Vinod K Sangwan

List of Publications by Year
in descending order

87	11,777	66234	48187
papers	citations	42 h-index	88 g-index

90	90	90	16785
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	Effective Passivation of Exfoliated Black Phosphorus Transistors against Ambient Degradation. Nano Letters, 2014, 14, 6964-6970.	4.5	1,294
3	Carbon nanomaterials for electronics, optoelectronics, photovoltaics, and sensing. Chemical Society Reviews, 2013, 42, 2824-2860.	18.7	1,105
4	Multi-terminal memtransistors from polycrystalline monolayer molybdenum disulfide. Nature, 2018, 554, 500-504.	13.7	705
5	Gate-tunable memristive phenomena mediated by grain boundaries in single-layer MoS2. Nature Nanotechnology, 2015, 10, 403-406.	15.6	564
6	Neuromorphic nanoelectronic materials. Nature Nanotechnology, 2020, 15, 517-528.	15.6	464
7	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
8	Band-like transport in high mobility unencapsulated single-layer MoS2 transistors. Applied Physics Letters, 2013, 102, .	1.5	359
9	Hybrid, Gate-Tunable, van der Waals pâ€“n Heterojunctions from Pentacene and MoS₂. Nano Letters, 2016, 16, 497-503.	4.5	295
10	Influence of Stoichiometry on the Optical and Electrical Properties of Chemical Vapor Deposition Derived MoS₂. ACS Nano, 2014, 8, 10551-10558.	7.3	281
11	Low-Frequency Electronic Noise in Single-Layer MoS₂ Transistors. Nano Letters, 2013, 13, 4351-4355.	4.5	221
12	Electronic Transport in Two-Dimensional Materials. Annual Review of Physical Chemistry, 2018, 69, 299-325.	4.8	217
13	Crystallography, Morphology, Electronic Structure, and Transport in Non-Fullerene/Non-Indacenodithienothiophene Polymer:Y6 Solar Cells. Journal of the American Chemical Society, 2020, 142, 14532-14547.	6.6	214
14	Ultrafast Exciton Dissociation and Long-Lived Charge Separation in a Photovoltaic Pentaceneâ€“MoS₂ van der Waals Heterojunction. Nano Letters, 2017, 17, 164-169.	4.5	195
15	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
16	Solution-Based Processing of Monodisperse Two-Dimensional Nanomaterials. Accounts of Chemical Research, 2017, 50, 943-951.	7.6	172
17	Thermally conductive ultra-low-k dielectric layers based on two-dimensional covalent organic frameworks. Nature Materials, 2021, 20, 1142-1148.	13.3	158
18	Fundamental Performance Limits of Carbon Nanotube Thin-Film Transistors Achieved Using Hybrid Molecular Dielectrics. ACS Nano, 2012, 6, 7480-7488.	7.3	142

