

Deep Jariwala

List of Publications by Citations

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101
papers

12,114
citations

41
h-index

110
g-index

116
ext. papers

14,125
ext. citations

12.2
avg, IF

6.66
L-index

#	Paper	IF	Citations
101	Emerging device applications for semiconducting two-dimensional transition metal dichalcogenides. <i>ACS Nano</i> , 2014 , 8, 1102-20	16.7	1909
100	Atomic layers of hybridized boron nitride and graphene domains. <i>Nature Materials</i> , 2010 , 9, 430-5	27	1764
99	Effective passivation of exfoliated black phosphorus transistors against ambient degradation. <i>Nano Letters</i> , 2014 , 14, 6964-70	11.5	1117
98	Carbon nanomaterials for electronics, optoelectronics, photovoltaics, and sensing. <i>Chemical Society Reviews</i> , 2013 , 42, 2824-60	58.5	941
97	Mixed-dimensional van der Waals heterostructures. <i>Nature Materials</i> , 2017 , 16, 170-181	27	897
96	Covalent functionalization and passivation of exfoliated black phosphorus via aryl diazonium chemistry. <i>Nature Chemistry</i> , 2016 , 8, 597-602	17.6	574
95	Gate-tunable memristive phenomena mediated by grain boundaries in single-layer MoS ₂ . <i>Nature Nanotechnology</i> , 2015 , 10, 403-6	28.7	426
94	Band-like transport in high mobility unencapsulated single-layer MoS ₂ transistors. <i>Applied Physics Letters</i> , 2013 , 102, 173107	3.4	316
93	Gate-tunable carbon nanotube-MoS ₂ heterojunction p-n diode. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 18076-80	11.5	304
92	Hybrid, Gate-Tunable, van der Waals p-n Heterojunctions from Pentacene and MoS ₂ . <i>Nano Letters</i> , 2016 , 16, 497-503	11.5	240
91	Influence of stoichiometry on the optical and electrical properties of chemical vapor deposition derived MoS ₂ . <i>ACS Nano</i> , 2014 , 8, 10551-8	16.7	209
90	Novel Liquid Precursor-Based Facile Synthesis of Large-Area Continuous, Single, and Few-Layer Graphene Films. <i>Chemistry of Materials</i> , 2010 , 22, 3457-3461	9.6	209
89	Low-frequency electronic noise in single-layer MoS ₂ transistors. <i>Nano Letters</i> , 2013 , 13, 4351-5	11.5	188
88	Van der Waals Materials for Atomically-Thin Photovoltaics: Promise and Outlook. <i>ACS Photonics</i> , 2017 , 4, 2962-2970	6.3	175
87	Elucidating the Photoresponse of Ultrathin MoS ₂ Field-Effect Transistors by Scanning Photocurrent Microscopy. <i>Journal of Physical Chemistry Letters</i> , 2013 , 4, 2508-2513	6.4	169
86	High Photovoltaic Quantum Efficiency in Ultrathin van der Waals Heterostructures. <i>ACS Nano</i> , 2017 , 11, 7230-7240	16.7	140
85	Graphene Shape Control by Multistage Cutting and Transfer. <i>Advanced Materials</i> , 2009 , 21, 4487-4491	24	133

