

Gwan-Hyung Lee

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104
papers

11,662
citations

34
h-index

107
g-index

115
ext. papers

13,345
ext. citations

9.9
avg, IF

6.13
L-index

#	Paper	IF	Citations
104	Tightly bound trions in monolayer MoS ₂ . <i>Nature Materials</i> , 2013 , 12, 207-11	27	1878
103	Atomically thin p-n junctions with van der Waals heterointerfaces. <i>Nature Nanotechnology</i> , 2014 , 9, 676-88.7	28.7	1598
102	Grains and grain boundaries in highly crystalline monolayer molybdenum disulphide. <i>Nature Materials</i> , 2013 , 12, 554-61	27	1590
101	Multi-terminal transport measurements of MoS ₂ using a van der Waals heterostructure device platform. <i>Nature Nanotechnology</i> , 2015 , 10, 534-40	28.7	868
100	Flexible and transparent MoS ₂ field-effect transistors on hexagonal boron nitride-graphene heterostructures. <i>ACS Nano</i> , 2013 , 7, 7931-6	16.7	800
99	High-strength chemical-vapor-deposited graphene and grain boundaries. <i>Science</i> , 2013 , 340, 1073-6	33.3	661
98	Controlled charge trapping by molybdenum disulphide and graphene in ultrathin heterostructured memory devices. <i>Nature Communications</i> , 2013 , 4, 1624	17.4	504
97	Effect of defects on the intrinsic strength and stiffness of graphene. <i>Nature Communications</i> , 2014 , 5, 3186	17.4	435
96	Electron tunneling through atomically flat and ultrathin hexagonal boron nitride. <i>Applied Physics Letters</i> , 2011 , 99, 243114	3.4	348
95	Highly Stable, Dual-Gated MoS ₂ Transistors Encapsulated by Hexagonal Boron Nitride with Gate-Controllable Contact, Resistance, and Threshold Voltage. <i>ACS Nano</i> , 2015 , 9, 7019-26	16.7	256
94	Graphene mechanical oscillators with tunable frequency. <i>Nature Nanotechnology</i> , 2013 , 8, 923-7	28.7	196
93	Measurement of Lateral and Interfacial Thermal Conductivity of Single- and Bilayer MoS ₂ and MoSe ₂ Using Refined Optothermal Raman Technique. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 25923-9	9.5	195
92	Graphene based heterostructures. <i>Solid State Communications</i> , 2012 , 152, 1275-1282	1.6	158
91	Effect of surface morphology on friction of graphene on various substrates. <i>Nanoscale</i> , 2013 , 5, 3063-9	7.7	124
90	Tunable Electrical and Optical Characteristics in Monolayer Graphene and Few-Layer MoS ₂ Heterostructure Devices. <i>Nano Letters</i> , 2015 , 15, 5017-24	11.5	122
89	Thickness-dependent Schottky barrier height of MoS field-effect transistors. <i>Nanoscale</i> , 2017 , 9, 6151-6157	15.7	88
88	Homogeneous 2D MoTe p-n Junctions and CMOS Inverters formed by Atomic-Layer-Deposition-Induced Doping. <i>Advanced Materials</i> , 2017 , 29, 1701798	24	88