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19	Investigation of Band-Offsets at Monolayerâ€“Multilayer MoS₂ Junctions by Scanning Photocurrent Microscopy. Nano Letters, 2015, 15, 2278-2284.	4.5	141
20	Systematic Merging of Nonfullerene Acceptor Ï€-Extension and Tetrafluorination Strategies Affords Polymer Solar Cells with >16% Efficiency. Journal of the American Chemical Society, 2021, 143, 6123-6139.	6.6	125
21	Fully Inkjet-Printed, Mechanically Flexible MoS₂ Nanosheet Photodetectors. ACS Applied Materials & Interfaces, 2019, 11, 5675-5681.	4.0	100
22	Large-Area, Low-Voltage, Antiambipolar Heterojunctions from Solution-Processed Semiconductors. Nano Letters, 2015, 15, 416-421.	4.5	87
23	Comprehensive Enhancement of Nanostructured Lithium-Ion Battery Cathode Materials via Conformal Graphene Dispersion. Nano Letters, 2017, 17, 2539-2546.	4.5	81
24	Solutionâ€Based Processing of Optoelectronically Active Indium Selenide. Advanced Materials, 2018, 30, e1802990.	11.1	78
25	Fluorinating Ï€â€Extended Molecular Acceptors Yields Highly Connected Crystal Structures and Low Reorganization Energies for Efficient Solar Cells. Advanced Energy Materials, 2020, 10, 2000635.	10.2	78
26	High-Efficiency All-Polymer Solar Cells with Poly-Small-Molecule Acceptors Having Ï€-Extended Units with Broad Near-IR Absorption. ACS Energy Letters, 2021, 6, 728-738.	8.8	74
27	Dualâ€Gated MoS₂ Memtransistor Crossbar Array. Advanced Functional Materials, 2020, 30, 2003683.	7.8	73
28	Chemical vapor deposition of monolayer MoS2 directly on ultrathin Al2O3 for low-power electronics. Applied Physics Letters, 2017, 110, .	1.5	72
29	Ambient-Processable High Capacitance Hafnia-Organic Self-Assembled Nanodielectrics. Journal of the American Chemical Society, 2013, 135, 8926-8939.	6.6	69
30	Quantitatively Enhanced Reliability and Uniformity of High-Î¤ Dielectrics on Graphene Enabled by Self-Assembled Seeding Layers. Nano Letters, 2013, 13, 1162-1167.	4.5	67
31	Largeâ€Area, Electronically Monodisperse, Aligned Singleâ€Walled Carbon Nanotube Thin Films Fabricated by Evaporationâ€Driven Selfâ€Assembly. Small, 2013, 9, 45-51.	5.2	67
32	Non-fullerene acceptors with direct and indirect hexa-fluorination afford >17% efficiency in polymer solar cells. Energy and Environmental Science, 2022, 15, 645-659.	15.6	65
33	Direct Growth of High Mobility and Lowâ€Noise Lateral MoS₂â€“Graphene Heterostructure Electronics. Small, 2017, 13, 1604301.	5.2	61
34	Readily Accessible Benzo[d]thiazole Polymers for Nonfullerene Solar Cells with >16% Efficiency and Potential Pitfalls. ACS Energy Letters, 2020, 5, 1780-1787.	8.8	58
35	Spiking neurons from tunable Gaussian heterojunction transistors. Nature Communications, 2020, 11, 1565.	5.8	58
36	Mechanisms of Ultrafast Charge Separation in a PTB7/Monolayer MoS₂ van der Waals Heterojunction. Journal of Physical Chemistry Letters, 2018, 9, 2484-2491.	2.1	57

