Vinod K Sangwan

List of Publications by Year in Descending Order

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	Sodium-Doped Titania Self-Rectifying Memristor for Crossbar Array Neuromorphic Architectures. *Advanced Materials*, **2021**, e2106913	24	9
83	Progress and Challenges for Memtransistors in Neuromorphic Circuits and Systems. *Advanced Materials*, **2021**, e2108025	24	7
82	Mechanistic Investigation of Molybdenum Disulfide Defect Photoluminescence Quenching by Adsorbed Metallophthalocyanines. *Journal of the American Chemical Society*, **2021**, 143, 17153-17161	16.4	2
81	Thermally conductive ultra-low-k dielectric layers based on two-dimensional covalent organic frameworks. *Nature Materials*, **2021**, 20, 1142-1148	27	30
80	Amorphous to Crystal Phase Change Memory Effect with Two-Fold Bandgap Difference in Semiconducting KBiSe. *Journal of the American Chemical Society*, **2021**, 143, 6221-6228	16.4	1
79	Systematic Merging of Nonfullerene Acceptor Extension and Tetrafluorination Strategies Affords Polymer Solar Cells with >16% Efficiency. *Journal of the American Chemical Society*, **2021**, 143, 6123-6139	16.4	34
78	Observation of current-induced switching in non-collinear antiferromagnetic IrMn by differential voltage measurements. *Nature Communications*, **2021**, 12, 3828	17.4	6
77	Ambient-Stable Two-Dimensional CrI Organic-Inorganic Encapsulation. *ACS Nano*, **2021**, 15, 10659-10667	16.7	6
76	Reconfigurable MoS Memtransistors for Continuous Learning in Spiking Neural Networks. *Nano Letters*, **2021**, 21, 6432-6440	11.5	7
75	Tailoring the Optical Response of Pentacene Thin Films via Templated Growth on Hexagonal Boron Nitride. *Journal of Physical Chemistry Letters*, **2021**, 12, 26-31	6.4	3
74	Intrinsic carrier multiplication in layered Bi2O2Se avalanche photodiodes with gain bandwidth product exceeding 1 GHz. *Nano Research*, **2021**, 14, 1961-1966	10	7
73	Anisotropic thermal conductivity of layered indium selenide. *Applied Physics Letters*, **2021**, 118, 073101	3.4	1
72	Atomic-level charge transport mechanism in gate-tunable anti-ambipolar van der Waals heterojunctions. *Applied Physics Letters*, **2021**, 118, 083103	3.4	2
71	Ohmic-Contact-Gated Carbon Nanotube Transistors for High-Performance Analog Amplifiers. *Advanced Materials*, **2021**, 33, e2100994	24	4
70	Mechanism of Long-Range Energy Transfer from Quantum Dots to Black Phosphorus. *Journal of Physical Chemistry C*, **2021**, 125, 15458-15464	3.8	1
69	High-Efficiency All-Polymer Solar Cells with Poly-Small-Molecule Acceptors Having Extended Units with Broad Near-IR Absorption. *ACS Energy Letters*, **2021**, 6, 728-738	20.1	35
68	Artificial Neural Networks: Dual-Gated MoS2 Memtransistor Crossbar Array (Adv. Funct. Mater. 45/2020). *Advanced Functional Materials*, **2020**, 30, 2070297	15.6	1

67	Fluorinating Extended Molecular Acceptors Yields Highly Connected Crystal Structures and Low Reorganization Energies for Efficient Solar Cells. *Advanced Energy Materials*, **2020**, 10, 2000635	21.8	45
66	Readily Accessible Benzo[d]thiazole Polymers for Nonfullerene Solar Cells with >16% Efficiency and Potential Pitfalls. *ACS Energy Letters*, **2020**, 5, 1780-1787	20.1	31
65	Spiking neurons from tunable Gaussian heterojunction transistors. *Nature Communications*, **2020**, 11, 1565	17.4	25
64	Neuromorphic nanoelectronic materials. *Nature Nanotechnology*, **2020**, 15, 517-528	28.7	207
63	Molecular-Scale Characterization of Photoinduced Charge Separation in Mixed-Dimensional InSe-Organic van der Waals Heterostructures. *ACS Nano*, **2020**, 14, 3509-3518	16.7	12
62	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	16.4	120
61	Elucidating Charge Transport Mechanisms in Cellulose-Stabilized Graphene Inks. *Journal of Materials Chemistry C*, **2020**, 8,	7.1	2
60	Large-area optoelectronic-grade InSe thin films via controlled phase evolution. *Applied Physics Reviews*, **2020**, 7, 041402	17.3	3
59	Dual-Gated MoS2 Memtransistor Crossbar Array. *Advanced Functional Materials*, **2020**, 30, 2003683	15.6	36
58	Fully Inkjet-Printed, Mechanically Flexible MoS Nanosheet Photodetectors. *ACS Applied Materials & Interfaces*, **2019**, 11, 5675-5681	9.5	53
57	Low-Frequency Carrier Kinetics in Perovskite Solar Cells. *ACS Applied Materials & Interfaces*, **2019**, 11, 14166-14174	9.5	19
56	Ultrahigh Vacuum Self-Assembly of Rotationally Commensurate C8-BTBT/MoS2/Graphene Mixed-Dimensional Heterostructures. *Chemistry of Materials*, **2019**, 31, 1761-1766	9.6	13
55	Thickness-dependent charge transport in exfoliated indium selenide vertical field-effect transistors. *Applied Physics Letters*, **2019**, 115, 243104	3.4	4
54	Hot Carrier and Surface Recombination Dynamics in Layered InSe Crystals. *Journal of Physical Chemistry Letters*, **2019**, 10, 493-499	6.4	15
53	Polymer Doping Enables a Two-Dimensional Electron Gas for High-Performance Homojunction Oxide Thin-Film Transistors. *Advanced Materials*, **2019**, 31, e1805082	24	31
52	Multi-terminal memtransistors from polycrystalline monolayer molybdenum disulfide. *Nature*, **2018**, 554, 500-504	50.4	469
51	Electronic Transport in Two-Dimensional Materials. *Annual Review of Physical Chemistry*, **2018**, 69, 299-325	13.7	145
50	Charge Separation at Mixed-Dimensional Single and Multilayer MoS/Silicon Nanowire Heterojunctions. *ACS Applied Materials & Interfaces*, **2018**, 10, 16760-16767	9.5	23