87	Inking elastomeric stamps with micro-patterned, single layer graphene to create high-performance OFETs. <i>Advanced Materials</i> , 2011 , 23, 3531-5	24	87
86	Two-Dimensional Semiconductor Optoelectronics Based on van der Waals Heterostructures. <i>Nanomaterials</i> , 2016 , 6,	5.4	79
85	Effect of local environment and Sm ³⁺ -codoping on the luminescence properties in the Eu ³⁺ -doped potassium tungstate phosphor for white LEDs. <i>Journal of Luminescence</i> , 2008 , 128, 1922-1926	3.8	73
84	2D semiconducting materials for electronic and optoelectronic applications: potential and challenge. <i>2D Materials</i> , 2020 , 7, 022003	5.9	73
83	Sintering of nano-sized WCo powders produced by a gas reduction carburization process. <i>Journal of Alloys and Compounds</i> , 2006 , 419, 281-289	5.7	64
82	Organic Field Effect Transistors Based on Graphene and Hexagonal Boron Nitride Heterostructures. <i>Advanced Functional Materials</i> , 2014 , 24, 5157-5163	15.6	57
81	Growth and Phase Transformation of Nanometer-Sized Titanium Oxide Powders Produced by the Precipitation Method. <i>Journal of the American Ceramic Society</i> , 2004 , 87, 473-479	3.8	57
80	Mechanical properties of two-dimensional materials and their applications. <i>Journal Physics D: Applied Physics</i> , 2019 , 52, 083001	3	53
79	Heterostructures based on inorganic and organic van der Waals systems. <i>APL Materials</i> , 2014 , 2, 092511	5.7	52
78	Electrically integrated SU-8 clamped graphene drum resonators for strain engineering. <i>Applied Physics Letters</i> , 2013 , 102, 153101	3.4	51
77	Gate-Tunable Hole and Electron Carrier Transport in Atomically Thin Dual-Channel WSe /MoS Heterostructure for Ambipolar Field-Effect Transistors. <i>Advanced Materials</i> , 2016 , 28, 9519-9525	24	49
76	Horizontal-to-Vertical Transition of 2D Layer Orientation in Low-Temperature Chemical Vapor Deposition-Grown PtSe and Its Influences on Electrical Properties and Device Applications. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 13598-13607	9.5	44
75	Artificial Synaptic Emulators Based on MoS Flash Memory Devices with Double Floating Gates. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 31480-31487	9.5	44
74	Multifunctional Two-Dimensional PtSe-Layer Kirigami Conductors with 2000% Stretchability and Metallic-to-Semiconducting Tunability. <i>Nano Letters</i> , 2019 , 19, 7598-7607	11.5	41
73	An aptameric graphene nanosensor for label-free detection of small-molecule biomarkers. <i>Biosensors and Bioelectronics</i> , 2015 , 71, 222-229	11.8	41
72	Noble metal-coated MoS nanofilms with vertically-aligned 2D layers for visible light-driven photocatalytic degradation of emerging water contaminants. <i>Scientific Reports</i> , 2017 , 7, 14944	4.9	39
71	Studies in crystal structure and luminescence properties of Eu ³⁺ -doped metal tungstate phosphors for white LEDs. <i>Journal of Luminescence</i> , 2011 , 131, 2606-2611	3.8	39
70	Effective Separation of CO Using Metal-Incorporated rGO Membranes. <i>Advanced Materials</i> , 2020 , 32, e1907580	24	34

69	Tuning the thickness of black phosphorus via ion bombardment-free plasma etching for device performance improvement. <i>Journal of Materials Chemistry C</i> , 2016 , 4, 6234-6239	7.1	34
68	Laser-induced superhydrophobic grid patterns on PDMS for droplet arrays formation. <i>Applied Surface Science</i> , 2017 , 396, 359-365	6.7	34
67	Atomically precise graphene etch stops for three dimensional integrated systems from two dimensional material heterostructures. <i>Nature Communications</i> , 2018 , 9, 3988	17.4	33
66	Thickness-Independent Semiconducting-to-Metallic Conversion in Wafer-Scale Two-Dimensional PtSe Layers by Plasma-Driven Chalcogen Defect Engineering. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 14341-14351	9.5	29
65	Lattice Strain Formation through Spin-Coupled Shells of MoS2 on Mo2C for Bifunctional Oxygen Reduction and Oxygen Evolution Reaction Electrocatalysts. <i>Advanced Materials Interfaces</i> , 2019 , 6, 1900948	4.6	28
64	Hydrogen generation via photoelectrochemical water splitting using chemically exfoliated MoS2 layers. <i>AIP Advances</i> , 2016 , 6, 015315	1.5	28
63	Solid-solution red phosphors for white LEDs. <i>Journal of Luminescence</i> , 2011 , 131, 2582-2588	3.8	26
62	Electrically Conducting and Mechanically Strong Graphene-Polylactic Acid Composites for 3D Printing. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 11841-11848	9.5	26
61	Blu-ray based optomagnetic aptasensor for detection of small molecules. <i>Biosensors and Bioelectronics</i> , 2016 , 75, 396-403	11.8	25
60	Ferroelectric-Polymer-Enabled Contactless Electric Power Generation in Triboelectric Nanogenerators. <i>Advanced Functional Materials</i> , 2019 , 29, 1905816	15.6	24
59	Epitaxially Self-Assembled Alkane Layers for Graphene Electronics. <i>Advanced Materials</i> , 2017 , 29, 1603925	2.1	21
58	Monolithic Interface Contact Engineering to Boost Optoelectronic Performances of 2D Semiconductor Photovoltaic Heterojunctions. <i>Nano Letters</i> , 2020 , 20, 2443-2451	11.5	21
57	Two-Dimensional Near-Atom-Thickness Materials for Emerging Neuromorphic Devices and Applications. <i>IScience</i> , 2020 , 23, 101676	6.1	21
56	van der Waals epitaxial growth of single crystal α -MoO ₃ layers on layered materials growth templates. <i>2D Materials</i> , 2019 , 6, 015016	5.9	21
55	Ethanol-CVD Growth of Sub-mm Single-Crystal Graphene on Flat Cu Surfaces. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 28830-28838	3.8	19
54	Atomic scale study of black phosphorus degradation.. <i>RSC Advances</i> , 2019 , 10, 350-355	3.7	18
53	In situ thickness control of black phosphorus field-effect transistors via ozone treatment. <i>Nano Research</i> , 2016 , 9, 3056-3065	10	17
52	Artificial Neuron and Synapse Devices Based on 2D Materials. <i>Small</i> , 2021 , 17, e2100640	11	17

