Deep Jariwala

List of Publications by Year
in descending order

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		46918	28224
111	16,048	47	105
papers	citations	h-index	g-index

116	116	116	22452
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Emerging Device Applications for Semiconducting Two-Dimensional Transition Metal Dichalcogenides. ACS Nano, 2014, 8, 1102-1120.	7.3	2,307
2	Atomic layers of hybridized boron nitride and graphene domains. Nature Materials, 2010, 9, 430-435.	13.3	2,002
3	Effective Passivation of Exfoliated Black Phosphorus Transistors against Ambient Degradation. Nano Letters, 2014, 14, 6964-6970.	4.5	1,294
4	Mixed-dimensional van der Waals heterostructures. Nature Materials, 2017, 16, 170-181.	13.3	1,220
5	Carbon nanomaterials for electronics, optoelectronics, photovoltaics, and sensing. Chemical Society Reviews, 2013, 42, 2824-2860.	18.7	1,105
6	Covalent functionalization and passivation of exfoliated black phosphorus via aryl diazonium chemistry. Nature Chemistry, 2016, 8, 597-602.	6.6	687
7	Gate-tunable memristive phenomena mediated by grain boundaries in single-layer MoS2. Nature Nanotechnology, 2015, 10, 403-406.	15.6	564
8	Gate-tunable carbon nanotubeâ€“MoS ₂ heterojunction p-n diode. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 18076-18080.	3.3	373
9	Band-like transport in high mobility unencapsulated single-layer MoS2 transistors. Applied Physics Letters, 2013, 102, .	1.5	359
10	Hybrid, Gate-Tunable, van der Waals pâ€“n Heterojunctions from Pentacene and MoS₂. Nano Letters, 2016, 16, 497-503.	4.5	295
11	Influence of Stoichiometry on the Optical and Electrical Properties of Chemical Vapor Deposition Derived MoS₂. ACS Nano, 2014, 8, 10551-10558.	7.3	281
12	Open data from the first and second observing runs of Advanced LIGO and Advanced Virgo. SoftwareX, 2021, 13, 100658.	1.2	275
13	Van der Waals Materials for Atomically-Thin Photovoltaics: Promise and Outlook. ACS Photonics, 2017, 4, 2962-2970.	3.2	241
14	Novel Liquid Precursor-Based Facile Synthesis of Large-Area Continuous, Single, and Few-Layer Graphene Films. Chemistry of Materials, 2010, 22, 3457-3461.	3.2	239
15	Low-Frequency Electronic Noise in Single-Layer MoS₂ Transistors. Nano Letters, 2013, 13, 4351-4355.	4.5	221
16	High efficiency and fast van der Waals hetero-photodiodes with a unilateral depletion region. Nature Communications, 2019, 10, 4663.	5.8	213
17	High Photovoltaic Quantum Efficiency in Ultrathin van der Waals Heterostructures. ACS Nano, 2017, 11, 7230-7240.	7.3	193
18	Elucidating the Photoresponse of Ultrathin MoS₂ Field-Effect Transistors by Scanning Photocurrent Microscopy. Journal of Physical Chemistry Letters, 2013, 4, 2508-2513.	2.1	190

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19	Emerging 2D metal oxides and their applications. Materials Today, 2021, 45, 142-168.	8.3	164
20	Near-Unity Absorption in van der Waals Semiconductors for Ultrathin Optoelectronics. Nano Letters, 2016, 16, 5482-5487.	4.5	156
21	Graphene Shape Control by Multistage Cutting and Transfer. Advanced Materials, 2009, 21, 4487-4491.	11.1	149
22	Investigation of Band-Offsets at Monolayerâ€“Multilayer MoS₂ Junctions by Scanning Photocurrent Microscopy. Nano Letters, 2015, 15, 2278-2284.	4.5	141
23	Machine Learning in Nanoscience: Big Data at Small Scales. Nano Letters, 2020, 20, 2-10.	4.5	138
24	Probing Out-of-Plane Charge Transport in Black Phosphorus with Graphene-Contacted Vertical Field-Effect Transistors. Nano Letters, 2016, 16, 2580-2585.	4.5	119
25	Emerging nanofabrication and quantum confinement techniques for 2D materials beyond graphene. Npj 2D Materials and Applications, 2018, 2, .	3.9	117
26	Topological Magnetic-Spin Textures in Two-Dimensional van der Waals Cr₂Ge₂Te₆. Nano Letters, 2019, 19, 7859-7865.	4.5	116
27	Materials challenges for the Starshot lightsail. Nature Materials, 2018, 17, 861-867.	13.3	107
28	Roadmap on emerging hardware and technology for machine learning. Nanotechnology, 2021, 32, 012002.	1.3	104
29	Solution-Processed Dielectrics Based on Thickness-Sorted Two-Dimensional Hexagonal Boron Nitride Nanosheets. Nano Letters, 2015, 15, 7029-7036.	4.5	101
30	Substrate-directed synthesis of MoS2 nanocrystals with tunable dimensionality and optical properties. Nature Nanotechnology, 2020, 15, 29-34.	15.6	94
31	Lowâ€Voltage Complementary Electronics from Ionâ€Gelâ€Gated Vertical Van der Waals Heterostructures. Advanced Materials, 2016, 28, 3742-3748.	11.1	91
32	Hybrid exciton-plasmon-polaritons in van der Waals semiconductor gratings. Nature Communications, 2020, 11, 3552.	5.8	90
33	Field Effect Optoelectronic Modulation of Quantum-Confined Carriers in Black Phosphorus. Nano Letters, 2017, 17, 78-84.	4.5	89
34	Large-Area, Low-Voltage, Antiambipolar Heterojunctions from Solution-Processed Semiconductors. Nano Letters, 2015, 15, 416-421.	4.5	87
35	Post-CMOS Compatible Aluminum Scandium Nitride/2D Channel Ferroelectric Field-Effect-Transistor Memory. Nano Letters, 2021, 21, 3753-3761.	4.5	83
36	Graphene Synthesis and Band Gap Opening. Journal of Nanoscience and Nanotechnology, 2011, 11, 6621-6641.	0.9	79

