Saptarshi Das

List of Publications by Year
in descending order

97 papers	11,701 citations	66343 42 h-index	45317 90 g-index
113 all docs	113 docs citations	113 times ranked	13680 citing authors

#	Article	IF	Citations
1	An Annealing Accelerator for Ising Spin Systems Based on Inâ€Memory Complementary 2D FETs. Advanced Materials, 2022, 34, e2107076.	21.0	13
2	Unveiling the electrical and photo-physical properties of intrinsic n-type 2D WSe2 for high performance field-effect transistors. Journal of Applied Physics, 2022, 131, .	2.5	4
3	Leaving defects out of 2D molybdenum disulfide. Nature Electronics, 2022, 5, 19-20.	26.0	7
4	High Throughput Data-Driven Design of Laser-Crystallized 2D MoS₂ Chemical Sensors: A Demonstration for NO₂ Detection. ACS Applied Nano Materials, 2022, 5, 7549-7561.	5.0	5
5	All-in-one, bio-inspired, and low-power crypto engines for near-sensor security based on two-dimensional memtransistors. Nature Communications, 2022, 13, .	12.8	47
6	A Sparse and Spikeâ€Timingâ€Based Adaptive Photoencoder for Augmenting Machine Vision for Spiking Neural Networks. Advanced Materials, 2022, 34, .	21.0	28
7	Heterogeneous Integration of Atomically Thin Semiconductors for Nonâ€von Neumann CMOS. Small, 2022, 18, .	10.0	20
8	Satisfiability Attack-Resistant Camouflaged Two-Dimensional Heterostructure Devices. ACS Nano, 2021, 15, 3453-3467.	14.6	24
9	Acquisition and analysis of scanning tunneling spectroscopy dataâ€"WSe2 monolayer. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	2.1	5
10	Benchmarking monolayer MoS2 and WS2 field-effect transistors. Nature Communications, 2021, 12, 693.	12.8	246
11	Review and comparison of layer transfer methods for two-dimensional materials for emerging applications. Chemical Society Reviews, 2021, 50, 11032-11054.	38.1	61
12	Interface Transparency and Rashba Spin Torque Enhancement in WSe2 Heterostructures. ACS Applied Materials & Interfaces, 2021, 13, 13744-13750.	8.0	18
13	A biomimetic neural encoder for spiking neural network. Nature Communications, 2021, 12, 2143.	12.8	71
14	Graphene-based physically unclonable functions that are reconfigurable and resilient to machine learning attacks. Nature Electronics, 2021, 4, 364-374.	26.0	67
15	Controllable pâ€Type Doping of 2D WSe₂ via Vanadium Substitution. Advanced Functional Materials, 2021, 31, 2105252.	14.9	40
16	Wafer-Scale Epitaxial Growth of Unidirectional WS₂ Monolayers on Sapphire. ACS Nano, 2021, 15, 2532-2541.	14.6	149
17	Demonstration of Stochastic Resonance, Population Coding, and Population Voting Using Artificial MoS₂ Based Synapses. ACS Nano, 2021, 15, 16172-16182.	14.6	12
18	A Machine Learning Attack Resilient True Random Number Generator Based on Stochastic Programming of Atomically Thin Transistors. ACS Nano, 2021, 15, 17804-17812.	14.6	23

