

Vinod K Sangwan

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

84
papers

8,735
citations

35
h-index

90
g-index

90
ext. papers

10,214
ext. citations

13.4
avg, IF

6.49
L-index

#	Paper	IF	Citations
84	Emerging device applications for semiconducting two-dimensional transition metal dichalcogenides. <i>ACS Nano</i> , 2014 , 8, 1102-20	16.7	1909
83	Effective passivation of exfoliated black phosphorus transistors against ambient degradation. <i>Nano Letters</i> , 2014 , 14, 6964-70	11.5	1117
82	Carbon nanomaterials for electronics, optoelectronics, photovoltaics, and sensing. <i>Chemical Society Reviews</i> , 2013 , 42, 2824-60	58.5	941
81	Multi-terminal memtransistors from polycrystalline monolayer molybdenum disulfide. <i>Nature</i> , 2018 , 554, 500-504	50.4	469
80	Gate-tunable memristive phenomena mediated by grain boundaries in single-layer MoS ₂ . <i>Nature Nanotechnology</i> , 2015 , 10, 403-6	28.7	426
79	Band-like transport in high mobility unencapsulated single-layer MoS ₂ transistors. <i>Applied Physics Letters</i> , 2013 , 102, 173107	3.4	316
78	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
77	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
76	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
75	Neuromorphic nanoelectronic materials. <i>Nature Nanotechnology</i> , 2020 , 15, 517-528	28.7	207
74	Low-frequency electronic noise in single-layer MoS ₂ transistors. <i>Nano Letters</i> , 2013 , 13, 4351-5	11.5	188
73	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
72	Electronic Transport in Two-Dimensional Materials. <i>Annual Review of Physical Chemistry</i> , 2018 , 69, 299-325	25.7	145
71	Ultrafast Exciton Dissociation and Long-Lived Charge Separation in a Photovoltaic Pentacene-MoS van der Waals Heterojunction. <i>Nano Letters</i> , 2017 , 17, 164-169	11.5	135
70	Solution-Based Processing of Monodisperse Two-Dimensional Nanomaterials. <i>Accounts of Chemical Research</i> , 2017 , 50, 943-951	24.3	131
69	Fundamental performance limits of carbon nanotube thin-film transistors achieved using hybrid molecular dielectrics. <i>ACS Nano</i> , 2012 , 6, 7480-8	16.7	129
68	Crystallography, Morphology, Electronic Structure, and Transport in Non-Fullerene/Non-Indacenodithienothiophene Polymer:Y6 Solar Cells. <i>Journal of the American Chemical Society</i> , 2020 , 142, 14532-14547	16.4	120

67	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
66	Large-area, low-voltage, antiambipolar heterojunctions from solution-processed semiconductors. <i>Nano Letters</i> , 2015 , 15, 416-21	11.5	68
65	Comprehensive Enhancement of Nanostructured Lithium-Ion Battery Cathode Materials via Conformal Graphene Dispersion. <i>Nano Letters</i> , 2017 , 17, 2539-2546	11.5	66
64	Solution-Based Processing of Optoelectronically Active Indium Selenide. <i>Advanced Materials</i> , 2018 , 30, e1802990	24	59
63	Ambient-processable high capacitance hafnia-organic self-assembled nanodielectrics. <i>Journal of the American Chemical Society</i> , 2013 , 135, 8926-39	16.4	59
62	Large-area, electronically monodisperse, aligned single-walled carbon nanotube thin films fabricated by evaporation-driven self-assembly. <i>Small</i> , 2013 , 9, 45-51	11	59
61	Chemical vapor deposition of monolayer MoS ₂ directly on ultrathin Al ₂ O ₃ for low-power electronics. <i>Applied Physics Letters</i> , 2017 , 110, 053101	3.4	57
60	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
59	Fully Inkjet-Printed, Mechanically Flexible MoS Nanosheet Photodetectors. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 5675-5681	9.5	53
58	Direct Growth of High Mobility and Low-Noise Lateral MoS ₂ -Graphene Heterostructure Electronics. <i>Small</i> , 2017 , 13, 1604301	11	49
57	Fluorinating π -Extended Molecular Acceptors Yields Highly Connected Crystal Structures and Low Reorganization Energies for Efficient Solar Cells. <i>Advanced Energy Materials</i> , 2020 , 10, 2000635	21.8	45
56	Layer-by-Layer Sorting of Rhenium Disulfide via High-Density Isopycnic Density Gradient Ultracentrifugation. <i>Nano Letters</i> , 2016 , 16, 7216-7223	11.5	44
55	Suppressing Ambient Degradation of Exfoliated InSe Nanosheet Devices via Seeded Atomic Layer Deposition Encapsulation. <i>Nano Letters</i> , 2018 , 18, 7876-7882	11.5	44
54	Mechanisms of Ultrafast Charge Separation in a PTB7/Monolayer MoS ₂ van der Waals Heterojunction. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 2484-2491	6.4	42
53	Solution-processed single walled carbon nanotube electrodes for organic thin-film transistors. <i>Organic Electronics</i> , 2009 , 10, 1556-1561	3.5	41
52	Self-Aligned van der Waals Heterojunction Diodes and Transistors. <i>Nano Letters</i> , 2018 , 18, 1421-1427	11.5	36
51	Dual-Gated MoS ₂ Memtransistor Crossbar Array. <i>Advanced Functional Materials</i> , 2020 , 30, 2003683	15.6	36
50	High-Efficiency All-Polymer Solar Cells with Poly-Small-Molecule Acceptors Having π -Extended Units with Broad Near-IR Absorption. <i>ACS Energy Letters</i> , 2021 , 6, 728-738	20.1	35