51	Direct observation of grain boundaries in chemical vapor deposited graphene. <i>Carbon</i> , 2017 , 115, 147-153	3.4	16
50	Graphene metallization of high-stress silicon nitride resonators for electrical integration. <i>Nano Letters</i> , 2013 , 13, 4275-9	11.5	16
49	Microwave-welded single-walled carbon nanotubes as suitable electrodes for triboelectric energy harvesting from biomaterials and bioproducts. <i>Nano Energy</i> , 2019 , 56, 338-346	17.1	16
48	Single-Crystalline Nanobelts Composed of Transition Metal Ditellurides. <i>Advanced Materials</i> , 2018 , 30, e1707260	24	15
47	High-performance monolayer MoS ₂ field-effect transistor with large-scale nitrogen-doped graphene electrodes for Ohmic contact. <i>Applied Physics Letters</i> , 2019 , 115, 012104	3.4	14
46	Recent Progresses in the Growth of Two-dimensional Transition Metal Dichalcogenides. <i>Journal of the Korean Ceramic Society</i> , 2019 , 56, 24-36	2.2	14
45	All-2D ReS transistors with split gates for logic circuitry. <i>Scientific Reports</i> , 2019 , 9, 10354	4.9	13
44	TEM observation of growth and phase transformation in nanometer-sized titanium oxide powder. <i>Journal of Materials Science</i> , 2011 , 46, 1780-1788	4.3	13
43	Effect of Cryomilling on Particle Size and Microstrain in a WC-Co Alloy. <i>Materials Transactions</i> , 2005 , 46, 105-110	1.3	13
42	Growth of ultrafine Ti(CN) particles in Ti(CN)/Ni cermets. <i>Scripta Materialia</i> , 2007 , 56, 133-136	5.6	11
41	Role of flux in the production process of red phosphors for white LEDs. <i>Journal of Materials Science</i> , 2008 , 43, 6109-6115	4.3	11
40	Tunable Wettability of Graphene through Nondestructive Hydrogenation and Wettability-Based Patterning for Bioapplications. <i>Nano Letters</i> , 2020 , 20, 5625-5631	11.5	11
39	Processing Issues for Cryomilled WC-Co Nanopowders. <i>Materials Transactions</i> , 2003 , 44, 1935-1941	1.3	10
38	A Controlled Carburization Process to Obtain Graphene/3C ₂ Composites. <i>Advanced Materials Interfaces</i> , 2018 , 5, 1800599	4.6	10
37	Recovery of the Pristine Surface of Black Phosphorus by Water Rinsing and Its Device Application. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 21382-21389	9.5	9
36	Tailoring Surface Properties via Functionalized Hydrofluorinated Graphene Compounds. <i>Advanced Materials</i> , 2019 , 31, e1903424	24	9
35	Thickness-Insensitive Properties of β -MoO ₃ Nanosheets by Weak Interlayer Coupling. <i>Nano Letters</i> , 2019 , 19, 8868-8876	11.5	9
34	Synthesis of Nano-Sized WC-Co Powders by Reduction-Carburization Process. <i>Materials Transactions</i> , 2001 , 42, 1575-1581	1.3	9