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19	Transistors based on two-dimensional materials for future integrated circuits. Nature Electronics, 2021, 4, 786-799.	26.0	335
20	Secure Electronics Enabled by Atomically Thin and Photosensitive Two-Dimensional Memtransistors. ACS Nano, 2021, 15, 19815-19827.	14.6	44
21	Scalable BEOL compatible 2D tungsten diselenide. 2D Materials, 2020, 7, 015029.	4.4	41
22	Thickness Trends of Electron and Hole Conduction and Contact Carrier Injection in Surface Charge Transfer Doped 2D Field Effect Transistors. ACS Nano, 2020, 14, 13557-13568.	14.6	35
23	Polarization-induced Strain-coupled TMD FETs (PS FETs) for Non-Volatile Memory Applications. , 2020, , .		3
24	2D Strain FET (2D-SFET)-Based SRAMsâ€"Part II: Back Voltage-Enabled Designs. IEEE Transactions on Electron Devices, 2020, 67, 4875-4883.	3.0	3
25	Monolayer Vanadiumâ€Doped Tungsten Disulfide: A Roomâ€Temperature Dilute Magnetic Semiconductor. Advanced Science, 2020, 7, 2001174.	11.2	104
26	Spontaneous chemical functionalization via coordination of Au single atoms on monolayer MoS ₂. Science Advances, 2020, 6, .	10.3	56
27	Modification of the Electronic Transport in Atomically Thin WSe₂ by Oxidation. Advanced Materials Interfaces, 2020, 7, 2000422.	3.7	11
28	2-D Strain FET (2D-SFET) Based SRAMsâ€"Part I: Device-Circuit Interactions. IEEE Transactions on Electron Devices, 2020, 67, 4866-4874.	3.0	5
29	Low-Power and Ultra-Thin MoS₂ Photodetectors on Glass. ACS Nano, 2020, 14, 15440-15449.	14.6	53
30	Graphene memristive synapses for high precision neuromorphic computing. Nature Communications, 2020, 11, 5474.	12.8	97
31	Stochastic resonance in MoS2 photodetector. Nature Communications, 2020, 11, 4406.	12.8	75
32	A low-power biomimetic collision detector based on an in-memory molybdenum disulfide photodetector. Nature Electronics, 2020, 3, 646-655.	26.0	140
33	Scalable Substitutional Reâ€Doping and its Impact on the Optical and Electronic Properties of Tungsten Diselenide. Advanced Materials, 2020, 32, e2005159.	21.0	32
34	Flat Bands and Mechanical Deformation Effects in the MoirÃ© Superlattice of MoS₂-WSe₂ Heterobilayers. ACS Nano, 2020, 14, 7564-7573.	14.6	38
35	Study on the Growth Parameters and the Electrical and Optical Behaviors of 2D Tungsten Disulfide. ACS Applied Materials & Interfaces, 2020, 12, 16576-16583.	8.0	13
36	Digital holography for non-invasive quantitative imaging of two-dimensional materials. Journal of Applied Physics, 2020, 127, .	2.5	4

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37	Photon-assisted heat engines in the THz regime. Journal of Applied Physics, 2020, 127, 024305.	2.5	0
38	A biomimetic 2D transistor for audiomorphic computing. Nature Communications, 2019, 10, 3450.	12.8	72
39	Mask-free patterning and selective CVD-growth of 2D-TMDCs semiconductors. Semiconductor Science and Technology, 2019, 34, 085010.	2.0	5
40	Gaussian synapses for probabilistic neural networks. Nature Communications, 2019, 10, 4199.	12.8	81
41	Extraordinary Radiation Hardness of Atomically Thin MoS₂. ACS Applied Materials & Interfaces, 2019, 11, 8391-8399.	8.0	34
42	Carbon doping of WS ₂ monolayers: Bandgap reduction and p-type doping transport. Science Advances, 2019, 5, eaav5003.	10.3	119
43	Biological physically unclonable function. Communications Physics, 2019, 2, .	5.3	44
44	Defect-Controlled Nucleation and Orientation of WSe₂ on hBN: A Route to Single-Crystal Epitaxial Monolayers. ACS Nano, 2019, 13, 3341-3352.	14.6	107
45	Seamless Fabrication and Threshold Engineering in Monolayer MoS₂ Dualâ€Gated Transistors via Hydrogen Silsesquioxane. Advanced Electronic Materials, 2019, 5, 1800888.	5.1	13
46	Biological Oneâ€Way Functions for Secure Key Generation. Advanced Theory and Simulations, 2019, 2, 1800154.	2.8	11
47	Mobility Deception in Nanoscale Transistors: An Untold Contact Story. Advanced Materials, 2019, 31, e1806020.	21.0	51
48	A roadmap for electronic grade 2D materials. 2D Materials, 2019, 6, 022001.	4.4	205
49	Electrochemical Polishing of Two-Dimensional Materials. ACS Nano, 2019, 13, 78-86.	14.6	33
50	Impact of Postâ€Lithography Polymer Residue on the Electrical Characteristics of MoS₂ and WSe₂ Field Effect Transistors. Advanced Materials Interfaces, 2019, 6, 1801321.	3.7	56
51	Contact engineering for 2D materials and devices. Chemical Society Reviews, 2018, 47, 3037-3058.	38.1	561
52	Three-Dimensional Integrated X-ray Diffraction Imaging of a Native Strain in Multi-Layered WSe₂. Nano Letters, 2018, 18, 1993-2000.	9.1	9
53	Diffusion-Controlled Epitaxy of Large Area Coalesced WSe₂ Monolayers on Sapphire. Nano Letters, 2018, 18, 1049-1056.	9.1	197
54	Quantum-Confined Electronic States Arising from the MoirÃ© Pattern of MoS₂â€“WSe₂ Heterobilayers. Nano Letters, 2018, 18, 1849-1855.	9.1	91