49	Mechanisms of Ultrafast Charge Separation in a PTB7/Monolayer MoS van der Waals Heterojunction. *Journal of Physical Chemistry Letters*, **2018**, 9, 2484-2491	6.4	42
48	Self-Aligned van der Waals Heterojunction Diodes and Transistors. *Nano Letters*, **2018**, 18, 1421-1427	11.5	36
47	Solution-Based Processing of Optoelectronically Active Indium Selenide. *Advanced Materials*, **2018**, 30, e1802990	24	59
46	Suppressing Ambient Degradation of Exfoliated InSe Nanosheet Devices via Seeded Atomic Layer Deposition Encapsulation. *Nano Letters*, **2018**, 18, 7876-7882	11.5	44
45	Solution-Processed Layered Gallium Telluride Thin-Film Photodetectors. *ACS Photonics*, **2018**, 5, 3996-4003	6.5	30
44	Abrupt Thermal Shock of (NH)MoS Leads to Ultrafast Synthesis of Porous Ensembles of MoS Nanocrystals for High Gain Photodetectors. *ACS Applied Materials & Interfaces*, **2018**, 10, 38193-38200	8.5	1
43	Self-Assembled Photochromic Molecular Dipoles for High-Performance Polymer Thin-Film Transistors. *ACS Applied Materials & Interfaces*, **2018**, 10, 21492-21498	9.5	11
42	Chemical vapor deposition of monolayer MoS2 directly on ultrathin Al2O3 for low-power electronics. *Applied Physics Letters*, **2017**, 110, 053101	3.4	57
41	Solution-Based Processing of Monodisperse Two-Dimensional Nanomaterials. *Accounts of Chemical Research*, **2017**, 50, 943-951	24.3	131
40	Comprehensive Enhancement of Nanostructured Lithium-Ion Battery Cathode Materials via Conformal Graphene Dispersion. *Nano Letters*, **2017**, 17, 2539-2546	11.5	66
39	Vacuum ultraviolet radiation effects on two-dimensional MoS2 field-effect transistors. *Applied Physics Letters*, **2017**, 110, 073102	3.4	11
38	Ultrafast Exciton Dissociation and Long-Lived Charge Separation in a Photovoltaic Pentacene-MoS van der Waals Heterojunction. *Nano Letters*, **2017**, 17, 164-169	11.5	135
37	Direct Growth of High Mobility and Low-Noise Lateral MoS -Graphene Heterostructure Electronics. *Small*, **2017**, 13, 1604301	11	49
36	Correlated In Situ Low-Frequency Noise and Impedance Spectroscopy Reveal Recombination Dynamics in Organic Solar Cells Using Fullerene and Non-Fullerene Acceptors. *Advanced Functional Materials*, **2017**, 27, 1703805	15.6	22
35	Gate-tunable memristors from monolayer MoS2 **2017**,		4
34	Control of interlayer physics in 2H transition metal dichalcogenides. *Journal of Applied Physics*, **2017**, 122, 224302	2.5	17
33	Hybrid, Gate-Tunable, van der Waals p-n Heterojunctions from Pentacene and MoS2. *Nano Letters*, **2016**, 16, 497-503	11.5	240
32	Tunable Radiation Response in Hybrid Organic-Inorganic Gate Dielectrics for Low-Voltage Graphene Electronics. *ACS Applied Materials & Interfaces*, **2016**, 8, 5058-64	9.5	13