33	Interactions between Primary Neurons and Graphene Films with Different Structure and Electrical Conductivity. <i>Advanced Functional Materials</i> , 2021 , 31, 2005300	15.6	9
32	Highly flexible graphene nanoplatelet-polydimethylsiloxane strain sensors with proximity-sensing capability. <i>Materials Research Express</i> , 2020 , 7, 045603	1.7	8
31	Enhanced Photoluminescence of Multiple Two-Dimensional van der Waals Heterostructures Fabricated by Layer-by-Layer Oxidation of MoS. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 1245-1252	9.5	8
30	Large-Scale Self-Limiting Synthesis of Monolayer MoS ₂ via Proximity Evaporation from Mo Films. <i>Crystal Growth and Design</i> , 2020 , 20, 2698-2705	3.5	7
29	Rolling up two-dimensional sheets into nanoscrolls. <i>FlatChem</i> , 2018 , 7, 26-33	5.1	7
28	Effect of pH and Lattice Distortion on the Luminescence of (Y,Gd)BO ₃ :Eu ³⁺ Phosphor Prepared by the Coprecipitation Method. <i>Journal of the Electrochemical Society</i> , 2006 , 153, H105	3.9	7
27	Scaling and mechanism of droplet array formation on a laser-ablated superhydrophobic grid. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2018 , 547, 49-55	5.1	6
26	Quantitative analysis of improved bending fracture behavior of large-scale graphene monolayer-intervened flexible oxide thin films. <i>Journal of Materials Chemistry C</i> , 2018 , 6, 6125-6131	7.1	6
25	Phonon-assisted carrier transport through a lattice-mismatched interface. <i>NPG Asia Materials</i> , 2019 , 11,	10.3	4
24	Vertically grown nanowire crystals of dibenzotetrathienocoronene (DBTTC) on large-area graphene. <i>RSC Advances</i> , 2016 , 6, 59582-59589	3.7	4
23	Multioperation-Mode Light-Emitting Field-Effect Transistors Based on van der Waals Heterostructure. <i>Advanced Materials</i> , 2020 , 32, e2003567	24	4
22	Ambipolar Memristive Phenomenon in Large-Scale, Few-Layered MoO ₃ Recrystallized Films. <i>Advanced Materials Interfaces</i> , 2019 , 6, 1801591	4.6	4
21	Tailoring Single- and Double-Sided Fluorination of Bilayer Graphene via Substrate Interactions. <i>Nano Letters</i> , 2021 , 21, 891-898	11.5	4
20	Hydrogenated Graphene Improves Neuronal Network Maturation and Excitatory Transmission. <i>Advanced Biology</i> , 2021 , 5, e2000177		4
19	Quasi-static secondary flow regions formed by microfluidic contraction flows of wormlike micellar solutions. <i>Physics of Fluids</i> , 2021 , 33, 093112	4.4	4
18	Adjacent assembly of self-assembled monolayers for the construction of selective bio-platforms. <i>Sensors and Actuators B: Chemical</i> , 2011 , 159, 75-81	8.5	3
17	Single-Crystalline Metallic Films Induced by van der Waals Epitaxy on Black Phosphorus. <i>Chemistry of Materials</i> , 2021 , 33, 3593-3601	9.6	3
16	Evolution of defect formation during atomically precise desulfurization of monolayer MoS ₂ . <i>Communications Materials</i> , 2021 , 2,	6	3

15	Anomalous Dimensionality-Driven Phase Transition of MoTe ₂ in Van der Waals Heterostructure. <i>Advanced Functional Materials</i> , 2107376	15.6	3
14	Atomic-layer-confined multiple quantum wells enabled by monolithic bandgap engineering of transition metal dichalcogenides. <i>Science Advances</i> , 2021, 7,	14.3	2
13	Tailored Hydrogen-Free Carbon Films by Tuning the sp ² /sp ³ Configuration. <i>ACS Applied Electronic Materials</i> , 2021, 3, 1771-1779	4	2
12	Modulation of optical and electrical properties in hexagonal boron nitride by defects induced via oxygen plasma treatment. <i>2D Materials</i> ,	5.9	2
11	Luminescence of Eu ³⁺ and Sm ³⁺ Doped Potassium Tungstate Phosphor. <i>Journal of Information Display</i> , 2005, 6, 25-29	4.1	1
10	No Tilt Angle Dependence of Grain Boundary on Mechanical Strength of Chemically Deposited Graphene Film. <i>Journal of the Korean Ceramic Society</i> , 2019, 56, 506-512	2.2	1
9	Near ultraviolet light emission in hexagonal boron nitride based van der Waals heterostructures 2019,		1
8	Substrate effect on doping and degradation of graphene. <i>Carbon</i> , 2021, 184, 651-658	10.4	1
7	Band Structure Engineering of WSe ₂ Homo-Junction Interfaces via Thickness Control. <i>Advanced Materials Interfaces</i> , 2022, 9, 2101763	4.6	1
6	Electrical Modulation of Exciton Complexes in Light-Emitting Tunnel Transistors of a van der Waals Heterostructure. <i>ACS Photonics</i> ,	6.3	0
5	18.5: Efficient Tandem White OLED Devices for Medical Display Applications. <i>Digest of Technical Papers SID International Symposium</i> , 2010, 41, 261	0.5	
4	Neuronal Networks: Interactions between Primary Neurons and Graphene Films with Different Structure and Electrical Conductivity (Adv. Funct. Mater. 11/2021). <i>Advanced Functional Materials</i> , 2021, 31, 2170075	15.6	
3	Neuromorphic Devices: Artificial Neuron and Synapse Devices Based on 2D Materials (Small 20/2021). <i>Small</i> , 2021, 17, 2170092	11	
2	Fluorinated Graphene Contacts and Passivation Layer for MoS ₂ Field Effect Transistors. <i>Advanced Electronic Materials</i> , 2101370	6.4	
1	Pulsed Laser Ablation on Polymethylmethacrylate (PMMA) Surfaces for Capillary Driven Flows. <i>Surfaces and Interfaces</i> , 2022, 31, 101989	4.1	