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55	Realizing Large-Scale, Electronic-Grade Two-Dimensional Semiconductors. ACS Nano, 2018, 12, 965-975.	14.6	172
56	Superior Electro-Oxidation and Corrosion Resistance of Monolayer Transition Metal Disulfides. ACS Applied Materials & Interfaces, 2018, 10, 4285-4294.	8.0	23
57	The electrothermal conductance and heat capacity of black phosphorus. Journal of Chemical Physics, 2018, 148, 104701.	3.0	1
58	Large scale 2D/3D hybrids based on gallium nitride and transition metal dichalcogenides. Nanoscale, 2018, 10, 336-341.	5.6	38
59	Low-temperature metalorganic chemical vapor deposition of molybdenum disulfide on multicomponent glass substrates. FlatChem, 2018, 11, 32-37.	5.6	11
60	In Situ Optical Tracking of Electroablation in Two-Dimensional Transition-Metal Dichalcogenides. ACS Applied Materials & Interfaces, 2018, 10, 40773-40780.	8.0	7
61	2- Transistor Schmitt Trigger based on 2D Electrostrictive Field Effect Transistors. , 2018, , .		3
62	Defect Dynamics in 2-D MoS₂ Probed by Using Machine Learning, Atomistic Simulations, and High-Resolution Microscopy. ACS Nano, 2018, 12, 8006-8016.	14.6	72
63	2D Materials for Ubiquitous Electronics. , 2018, , .		3
64	Research Update: Recent progress on 2D materials beyond graphene: From ripples, defects, intercalation, and valley dynamics to straintronics and power dissipation. APL Materials, 2018, 6, .	5.1	30
65	Mimicking Neurotransmitter Release in Chemical Synapses via Hysteresis Engineering in MoS₂ Transistors. ACS Nano, 2017, 11, 3110-3118.	14.6	217
66	The Prospect of Two-Dimensional Heterostructures: A Review of Recent Breakthroughs. IEEE Nanotechnology Magazine, 2017, 11, 6-17.	1.3	27
67	Anomalous Corrosion of Bulk Transition Metal Diselenides Leading to Stable Monolayers. ACS Applied Materials & Interfaces, 2017, 9, 39059-39068.	8.0	11
68	Stability of the tungsten diselenide and silicon carbide heterostructure against high energy proton exposure. Applied Physics Letters, 2017, 111, .	3.3	5
69	Facile Electrochemical Synthesis of 2D Monolayers for High-Performance Thin-Film Transistors. ACS Applied Materials & Interfaces, 2017, 9, 44617-44624.	8.0	22
70	2D-EFET â€" A novel beyond Boltzmann transistor. , 2017, , .		3
71	A Self-Limiting Electro-Ablation Technique for the Top-Down Synthesis of Large-Area Monolayer Flakes of 2D Materials. Scientific Reports, 2016, 6, 28195.	3.3	24
72	Transition Metal Dichalcogenide Schottky Barrier Transistors: A Device Analysis and Material Comparison. Series in Materials Science and Engineering, 2016, , 207-240.	0.1	20