84	High efficiency and fast van der Waals hetero-photodiodes with a unilateral depletion region. <i>Nature Communications</i> , 2019 , 10, 4663	17.4	127
83	Near-Unity Absorption in van der Waals Semiconductors for Ultrathin Optoelectronics. <i>Nano Letters</i> , 2016 , 16, 5482-7	11.5	116
82	Investigation of band-offsets at monolayer-multilayer MoS ₂ junctions by scanning photocurrent microscopy. <i>Nano Letters</i> , 2015 , 15, 2278-84	11.5	115
81	Probing Out-of-Plane Charge Transport in Black Phosphorus with Graphene-Contacted Vertical Field-Effect Transistors. <i>Nano Letters</i> , 2016 , 16, 2580-5	11.5	106
80	Open data from the first and second observing runs of Advanced LIGO and Advanced Virgo. <i>SoftwareX</i> , 2021 , 13, 100658	2.7	96
79	Emerging nanofabrication and quantum confinement techniques for 2D materials beyond graphene. <i>Npj 2D Materials and Applications</i> , 2018 , 2,	8.8	82
78	Solution-Processed Dielectrics Based on Thickness-Sorted Two-Dimensional Hexagonal Boron Nitride Nanosheets. <i>Nano Letters</i> , 2015 , 15, 7029-36	11.5	78
77	Field Effect Optoelectronic Modulation of Quantum-Confined Carriers in Black Phosphorus. <i>Nano Letters</i> , 2017 , 17, 78-84	11.5	72
76	Low-Voltage Complementary Electronics from Ion-Gel-Gated Vertical Van der Waals Heterostructures. <i>Advanced Materials</i> , 2016 , 28, 3742-8	24	70
75	Large-area, low-voltage, antiambipolar heterojunctions from solution-processed semiconductors. <i>Nano Letters</i> , 2015 , 15, 416-21	11.5	68
74	Machine Learning in Nanoscience: Big Data at Small Scales. <i>Nano Letters</i> , 2020 , 20, 2-10	11.5	68
73	Materials challenges for the Starshot lightsail. <i>Nature Materials</i> , 2018 , 17, 861-867	27	63
72	Printed indium gallium zinc oxide transistors. Self-assembled nanodielectric effects on low-temperature combustion growth and carrier mobility. <i>ACS Applied Materials & Interfaces</i> , 2013 , 5, 11884-93	9.5	63
71	Ambient-processable high capacitance hafnia-organic self-assembled nanodielectrics. <i>Journal of the American Chemical Society</i> , 2013 , 135, 8926-39	16.4	59
70	Quantitatively enhanced reliability and uniformity of high- κ dielectrics on graphene enabled by self-assembled seeding layers. <i>Nano Letters</i> , 2013 , 13, 1162-7	11.5	57
69	Topological Magnetic-Spin Textures in Two-Dimensional van der Waals CrGeTe. <i>Nano Letters</i> , 2019 , 19, 7859-7865	11.5	56
68	Substrate-directed synthesis of MoS nanocrystals with tunable dimensionality and optical properties. <i>Nature Nanotechnology</i> , 2020 , 15, 29-34	28.7	55
67	Graphene synthesis and band gap opening. <i>Journal of Nanoscience and Nanotechnology</i> , 2011 , 11, 6621-413	41.3	54

66	Layer-by-Layer Assembled 2D Montmorillonite Dielectrics for Solution-Processed Electronics. <i>Advanced Materials</i> , 2016 , 28, 63-8	24	52
65	Emerging photonic architectures in two-dimensional opto-electronics. <i>Chemical Society Reviews</i> , 2018 , 47, 6824-6844	58.5	51
64	Emerging 2D metal oxides and their applications. <i>Materials Today</i> , 2021 , 45, 142-168	21.8	48
63	Roadmap on emerging hardware and technology for machine learning. <i>Nanotechnology</i> , 2021 , 32, 012003	3.4	45
62	Gate-Tunable Semiconductor Heterojunctions from 2D/3D van der Waals Interfaces. <i>Nano Letters</i> , 2020 , 20, 2907-2915	11.5	42
61	Single step synthesis of graphene nanoribbons by catalyst particle size dependent cutting of multiwalled carbon nanotubes. <i>Nanoscale</i> , 2011 , 3, 3876-82	7.7	42
60	Giant Enhancement of Photoluminescence Emission in WS-Two-Dimensional Perovskite Heterostructures. <i>Nano Letters</i> , 2019 , 19, 4852-4860	11.5	41
59	Anomalous insulator-metal transition in boron nitride-graphene hybrid atomic layers. <i>Physical Review B</i> , 2012 , 86,	3.3	41
58	All-sky search for short gravitational-wave bursts in the second Advanced LIGO and Advanced Virgo run. <i>Physical Review D</i> , 2019 , 100,	4.9	39
57	High-field transport and thermal reliability of sorted carbon nanotube network devices. <i>ACS Nano</i> , 2013 , 7, 482-90	16.7	31
56	Hybrid exciton-plasmon-polaritons in van der Waals semiconductor gratings. <i>Nature Communications</i> , 2020 , 11, 3552	17.4	31
55	Anisotropic Quantum Well Electro-Optics in Few-Layer Black Phosphorus. <i>Nano Letters</i> , 2019 , 19, 269-276	6.5	30
54	Atomic-Scale Structural and Chemical Characterization of Hexagonal Boron Nitride Layers Synthesized at the Wafer-Scale with Monolayer Thickness Control. <i>Chemistry of Materials</i> , 2017 , 29, 4700-4707	8.6	29
53	Machine Learning-Enabled Design of Point Defects in 2D Materials for Quantum and Neuromorphic Information Processing. <i>ACS Nano</i> , 2020 , 14, 13406-13417	16.7	28
52	Post-CMOS Compatible Aluminum Scandium Nitride/2D Channel Ferroelectric Field-Effect-Transistor Memory. <i>Nano Letters</i> , 2021 , 21, 3753-3761	11.5	28
51	Engineering Magnetic Phases in Two-Dimensional Non-van der Waals Transition-Metal Oxides. <i>Nano Letters</i> , 2019 , 19, 7793-7800	11.5	26
50	Wafer-scale solution-derived molecular gate dielectrics for low-voltage graphene electronics. <i>Applied Physics Letters</i> , 2014 , 104, 083503	3.4	22
49	Optimization of graphene dry etching conditions via combined microscopic and spectroscopic analysis. <i>Applied Physics Letters</i> , 2013 , 102, 193111	3.4	20