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37	Layer-by-Layer Sorting of Rhenium Disulfide via High-Density Isopycnic Density Gradient Ultracentrifugation. Nano Letters, 2016, 16, 7216-7223.	4.5	54
38	Suppressing Ambient Degradation of Exfoliated InSe Nanosheet Devices via Seeded Atomic Layer Deposition Encapsulation. Nano Letters, 2018, 18, 7876-7882.	4.5	54
39	Solution-Processed Layered Gallium Telluride Thin-Film Photodetectors. ACS Photonics, 2018, 5, 3996-4002.	3.2	52
40	Self-Aligned van der Waals Heterojunction Diodes and Transistors. Nano Letters, 2018, 18, 1421-1427.	4.5	51
41	Systematically Controlling Acceptor Fluorination Optimizes Hierarchical Morphology, Vertical Phase Separation, and Efficiency in Nonâ€Fullerene Organic Solar Cells. Advanced Energy Materials, 2022, 12, .	10.2	46
42	Solution-processed single walled carbon nanotube electrodes for organic thin-film transistors. Organic Electronics, 2009, 10, 1556-1561.	1.4	45
43	Polymer Doping Enables a Twoâ€Dimensional Electron Gas for Highâ€Performance Homojunction Oxide Thinâ€Film Transistors. Advanced Materials, 2019, 31, e1805082.	11.1	43
44	Progress and Challenges for Memtransistors in Neuromorphic Circuits and Systems. Advanced Materials, 2022, 34, e2108025.	11.1	40
45	High-Field Transport and Thermal Reliability of Sorted Carbon Nanotube Network Devices. ACS Nano, 2013, 7, 482-490.	7.3	35
46	Reconfigurable MoS₂ Memtransistors for Continuous Learning in Spiking Neural Networks. Nano Letters, 2021, 21, 6432-6440.	4.5	33
47	Charge Separation at Mixed-Dimensional Single and Multilayer MoS₂/Silicon Nanowire Heterojunctions. ACS Applied Materials & Interfaces, 2018, 10, 16760-16767.	4.0	31
48	Observation of current-induced switching in non-collinear antiferromagnetic IrMn3 by differential voltage measurements. Nature Communications, 2021, 12, 3828.	5.8	31
49	Facile fabrication of suspended as-grown carbon nanotube devices. Applied Physics Letters, 2008, 93, 113112.	1.5	29
50	Sodiumâ€Doped Titania Selfâ€Rectifying Memristors for Crossbar Array Neuromorphic Architectures. Advanced Materials, 2022, 34, e2106913.	11.1	28
51	Correlated In Situ Lowâ€Frequency Noise and Impedance Spectroscopy Reveal Recombination Dynamics in Organic Solar Cells Using Fullerene and Nonâ€Fullerene Acceptors. Advanced Functional Materials, 2017, 27, 1703805.	7.8	26
52	Low-Frequency Carrier Kinetics in Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2019, 11, 14166-14174.	4.0	26
53	Allâ€Printed Ultrahighâ€Responsivity MoS₂ Nanosheet Photodetectors Enabled by Megasonic Exfoliation. Advanced Materials, 2022, 34, .	11.1	25
54	Transfer printing approach to all-carbon nanoelectronics. Microelectronic Engineering, 2011, 88, 3150-3154.	1.1	24

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55	Selfâ€Assembled Nanodielectrics for Highâ€Speed, Lowâ€Voltage Solutionâ€Processed Polymer Logic Circuits. Advanced Electronic Materials, 2015, 1, 1500226.	2.6	23
56	Reducing flicker noise in chemical vapor deposition graphene field-effect transistors. Applied Physics Letters, 2016, 108, .	1.5	23
57	Wafer-scale solution-derived molecular gate dielectrics for low-voltage graphene electronics. Applied Physics Letters, 2014, 104, .	1.5	22
58	Hot Carrier and Surface Recombination Dynamics in Layered InSe Crystals. Journal of Physical Chemistry Letters, 2019, 10, 493-499.	2.1	22
59	Control of interlayer physics in 2H transition metal dichalcogenides. Journal of Applied Physics, 2017, 122, .	1.1	21
60	Ambient-Stable Two-Dimensional CrI₃ via Organic-Inorganic Encapsulation. ACS Nano, 2021, 15, 10659-10667.	7.3	20
61	Linear and Symmetric Li-Based Composite Memristors for Efficient Supervised Learning. ACS Applied Materials & Interfaces, 2022, 14, 5673-5681.	4.0	18
62	Solution-Processed Self-Assembled Nanodielectrics on Template-Stripped Metal Substrates. ACS Applied Materials & Interfaces, 2015, 7, 26360-26366.	4.0	17
63	Large-area optoelectronic-grade InSe thin films via controlled phase evolution. Applied Physics Reviews, 2020, 7, .	5.5	17
64	Molecular-Scale Characterization of Photoinduced Charge Separation in Mixed-Dimensional InSeâ€“Organic van der Waals Heterostructures. ACS Nano, 2020, 14, 3509-3518.	7.3	17
65	Intrinsic carrier multiplication in layered Bi2O2Se avalanche photodiodes with gain bandwidth product exceeding 1 GHz. Nano Research, 2021, 14, 1961-1966.	5.8	17
66	Visualizing Thermally Activated Memristive Switching in Percolating Networks of Solutionâ€Processed 2D Semiconductors. Advanced Functional Materials, 2021, 31, 2107385.	7.8	17
67	Vacuum ultraviolet radiation effects on two-dimensional MoS2 field-effect transistors. Applied Physics Letters, 2017, 110, .	1.5	16
68	Ultrahigh Vacuum Self-Assembly of Rotationally Commensurate C8-BTBT/MoS₂/Graphene Mixed-Dimensional Heterostructures. Chemistry of Materials, 2019, 31, 1761-1766.	3.2	16
69	Tunable Radiation Response in Hybrid Organicâ€“Inorganic Gate Dielectrics for Low-Voltage Graphene Electronics. ACS Applied Materials & Interfaces, 2016, 8, 5058-5064.	4.0	15
70	Anisotropic thermal conductivity of layered indium selenide. Applied Physics Letters, 2021, 118, .	1.5	14
71	Controlled growth, patterning and placement of carbon nanotube thin films. Solid-State Electronics, 2010, 54, 1204-1210.	0.8	13
72	Near-field microwave microscopy of high-Îº oxides grown on graphene with an organic seeding layer. Applied Physics Letters, 2013, 103, .	1.5	12

