> , 13, 16122-16130	7.7	3
232	Functional two-dimensional black phosphorus nanostructures towards next-generation devices.		16
231	Fast and high photoresponsivity gallium telluride/hafnium selenide van der Waals heterostructure photodiode. <i>Journal of Materials Chemistry C</i> , <b>2021</b> , 9, 7110-7118	7.1	5
230	Laser-assisted two dimensional material electronic and optoelectronic devices. <i>Journal of Materials Chemistry C</i> , <b>2021</b> , 9, 2599-2619	7.1	6
229	A comparative study of electrical and opto-electrical properties of a few-layer p-WSe/n-WSe heterojunction diode on SiO and h-BN substrates.. <b>2021</b> , 11, 17901-17909		1
228	Chemical functionalization of 2D black phosphorus. <b>2021</b> , 3, 231-251		12
227	A review on mechanisms and recent developments in p-n heterojunctions of 2D materials for gas sensing applications. <b>2021</b> , 56, 9575-9604		22
226	A first-principles study on zigzag phosphorene nanoribbons terminated by transition metal atoms*. <b>2021</b> , 30, 027305		
225	Van der Waals Heterostructures by Design: From 1D and 2D to 3D. <b>2021</b> , 4, 552-581		19
224	Light-Matter Interaction Enhancement in Anisotropic 2D Black Phosphorus via Polarization-Tailoring Nano-Optics. <b>2021</b> , 8, 1120-1128		9
223	Highly Sensitive, Ultrafast, and Broadband Photo-Detecting Field-Effect Transistor with Transition-Metal Dichalcogenide van der Waals Heterostructures of MoTe and PdSe. <b>2021</b> , 8, e2003713		21
222	Theoretical Study on Tuning Band Gap and Electronic Properties of Atomically Thin Nanostructured MoS/Metal Cluster Heterostructures. <b>2021</b> , 6, 6623-6628		2
221	Properties and photodetector applications of two-dimensional black arsenic phosphorus and black phosphorus. <b>2021</b> , 64, 1		13
220	An Insightful Picture of Nonlinear Photonics in 2D Materials and their Applications: Recent Advances and Future Prospects. <b>2021</b> , 9, 2001671		2
219	Recent progress in emerging 2D layered materials for organic solar cells. <b>2021</b> , 218, 621-638		3
218	Screening, Friedel oscillations, RKKY interaction, and Drude transport in anisotropic two-dimensional systems. <b>2021</b> , 103,		0
217	Probing the Laser Ablation of Black Phosphorus by Raman Spectroscopy. <b>2021</b> , 125, 8704-8711		0



216	Band Structure Engineering of Black Phosphorus/Graphene/MoS <sub>2</sub> van der Waals Heterojunctions for Photovoltaic and Optoelectronic Device Application. <b>2021</b> , 1865, 022021		1
215	Band alignment in SiC-based one-dimensional van der Waals homojunctions.		1
214	Metal-free red phosphorus-black phosphorus/carbon nanotubes heterostructured electrocatalyst for efficient oxygen evolution reaction. <b>2021</b> , 24, 100624		3
213	Recent Progress in Two-dimensional Nanomaterials Following Graphene for Improving Fire Safety of Polymer (Nano)composites. <b>2021</b> , 39, 935-956		9
212	Electronic and transport properties of GaAs/InSe van der Waals heterostructure. <i>Applied Surface Science</i> , <b>2021</b> , 547, 149174	6.7	11
211	Van der Waals Integration Based on Two-Dimensional Materials for High-Performance Infrared Photodetectors. <b>2021</b> , 31, 2103106		31
210	Black Phosphorus-Molybdenum Disulfide Hetero-Junctions Formed with Ink-Jet Printing for Potential Solar Cell Applications with Indium-Tin-Oxide. <b>2021</b> , 11, 560		3
209	Bandgap Modulation in BP Field Effect Transistor and Its Applications. <i>Advanced Electronic Materials</i> , <b>2021</b> , 7, 2100228	6.4	0
208	Predicting the energetic stabilization of Janus-MoSSe/AlN heterostructures: A DFT study. <b>2021</b> , 771, 138465		2