49	Systematic Merging of Nonfullerene Acceptor Extension and Tetrafluorination Strategies Affords Polymer Solar Cells with >16% Efficiency. <i>Journal of the American Chemical Society</i> , 2021 , 143, 6123-6139	16.4	34
48	Readily Accessible Benzo[d]thiazole Polymers for Nonfullerene Solar Cells with >16% Efficiency and Potential Pitfalls. <i>ACS Energy Letters</i> , 2020 , 5, 1780-1787	20.1	31
47	High-field transport and thermal reliability of sorted carbon nanotube network devices. <i>ACS Nano</i> , 2013 , 7, 482-90	16.7	31
46	Polymer Doping Enables a Two-Dimensional Electron Gas for High-Performance Homojunction Oxide Thin-Film Transistors. <i>Advanced Materials</i> , 2019 , 31, e1805082	24	31
45	Thermally conductive ultra-low-k dielectric layers based on two-dimensional covalent organic frameworks. <i>Nature Materials</i> , 2021 , 20, 1142-1148	27	30
44	Solution-Processed Layered Gallium Telluride Thin-Film Photodetectors. <i>ACS Photonics</i> , 2018 , 5, 3996-4003	23	30
43	Spiking neurons from tunable Gaussian heterojunction transistors. <i>Nature Communications</i> , 2020 , 11, 1565	17.4	25
42	Facile fabrication of suspended as-grown carbon nanotube devices. <i>Applied Physics Letters</i> , 2008 , 93, 113112	3.4	24
41	Charge Separation at Mixed-Dimensional Single and Multilayer MoS/Silicon Nanowire Heterojunctions. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 16760-16767	9.5	23
40	Correlated In Situ Low-Frequency Noise and Impedance Spectroscopy Reveal Recombination Dynamics in Organic Solar Cells Using Fullerene and Non-Fullerene Acceptors. <i>Advanced Functional Materials</i> , 2017 , 27, 1703805	15.6	22
39	Wafer-scale solution-derived molecular gate dielectrics for low-voltage graphene electronics. <i>Applied Physics Letters</i> , 2014 , 104, 083503	3.4	22
38	Transfer printing approach to all-carbon nanoelectronics. <i>Microelectronic Engineering</i> , 2011 , 88, 3150-3154	5	22
37	Self-Assembled Nanodielectrics for High-Speed, Low-Voltage Solution-Processed Polymer Logic Circuits. <i>Advanced Electronic Materials</i> , 2015 , 1, 1500226	6.4	21
36	Low-Frequency Carrier Kinetics in Perovskite Solar Cells. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 14166-14174	9.5	19
35	Control of interlayer physics in 2H transition metal dichalcogenides. <i>Journal of Applied Physics</i> , 2017 , 122, 224302	2.5	17
34	Reducing flicker noise in chemical vapor deposition graphene field-effect transistors. <i>Applied Physics Letters</i> , 2016 , 108, 073108	3.4	17
33	Hot Carrier and Surface Recombination Dynamics in Layered InSe Crystals. <i>Journal of Physical Chemistry Letters</i> , 2019 , 10, 493-499	6.4	15
32	Ultrahigh Vacuum Self-Assembly of Rotationally Commensurate C8-BTBT/MoS ₂ /Graphene Mixed-Dimensional Heterostructures. <i>Chemistry of Materials</i> , 2019 , 31, 1761-1766	9.6	13