48	Engineering Zero-Dimensional Quantum Confinement in Transition-Metal Dichalcogenide Heterostructures. <i>ACS Nano</i> , 2019 , 13, 8303-8311	16.7	19
47	Determination of Dielectric Functions and Exciton Oscillator Strength of Two-Dimensional Hybrid Perovskites 2021 , 3, 148-159		18
46	Direct visualization of out-of-equilibrium structural transformations in atomically thin chalcogenides. <i>Npj 2D Materials and Applications</i> , 2020 , 4,	8.8	17
45	Nanoscale doping heterogeneity in few-layer WSe ₂ exfoliated onto noble metals revealed by correlated SPM and TERS imaging. <i>2D Materials</i> , 2018 , 5, 035003	5.9	14
44	Sub-Microsecond Polarization Switching in (Al,Sc)N Ferroelectric Capacitors Grown on Complementary Metal Oxide Semiconductor-Compatible Aluminum Electrodes. <i>Physica Status Solidi - Rapid Research Letters</i> , 2021 , 15, 2000575	2.5	14
43	Gate-Tunable Plasmon-Enhanced Photodetection in a Monolayer MoS ₂ Phototransistor with Ultrahigh Photoresponsivity. <i>Nano Letters</i> , 2021 , 21, 3083-3091	11.5	13
42	Aluminum scandium nitride-based metal/ferroelectric/metal diode memory devices with high on/off ratios. <i>Applied Physics Letters</i> , 2021 , 118, 202901	3.4	13
41	Diving below the Spin-down Limit: Constraints on Gravitational Waves from the Energetic Young Pulsar PSR J0537-6910. <i>Astrophysical Journal Letters</i> , 2021 , 913, L27	7.9	13
40	Low-Voltage 2D Material Field-Effect Transistors Enabled by Ion Gel Capacitive Coupling. <i>Chemistry of Materials</i> , 2017 , 29, 4008-4013	9.6	12
39	Dry Transfer of van der Waals Crystals to Noble Metal Surfaces To Enable Characterization of Buried Interfaces. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 38218-38225	9.5	12
38	Solution-Processed Self-Assembled Nanodielectrics on Template-Stripped Metal Substrates. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 26360-6	9.5	12
37	An outlook into the flat land of 2D materials beyond graphene: synthesis, properties and device applications. <i>2D Materials</i> , 2021 , 8, 013001	5.9	12
36	Exciton-Photonics: From Fundamental Science to Applications. <i>ACS Nano</i> , 2021 ,	16.7	12
35	Vacuum ultraviolet radiation effects on two-dimensional MoS ₂ field-effect transistors. <i>Applied Physics Letters</i> , 2017 , 110, 073102	3.4	11
34	Facile and quantitative estimation of strain in nanobubbles with arbitrary symmetry in 2D semiconductors verified using hyperspectral nano-optical imaging. <i>Journal of Chemical Physics</i> , 2020 , 153, 024702	3.9	11
33	Near-field microwave microscopy of high- κ oxides grown on graphene with an organic seeding layer. <i>Applied Physics Letters</i> , 2013 , 103, 243105	3.4	11
32	Light-matter coupling in large-area van der Waals superlattices. <i>Nature Nanotechnology</i> , 2021 ,	28.7	11
31	Hybrid phonon-polaritons at atomically-thin van der Waals heterointerfaces for infrared optical modulation. <i>Optics Express</i> , 2019 , 27, 18585-18600	3.3	10