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37	Machine Learning-Enabled Design of Point Defects in 2D Materials for Quantum and Neuromorphic Information Processing. ACS Nano, 2020, 14, 13406-13417.	7.3	75
38	Layerâ€byâ€Layer Assembled 2D Montmorillonite Dielectrics for Solutionâ€Processed Electronics. Advanced Materials, 2016, 28, 63-68.	11.1	72
39	Giant Enhancement of Photoluminescence Emission in WS₂-Two-Dimensional Perovskite Heterostructures. Nano Letters, 2019, 19, 4852-4860.	4.5	72
40	Emerging photonic architectures in two-dimensional opto-electronics. Chemical Society Reviews, 2018, 47, 6824-6844.	18.7	71
41	Ambient-Processable High Capacitance Hafnia-Organic Self-Assembled Nanodielectrics. Journal of the American Chemical Society, 2013, 135, 8926-8939.	6.6	69
42	Printed Indium Gallium Zinc Oxide Transistors. Self-Assembled Nanodielectric Effects on Low-Temperature Combustion Growth and Carrier Mobility. ACS Applied Materials & Interfaces, 2013, 5, 11884-11893.	4.0	69
43	Gate-Tunable Semiconductor Heterojunctions from 2D/3D van der Waals Interfaces. Nano Letters, 2020, 20, 2907-2915.	4.5	69
44	Gate-Tunable Plasmon-Enhanced Photodetection in a Monolayer MoS₂ Phototransistor with Ultrahigh Photoresponsivity. Nano Letters, 2021, 21, 3083-3091.	4.5	68
45	Quantitatively Enhanced Reliability and Uniformity of High-Î² Dielectrics on Graphene Enabled by Self-Assembled Seeding Layers. Nano Letters, 2013, 13, 1162-1167.	4.5	67
46	All-sky search for short gravitational-wave bursts in the second Advanced LIGO and Advanced Virgo run. Physical Review D, 2019, 100, .	1.6	54
47	Single step synthesis of graphene nanoribbons by catalyst particle size dependent cutting of multiwalled carbon nanotubes. Nanoscale, 2011, 3, 3876.	2.8	51
48	Aluminum scandium nitride-based metalâ€“ferroelectricâ€“metal diode memory devices with high on/off ratios. Applied Physics Letters, 2021, 118, .	1.5	49
49	Lightâ€“matter coupling in large-area van der Waals superlattices. Nature Nanotechnology, 2022, 17, 182-189.	15.6	49
50	Radial Spin Texture of the Weyl Fermions in Chiral Tellurium. Physical Review Letters, 2020, 125, 216402.	2.9	47
51	Determination of Dielectric Functions and Exciton Oscillator Strength of Two-Dimensional Hybrid Perovskites. , 2021, 3, 148-159.		47
52	Excitonâ€“Photonics: From Fundamental Science to Applications. ACS Nano, 2021, 15, 12628-12654.	7.3	47
53	Engineering Magnetic Phases in Two-Dimensional Non-van der Waals Transition-Metal Oxides. Nano Letters, 2019, 19, 7793-7800.	4.5	45
54	Anomalous insulator-metal transition in boron nitride-graphene hybrid atomic layers. Physical Review B, 2012, 86, .	1.1	42