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73	Two Dimensional Electrostrictive Field Effect Transistor (2D-EFET): A sub-60mV/decade Steep Slope Device with High ON current. Scientific Reports, 2016, 6, 34811.	3.3	51
74	60-1:Invited Paper: The Emerging Era of 2D Materials. Digest of Technical Papers SID International Symposium, 2016, 47, 813-815.	0.3	0
75	Low-frequency noise in MoSe2 field effect transistors. Applied Physics Letters, 2015, 106, .	3.3	47
76	A Small Signal Amplifier Based on Ionic Liquid Gated Black Phosphorous Field Effect Transistor. IEEE Electron Device Letters, 2015, 36, 621-623.	3.9	13
77	Nb-doped single crystalline MoS2 field effect transistor. Applied Physics Letters, 2015, 106, .	3.3	78
78	Beyond Graphene: Progress in Novel Two-Dimensional Materials and van der Waals Solids. Annual Review of Materials Research, 2015, 45, 1-27.	9.3	537
79	Recent Advances in Two-Dimensional Materials beyond Graphene. ACS Nano, 2015, 9, 11509-11539.	14.6	2,069
80	All Two-Dimensional, Flexible, Transparent, and Thinnest Thin Film Transistor. Nano Letters, 2014, 14, 2861-2866.	9.1	328
81	Toward Low-Power Electronics: Tunneling Phenomena in Transition Metal Dichalcogenides. ACS Nano, 2014, 8, 1681-1689.	14.6	162
82	Ionic gated WSe2 FETs: Towards transparent Schottky barriers. , 2014, , .		5
83	Ambipolar Phosphorene Field Effect Transistor. ACS Nano, 2014, 8, 11730-11738.	14.6	352
84	High gain, low noise, fully complementary logic inverter based on bi-layer WSe2 field effect transistors. Applied Physics Letters, 2014, 105, .	3.3	87
85	Effect of Diameter Variation on Electrical Characteristics of Schottky Barrier Indium Arsenide Nanowire Field-Effect Transistors. ACS Nano, 2014, 8, 6281-6287.	14.6	28
86	Tunable Transport Gap in Phosphorene. Nano Letters, 2014, 14, 5733-5739.	9.1	657
87	Evaluating the scalability of multilayer MoS<inf>2</inf> transistors. , 2013, , .		11
88	WSe2 field effect transistors with enhanced ambipolar characteristics. Applied Physics Letters, 2013, 103, .	3.3	334
89	High Performance Multilayer MoS₂ Transistors with Scandium Contacts. Nano Letters, 2013, 13, 100-105.	9.1	2,058
90	Where Does the Current Flow in Two-Dimensional Layered Systems?. Nano Letters, 2013, 13, 3396-3402.	9.1	223

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91	Screening and interlayer coupling in multilayer MoS₂. Physica Status Solidi - Rapid Research Letters, 2013, 7, 268-273.	2.4	143
92	On the scaling behavior of organic ferroelectric copolymer PVDF-TrFE for memory application. Organic Electronics, 2012, 13, 3326-3332.	2.6	15
93	Broken-Gap Tunnel MOSFET: A Constant-Slope Sub-60-mV/decade Transistor. IEEE Electron Device Letters, 2011, 32, 1367-1369.	3.9	33
94	On the Importance of Bandgap Formation in Graphene for Analog Device Applications. IEEE Nanotechnology Magazine, 2011, 10, 1093-1098.	2.0	20
95	FETRAM. An Organic Ferroelectric Material Based Novel Random Access Memory Cell. Nano Letters, 2011, 11, 4003-4007.	9.1	85
96	An all-graphene radio frequency low noise amplifier. , 2011, , .		7
97	Silicon Nanowire Tunneling Field-Effect Transistor Arrays: Improving Subthreshold Performance Using Excimer Laser Annealing. IEEE Transactions on Electron Devices, 2011, 58, 1822-1829.	3.0	47