30	Direct Optoelectronic Imaging of 2D Semiconductor-3D Metal Buried Interfaces. <i>ACS Nano</i> , 2021 , 15, 5618-5630	16.7	10
29	Gate-tunable polariton superlens in 2D/3D heterostructures. <i>Optics Express</i> , 2019 , 27, 18628-18641	3.3	8
28	Radial Spin Texture of the Weyl Fermions in Chiral Tellurium. <i>Physical Review Letters</i> , 2020 , 125, 216402	7.4	8
27	Uncovering topographically hidden features in 2D MoSe ₂ with correlated potential and optical nanoprobes. <i>Npj 2D Materials and Applications</i> , 2020 , 4,	8.8	8
26	Hyperbolic 3D architectures with 2D ceramics. <i>Science</i> , 2019 , 363, 694-695	33.3	8
25	Ferroelectric C-Axis Textured Aluminum Scandium Nitride Thin Films of 100 nm Thickness 2020 ,		7
24	Nanomaterials for Quantum Information Science and Engineering.. <i>Advanced Materials</i> , 2022 , e2109621	24	6
23	Giant Gate-Tunability of Complex Refractive Index in Semiconducting Carbon Nanotubes. <i>ACS Photonics</i> , 2020 , 7, 2896-2905	6.3	6
22	Nanoscale Chemical and Structural Analysis during Scanning/Transmission Electron Microscopy in Liquids. <i>ACS Nano</i> , 2021 , 15, 10228-10240	16.7	6
21	Direct growth of hexagonal boron nitride on non-metallic substrates and its heterostructures with graphene. <i>IScience</i> , 2021 , 24, 103374	6.1	5
20	Self-Hybridized Polaritonic Emission from Layered Perovskites. <i>Nano Letters</i> , 2021 , 21, 6245-6252	11.5	5
19	Opportunities in electrically tunable 2D materials beyond graphene: Recent progress and future outlook. <i>Applied Physics Reviews</i> , 2021 , 8, 041320	17.3	4
18	Band Edge Tailoring in Few-Layer Two-Dimensional Molybdenum Sulfide/Selenide Alloys. <i>Journal of Physical Chemistry C</i> , 2020 , 124, 22893-22902	3.8	4
17	Negative refraction inspired polariton lens in van der Waals lateral heterojunctions. <i>Applied Physics Letters</i> , 2019 , 114, 221101	3.4	3
16	Spatiotemporal Imaging of Thickness-Induced Band-Bending Junctions. <i>Nano Letters</i> , 2021 , 21, 5745-5753	11.5	3
15	Tunable confinement of charges and excitations. <i>Nature Nanotechnology</i> , 2018 , 13, 99-100	28.7	2
14	Transistors: Layer-by-Layer Assembled 2D Montmorillonite Dielectrics for Solution-Processed Electronics (Adv. Mater. 1/2016). <i>Advanced Materials</i> , 2016 , 28, 203-203	24	2
13	Cavity-enhanced linear dichroism in a van der Waals antiferromagnet. <i>Nature Photonics</i> , 2022 , 16, 311-313	33.9	2

12	Development of a Method to Characterize Active Sites in Photocatalysis using operando Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2019 , 25, 1444-1445	0.5	1
11	Relativistic Light Sails Need to Billow.. <i>Nano Letters</i> , 2021 ,	11.5	1
10	Multiscale Photonic Emissivity Engineering for Relativistic Lightsail Thermal Regulation.. <i>Nano Letters</i> , 2022 ,	11.5	1
9	Electrical breakdown strength enhancement in aluminum scandium nitride through a compositionally modulated periodic multilayer structure. <i>Journal of Applied Physics</i> , 2021 , 130, 144101	2.5	1
8	Direct Imaging of Antiferromagnetic Domains and Anomalous Layer-Dependent Mirror Symmetry Breaking in Atomically Thin MnPS ₃ . <i>Physical Review Letters</i> , 2021 , 127, 187201	7.4	1
7	Anomalous Room-Temperature Photoluminescence from Nanostrained MoSe ₂ Monolayers. <i>ACS Photonics</i> , 2021 , 8, 2220-2226	6.3	1
6	Selective vapor sensors with thin-film MoS ₂ -coated optical fibers. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2022 , 40, 032202	2.9	0
5	Non-equilibrium Structural Phase Transformations in Atomically Thin Transition Metal Dichalcogenides. <i>Microscopy and Microanalysis</i> , 2020 , 26, 632-633	0.5	
4	Homochiral Skyrmionic Bubbles in Exfoliated 2D Van Der Waals Cr ₂ Ge ₂ Te ₆ . <i>Microscopy and Microanalysis</i> , 2020 , 26, 2138-2140	0.5	
3	In situ/operando Study of Photoelectrochemistry Using Optical Liquid Cell Microscopy. <i>Microscopy and Microanalysis</i> , 2020 , 26, 2446-2447	0.5	
2	Efficacy of boron nitride encapsulation against plasma-processing of 2D semiconductor layers. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2021 , 39, 032201	2.9	
1	Electron energy loss spectroscopy of sub-10 nm 2D MoS ₂ crystals. <i>Microscopy and Microanalysis</i> , 2021 , 27, 1210-1211	0.5	