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55	Anisotropic Quantum Well Electro-Optics in Few-Layer Black Phosphorus. Nano Letters, 2019, 19, 269-276.	4.5	40
56	Subâ€Microsecond Polarization Switching in (Al,Sc)N Ferroelectric Capacitors Grown on Complementary Metalâ€“Oxideâ€“Semiconductorâ€Compatible Aluminum Electrodes. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2000575.	1.2	39
57	Atomic-Scale Structural and Chemical Characterization of Hexagonal Boron Nitride Layers Synthesized at the Wafer-Scale with Monolayer Thickness Control. Chemistry of Materials, 2017, 29, 4700-4707.	3.2	36
58	High-Field Transport and Thermal Reliability of Sorted Carbon Nanotube Network Devices. ACS Nano, 2013, 7, 482-490.	7.3	35
59	Direct Optoelectronic Imaging of 2D Semiconductorâ€“3D Metal Buried Interfaces. ACS Nano, 2021, 15, 5618-5630.	7.3	35
60	Diving below the Spin-down Limit: Constraints on Gravitational Waves from the Energetic Young Pulsar PSR J0537-6910. Astrophysical Journal Letters, 2021, 913, L27.	3.0	32
61	An outlook into the flat land of 2D materials beyond graphene: synthesis, properties and device applications. 2D Materials, 2021, 8, 013001.	2.0	32
62	Direct visualization of out-of-equilibrium structural transformations in atomically thin chalcogenides. Npj 2D Materials and Applications, 2020, 4, .	3.9	31
63	Nanoscale Chemical and Structural Analysis during In Situ Scanning/Transmission Electron Microscopy in Liquids. ACS Nano, 2021, 15, 10228-10240.	7.3	29
64	Facile and quantitative estimation of strain in nanobubbles with arbitrary symmetry in 2D semiconductors verified using hyperspectral nano-optical imaging. Journal of Chemical Physics, 2020, 153, 024702.	1.2	27
65	Optimization of graphene dry etching conditions via combined microscopic and spectroscopic analysis. Applied Physics Letters, 2013, 102, 193111.	1.5	26
66	Opportunities in electrically tunable 2D materials beyond graphene: Recent progress and future outlook. Applied Physics Reviews, 2021, 8, .	5.5	26
67	Nanomaterials for Quantum Information Science and Engineering. Advanced Materials, 2023, 35, e2109621.	11.1	25
68	Engineering Zero-Dimensional Quantum Confinement in Transition-Metal Dichalcogenide Heterostructures. ACS Nano, 2019, 13, 8303-8311.	7.3	24
69	Uncovering topographically hidden features in 2D MoSe2 with correlated potential and optical nanoprobes. Npj 2D Materials and Applications, 2020, 4, .	3.9	24
70	Wafer-scale solution-derived molecular gate dielectrics for low-voltage graphene electronics. Applied Physics Letters, 2014, 104, .	1.5	22
71	Nanoscale doping heterogeneity in few-layer WSe ₂ exfoliated onto noble metals revealed by correlated SPM and TERS imaging. 2D Materials, 2018, 5, 035003.	2.0	22
72	High-Efficiency WSe₂ Photovoltaic Devices with Electron-Selective Contacts. ACS Nano, 2022, 16, 8827-8836.	7.3	22

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73	High-Density, Localized Quantum Emitters in Strained 2D Semiconductors. ACS Nano, 2022, 16, 9651-9659.	7.3	21
74	Dry Transfer of van der Waals Crystals to Noble Metal Surfaces To Enable Characterization of Buried Interfaces. ACS Applied Materials & Interfaces, 2019, 11, 38218-38225.	4.0	20
75	Direct Imaging of Antiferromagnetic Domains and Anomalous Layer-Dependent Mirror Symmetry Breaking in Atomically Thin <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>MnPS</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></mml:mrow> Physical Review Letters, 2021, 127, 187201.	2.9	20
76	Cavity-enhanced linear dichroism in a van der Waals antiferromagnet. Nature Photonics, 2022, 16, 311-317.	15.6	20
77	Direct growth of hexagonal boron nitride on non-metallic substrates and its heterostructures with graphene. IScience, 2021, 24, 103374.	1.9	19
78	Ferroelectric C-Axis Textured Aluminum Scandium Nitride Thin Films of 100 nm Thickness. , 2020, , .		18
79	Self-Hybridized Polaritonic Emission from Layered Perovskites. Nano Letters, 2021, 21, 6245-6252.	4.5	18
80	Solution-Processed Self-Assembled Nanodielectrics on Template-Stripped Metal Substrates. ACS Applied Materials & Interfaces, 2015, 7, 26360-26366.	4.0	17
81	Hybrid phonon-polaritons at atomically-thin van der Waals heterointerfaces for infrared optical modulation. Optics Express, 2019, 27, 18585.	1.7	17
82	Vacuum ultraviolet radiation effects on two-dimensional MoS2 field-effect transistors. Applied Physics Letters, 2017, 110, .	1.5	16
83	Hyperbolic 3D architectures with 2D ceramics. Science, 2019, 363, 694-695.	6.0	16
84	Giant Gate-Tunability of Complex Refractive Index in Semiconducting Carbon Nanotubes. ACS Photonics, 2020, 7, 2896-2905.	3.2	16
85	Low-Voltage 2D Material Field-Effect Transistors Enabled by Ion Gel Capacitive Coupling. Chemistry of Materials, 2017, 29, 4008-4013.	3.2	14
86	Anomalous Room-Temperature Photoluminescence from Nanostrained MoSe₂ Monolayers. ACS Photonics, 2021, 8, 2220-2226.	3.2	14
87	Gate-tunable polariton superlens in 2D/3D heterostructures. Optics Express, 2019, 27, 18628.	1.7	14
88	Electrospun Gold Nanoprism/Poly(vinyl alcohol) Nanofibers for Flexible and Free-Standing Surface-Enhanced Raman Scattering Substrates. ACS Applied Nano Materials, 2022, 5, 6650-6658.	2.4	13
89	Near-field microwave microscopy of high-Î¹ oxides grown on graphene with an organic seeding layer. Applied Physics Letters, 2013, 103, .	1.5	12
90	Electrical breakdown strength enhancement in aluminum scandium nitride through a compositionally modulated periodic multilayer structure. Journal of Applied Physics, 2021, 130, .	1.1	11