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73	Self-Assembled Photochromic Molecular Dipoles for High-Performance Polymer Thin-Film Transistors. ACS Applied Materials & Interfaces, 2018, 10, 21492-21498.	4.0	12
74	Mechanistic Investigation of Molybdenum Disulfide Defect Photoluminescence Quenching by Adsorbed Metallophthalocyanines. Journal of the American Chemical Society, 2021, 143, 17153-17161.	6.6	12
75	Elucidating charge transport mechanisms in cellulose-stabilized graphene inks. Journal of Materials Chemistry C, 2020, 8, 15086-15091.	2.7	10
76	Liquid-Phase Exfoliation of Magnetically and Optoelectronically Active Ruthenium Trichloride Nanosheets. ACS Nano, 2022, 16, 11315-11324.	7.3	10
77	Tailoring the Optical Response of Pentacene Thin Films via Templated Growth on Hexagonal Boron Nitride. Journal of Physical Chemistry Letters, 2021, 12, 26-31.	2.1	9
78	Amorphous to Crystal Phase Change Memory Effect with Two-Fold Bandgap Difference in Semiconducting K₂Bi₈Se₁₃. Journal of the American Chemical Society, 2021, 143, 6221-6228.	6.6	9
79	Extrinsic and intrinsic photoresponse in monodisperse carbon nanotube thin film transistors. Applied Physics Letters, 2013, 102, .	1.5	8
80	Atomic-level charge transport mechanism in gate-tunable anti-ambipolar van der Waals heterojunctions. Applied Physics Letters, 2021, 118, .	1.5	8
81	Gate-tunable memristors from monolayer MoS<inf>2</inf>. , 2017, , .		7
82	Ohmicâ€Contactâ€Gated Carbon Nanotube Transistors for Highâ€Performance Analog Amplifiers. Advanced Materials, 2021, 33, e2100994.	11.1	7
83	Mechanism of Long-Range Energy Transfer from Quantum Dots to Black Phosphorus. Journal of Physical Chemistry C, 2021, 125, 15458-15464.	1.5	6
84	Abrupt Thermal Shock of (NH₄)₂Mo₃S₁₃ Leads to Ultrafast Synthesis of Porous Ensembles of MoS₂ Nanocrystals for High Gain Photodetectors. ACS Applied Materials & Interfaces, 2018, 10, 38193-38200.	4.0	5
85	Thickness-dependent charge transport in exfoliated indium selenide vertical field-effect transistors. Applied Physics Letters, 2019, 115, 243104.	1.5	5
86	Characterizing voltage contrast in photoelectron emission microscopy. Journal of Microscopy, 2010, 238, 210-217.	0.8	3
87	Artificial Neural Networks: Dualâ€Gated MoS₂ Memtransistor Crossbar Array (Adv. Funct.) Tj ETQq1 1 0.784314 rgBT /O	7.8	3