31	Tunable Radiation Response in Hybrid Organic-Inorganic Gate Dielectrics for Low-Voltage Graphene Electronics. <i>ACS Applied Materials & Interfaces</i> , 2016 , 8, 5058-64	9.5	13
30	Molecular-Scale Characterization of Photoinduced Charge Separation in Mixed-Dimensional InSe-Organic van der Waals Heterostructures. <i>ACS Nano</i> , 2020 , 14, 3509-3518	16.7	12
29	Solution-Processed Self-Assembled Nanodielectrics on Template-Stripped Metal Substrates. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 26360-6	9.5	12
28	Controlled growth, patterning and placement of carbon nanotube thin films. <i>Solid-State Electronics</i> , 2010 , 54, 1204-1210	1.7	12
27	Vacuum ultraviolet radiation effects on two-dimensional MoS2 field-effect transistors. <i>Applied Physics Letters</i> , 2017 , 110, 073102	3.4	11
26	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
25	Self-Assembled Photochromic Molecular Dipoles for High-Performance Polymer Thin-Film Transistors. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 21492-21498	9.5	11
24	Systematically Controlling Acceptor Fluorination Optimizes Hierarchical Morphology, Vertical Phase Separation, and Efficiency in Non-Fullerene Organic Solar Cells. <i>Advanced Energy Materials</i> , 2021 , 11, 2102172	21.8	10
23	Sodium-Doped Titania Self-Rectifying Memristor for Crossbar Array Neuromorphic Architectures. <i>Advanced Materials</i> , 2021 , e2106913	24	9
22	Non-fullerene acceptors with direct and indirect hexa-fluorination afford >17% efficiency in polymer solar cells. <i>Energy and Environmental Science</i> ,	35.4	8
21	Progress and Challenges for Memtransistors in Neuromorphic Circuits and Systems. <i>Advanced Materials</i> , 2021 , e2108025	24	7
20	Reconfigurable MoS Memtransistors for Continuous Learning in Spiking Neural Networks. <i>Nano Letters</i> , 2021 , 21, 6432-6440	11.5	7
19	Intrinsic carrier multiplication in layered Bi2O2Se avalanche photodiodes with gain bandwidth product exceeding 1 GHz. <i>Nano Research</i> , 2021 , 14, 1961-1966	10	7
18	Extrinsic and intrinsic photoresponse in monodisperse carbon nanotube thin film transistors. <i>Applied Physics Letters</i> , 2013 , 102, 083104	3.4	6
17	Observation of current-induced switching in non-collinear antiferromagnetic IrMn by differential voltage measurements. <i>Nature Communications</i> , 2021 , 12, 3828	17.4	6
16	Ambient-Stable Two-Dimensional CrI Organic-Inorganic Encapsulation. <i>ACS Nano</i> , 2021 , 15, 10659-10667	16.7	6
15	Gate-tunable memristors from monolayer MoS2 2017 ,		4
14	Thickness-dependent charge transport in exfoliated indium selenide vertical field-effect transistors. <i>Applied Physics Letters</i> , 2019 , 115, 243104	3.4	4

13	Ohmic-Contact-Gated Carbon Nanotube Transistors for High-Performance Analog Amplifiers. <i>Advanced Materials</i> , 2021 , 33, e2100994	24	4
12	Large-area optoelectronic-grade InSe thin films via controlled phase evolution. <i>Applied Physics Reviews</i> , 2020 , 7, 041402	17.3	3
11	Tailoring the Optical Response of Pentacene Thin Films via Templated Growth on Hexagonal Boron Nitride. <i>Journal of Physical Chemistry Letters</i> , 2021 , 12, 26-31	6.4	3
10	Characterizing voltage contrast in photoelectron emission microscopy. <i>Journal of Microscopy</i> , 2010 , 238, 210-7	1.9	2
9	Mechanistic Investigation of Molybdenum Disulfide Defect Photoluminescence Quenching by Adsorbed Metallophthalocyanines. <i>Journal of the American Chemical Society</i> , 2021 , 143, 17153-17161	16.4	2
8	Elucidating Charge Transport Mechanisms in Cellulose-Stabilized Graphene Inks. <i>Journal of Materials Chemistry C</i> , 2020 , 8,	7.1	2
7	Atomic-level charge transport mechanism in gate-tunable anti-ambipolar van der Waals heterojunctions. <i>Applied Physics Letters</i> , 2021 , 118, 083103	3.4	2
6	Visualizing Thermally Activated Memristive Switching in Percolating Networks of Solution-Processed 2D Semiconductors. <i>Advanced Functional Materials</i> , 2107385	15.6	2
5	Artificial Neural Networks: Dual-Gated MoS ₂ Memtransistor Crossbar Array (Adv. Funct. Mater. 45/2020). <i>Advanced Functional Materials</i> , 2020 , 30, 2070297	15.6	1
4	Amorphous to Crystal Phase Change Memory Effect with Two-Fold Bandgap Difference in Semiconducting KBiSe. <i>Journal of the American Chemical Society</i> , 2021 , 143, 6221-6228	16.4	1
3	Anisotropic thermal conductivity of layered indium selenide. <i>Applied Physics Letters</i> , 2021 , 118, 073101	3.4	1
2	Abrupt Thermal Shock of (NH)MoS Leads to Ultrafast Synthesis of Porous Ensembles of MoS Nanocrystals for High Gain Photodetectors. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 38193-38200	8.5	1
1	Mechanism of Long-Range Energy Transfer from Quantum Dots to Black Phosphorus. <i>Journal of Physical Chemistry C</i> , 2021 , 125, 15458-15464	3.8	1