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91	Band Edge Tailoring in Few-Layer Two-Dimensional Molybdenum Sulfide/Selenide Alloys. Journal of Physical Chemistry C, 2020, 124, 22893-22902.	1.5	9
92	Negative refraction inspired polariton lens in van der Waals lateral heterojunctions. Applied Physics Letters, 2019, 114, 221101.	1.5	8
93	Speeding up Nanoscience and Nanotechnology with Ultrafast Plasmonics. Nano Letters, 2020, 20, 5593-5596.	4.5	8
94	Multiscale Photonic Emissivity Engineering for Relativistic Lightsail Thermal Regulation. Nano Letters, 2022, 22, 594-601.	4.5	7
95	Spatiotemporal Imaging of Thickness-Induced Band-Bending Junctions. Nano Letters, 2021, 21, 5745-5753.	4.5	6
96	Relativistic Light Sails Need to Billow. Nano Letters, 2022, 22, 90-96.	4.5	6
97	Structural and spectroscopic characterization of pyrene derived carbon nano dots: a single-particle level analysis. Nanoscale, 2022, 14, 3568-3578.	2.8	6
98	Efficacy of boron nitride encapsulation against plasma-processing of 2D semiconductor layers. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	0.9	4
99	Selective vapor sensors with thin-film MoS2-coated optical fibers. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2022, 40, .	0.9	4
100	2D materials: molecular design and engineering perspectives. Molecular Systems Design and Engineering, 2019, 4, 469-470.	1.7	3
101	In situ/operando Study of Photoelectrochemistry Using Optical Liquid Cell Microscopy. Microscopy and Microanalysis, 2020, 26, 2446-2447.	0.2	3
102	Interfacial Reaction and Diffusion at the One-Dimensional Interface of Two-Dimensional PtSe₂. Nano Letters, 2022, 22, 4733-4740.	4.5	3
103	Cavity-Enhanced Raman Scattering from 2D Hybrid Perovskites. Journal of Physical Chemistry C, 2022, 126, 11158-11164.	1.5	3
104	Transistors: Layerâ€byâ€Layer Assembled 2D Montmorillonite Dielectrics for Solutionâ€Processed Electronics (Adv. Mater. 1/2016). Advanced Materials, 2016, 28, 203-203.	11.1	2
105	Tunable confinement of charges and excitations. Nature Nanotechnology, 2018, 13, 99-100.	15.6	2
106	Development of a Method to Characterize Active Sites in Photocatalysis using operando Transmission Electron Microscopy. Microscopy and Microanalysis, 2019, 25, 1444-1445.	0.2	1
107	Homochiral Skyrmionic Bubbles in Exfoliated 2D Van Der Waals Cr2Ge2Te6. Microscopy and Microanalysis, 2020, 26, 2138-2140.	0.2	0
108	Non-equilibrium Structural Phase Transformations in Atomically Thin Transition Metal Dichalcogenides. Microscopy and Microanalysis, 2020, 26, 632-633.	0.2	0

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109	Electron energy loss spectroscopy of sub-10 nm 2D MoS2 crystals. Microscopy and Microanalysis, 2021, 27, 1210-1211.	0.2	0
110	Atomically-Thin Photovoltaics: Progress and Prospects. , 2019, , .		0
111	Functionalizing Van der Waals materials by shaping them. Light: Science and Applications, 2022, 11, .	7.7	0