207	Nanohybrid Photodetectors. <b>2021</b> , 2, 2100015		3
206	Development of photovoltaic solar cells based on heterostructure of layered materials: challenges and opportunities. <b>2021</b> , 4, 881-900		2
205	Gate-Tunable Negative Differential Resistance Behaviors in a hBN-Encapsulated BP-MoS Heterojunction. <b>2021</b> , 13, 26161-26169		7
204	Molecular Doping of 2D Indium Selenide for Ultrahigh Performance and Low-Power Consumption Broadband Photodetectors. <b>2021</b> , 31, 2103353		6
203	1D p/n Junction Electronic and Optoelectronic Devices from Transition Metal Dichalcogenide Lateral Heterostructures Grown by One-Pot Chemical Vapor Deposition Synthesis. <b>2021</b> , 31, 2101086		7
202	Direct-Writing of 2D Diodes by Focused Ion Beams. <b>2021</b> , 31, 2102708		3
201	Preparation of black phosphorus quantum dots and the surface decoration effect on the monolayer MoS <sub>2</sub> photodetectors. <b>2021</b> , 772, 138571		2
200	CO oxidation on atomic nickel/phosphorene nanosheet: An efficient single-atom catalyst. <b>2021</b> , 510, 111626		0
199	Local-Field-Dependent Nonlinear Optical Absorption of Black Phosphorus Nanoflakes Hybridized by Silver Nanoparticles. <b>2021</b> , 125, 15448-15457		5

198	Applications of 2D-Layered Palladium Diselenide and Its van der Waals Heterostructures in Electronics and Optoelectronics. <b>2021</b> , 13, 143		18
197	High detectivity and responsivity in black phosphorus/SnS <sub>2</sub> heterostructure with broken-gap energy band alignment. <b>2021</b> , 60, 065003		2
196	Wafer-Scale Van der Waals Assembly of Free-Standing Near Atom Thickness Hetero-Membranes for Flexible Photo-Detectors. <i>Advanced Electronic Materials</i> , <b>2021</b> , 7, 2100395	6.4	1
195	Dimensionality-Inhibited Chemical Doping in Two-Dimensional Semiconductors: The Phosphorene and MoS from Charge-Correction Method. <b>2021</b> , 21, 6711-6717		2
194	Black Phosphorus Nanoflakes Vertically Stacked on MoS <sub>2</sub> Nanoflakes as Heterostructures for Photodetection. <b>2021</b> , 4, 6928-6935		7
193	Effect of edge contact on electronic transport in lateral Borophene/WTe <sub>2</sub> /Borophene heterojunctions. <b>2021</b> , 195, 110502		0
192	Force-constant model for the vibrational modes in black-phosphorene and phosphorene nanoribbons (PNRs). <b>2021</b> , 132, 114757		0
191	Giant Photogalvanic effect in Janus monolayer In <sub>2</sub> SSe. <b>2021</b> , 492, 126945		0
190	Self-Powered Multicolor Broadband Photodetector Based on GaSe/WSe <sub>2</sub> /WSe <sub>2</sub> /BP Van Der Waals Heterostructure. <b>2021</b> , 68, 3881-3886		0
189	Black phosphorus junctions and their electrical and optoelectronic applications. <b>2021</b> , 42, 081001		5
188	Actively variable-spectrum optoelectronics with black phosphorus. <b>2021</b> , 596, 232-237		28
187	Characterization of Jet nebulizer spray pyrolysis coated MoS <sub>2</sub> thin films and fabrication of p-Si/n-MoS <sub>2</sub> junction diodes for optoelectronic application. <b>2021</b> , 130, 108701		5
186	Recent progress on black phosphorus quantum dots for full-spectrum solar-to-chemical energy conversion. <b>2021</b> , 39, 101183		12
185	Modulated electronic and optical properties of bilayer/trilayer Blue Phosphorene/MoX <sub>2</sub> (X=S, Se) van der Waals heterostructures. <i>Surfaces and Interfaces</i> , <b>2021</b> , 25, 101228	4.1	1
184	Carbon-Based Heterojunction Broadband Photodetectors. <b>2022</b> , 91-129		
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