31	Reducing flicker noise in chemical vapor deposition graphene field-effect transistors. *Applied Physics Letters*, **2016**, 108, 073108	3.4	17
30	Layer-by-Layer Sorting of Rhenium Disulfide via High-Density Isopycnic Density Gradient Ultracentrifugation. *Nano Letters*, **2016**, 16, 7216-7223	11.5	44
29	Investigation of band-offsets at monolayer-multilayer MoS junctions by scanning photocurrent microscopy. *Nano Letters*, **2015**, 15, 2278-84	11.5	115
28	Gate-tunable memristive phenomena mediated by grain boundaries in single-layer MoS2. *Nature Nanotechnology*, **2015**, 10, 403-6	28.7	426
27	Self-Assembled Nanodielectrics for High-Speed, Low-Voltage Solution-Processed Polymer Logic Circuits. *Advanced Electronic Materials*, **2015**, 1, 1500226	6.4	21
26	Solution-Processed Self-Assembled Nanodielectrics on Template-Stripped Metal Substrates. *ACS Applied Materials & Interfaces*, **2015**, 7, 26360-6	9.5	12
25	Large-area, low-voltage, antiambipolar heterojunctions from solution-processed semiconductors. *Nano Letters*, **2015**, 15, 416-21	11.5	68
24	Emerging device applications for semiconducting two-dimensional transition metal dichalcogenides. *ACS Nano*, **2014**, 8, 1102-20	16.7	1909
23	Effective passivation of exfoliated black phosphorus transistors against ambient degradation. *Nano Letters*, **2014**, 14, 6964-70	11.5	1117
22	Influence of stoichiometry on the optical and electrical properties of chemical vapor deposition derived MoS2. *ACS Nano*, **2014**, 8, 10551-8	16.7	209
21	Wafer-scale solution-derived molecular gate dielectrics for low-voltage graphene electronics. *Applied Physics Letters*, **2014**, 104, 083503	3.4	22
20	Elucidating the Photoresponse of Ultrathin MoS2 Field-Effect Transistors by Scanning Photocurrent Microscopy. *Journal of Physical Chemistry Letters*, **2013**, 4, 2508-2513	6.4	169
19	Band-like transport in high mobility unencapsulated single-layer MoS2 transistors. *Applied Physics Letters*, **2013**, 102, 173107	3.4	316
18	Carbon nanomaterials for electronics, optoelectronics, photovoltaics, and sensing. *Chemical Society Reviews*, **2013**, 42, 2824-60	58.5	941
17	Ambient-processable high capacitance hafnia-organic self-assembled nanodielectrics. *Journal of the American Chemical Society*, **2013**, 135, 8926-39	16.4	59
16	Quantitatively enhanced reliability and uniformity of high- dielectrics on graphene enabled by self-assembled seeding layers. *Nano Letters*, **2013**, 13, 1162-7	11.5	57
15	High-field transport and thermal reliability of sorted carbon nanotube network devices. *ACS Nano*, **2013**, 7, 482-90	16.7	31
14	Low-frequency electronic noise in single-layer MoS2 transistors. *Nano Letters*, **2013**, 13, 4351-5	11.5	188

13	Large-area, electronically monodisperse, aligned single-walled carbon nanotube thin films fabricated by evaporation-driven self-assembly. *Small*, **2013**, 9, 45-51	11	59
12	Near-field microwave microscopy of high-□oxides grown on graphene with an organic seeding layer. *Applied Physics Letters*, **2013**, 103, 243105	3.4	11
11	Extrinsic and intrinsic photoresponse in monodisperse carbon nanotube thin film transistors. *Applied Physics Letters*, **2013**, 102, 083104	3.4	6
10	Gate-tunable carbon nanotube-MoS2 heterojunction p-n diode. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 18076-80	11.5	304
9	Fundamental performance limits of carbon nanotube thin-film transistors achieved using hybrid molecular dielectrics. *ACS Nano*, **2012**, 6, 7480-8	16.7	129
8	Transfer printing approach to all-carbon nanoelectronics. *Microelectronic Engineering*, **2011**, 88, 3150-3154	2.5	22
7	Characterizing voltage contrast in photoelectron emission microscopy. *Journal of Microscopy*, **2010**, 238, 210-7	1.9	2
6	Controlled growth, patterning and placement of carbon nanotube thin films. *Solid-State Electronics*, **2010**, 54, 1204-1210	1.7	12
5	Solution-processed single walled carbon nanotube electrodes for organic thin-film transistors. *Organic Electronics*, **2009**, 10, 1556-1561	3.5	41
4	Facile fabrication of suspended as-grown carbon nanotube devices. *Applied Physics Letters*, **2008**, 93, 113112	3.4	24
3	Systematically Controlling Acceptor Fluorination Optimizes Hierarchical Morphology, Vertical Phase Separation, and Efficiency in Non-Fullerene Organic Solar Cells. *Advanced Energy Materials*,2102172	21.8	10
2	Non-fullerene acceptors with direct and indirect hexa-fluorination afford >17% efficiency in polymer solar cells. *Energy and Environmental Science*,	35.4	8
1	Visualizing Thermally Activated Memristive Switching in Percolating Networks of Solution-Processed 2D Semiconductors. *Advanced Functional Materials*,2107385	15.6	2