A T Charlie Johnson

List of Publications by Year
in descending order

109 papers	7,098 citations	61857 43 h-index	56606 83 g-index
110 all docs	110 docs citations	110 times ranked	11936 citing authors

#	Article	IF	Citations
1	DNA Translocation through Graphene Nanopores. Nano Letters, 2010, 10, 2915-2921.	4.5	846
2	Photoluminescence and band gap modulation in graphene oxide. Applied Physics Letters, 2009, 94, .	1.5	494
3	Strong Excitonâ€“Plasmon Coupling in MoS₂ Coupled with Plasmonic Lattice. Nano Letters, 2016, 16, 1262-1269.	4.5	331
4	Raman Shifts in Electron-Irradiated Monolayer MoS₂. ACS Nano, 2016, 10, 4134-4142.	7.3	311
5	Band Alignment and Minigaps in Monolayer MoS₂-Graphene van der Waals Heterostructures. Nano Letters, 2016, 16, 4054-4061.	4.5	288
6	Effect of Substrate Roughness and Feedstock Concentration on Growth of Wafer-Scale Graphene at Atmospheric Pressure. Chemistry of Materials, 2011, 23, 1441-1447.	3.2	277
7	Seeded growth of highly crystalline molybdenum disulphide monolayers at controlled locations. Nature Communications, 2015, 6, 6128.	5.8	259
8	Fano Resonance and Spectrally Modified Photoluminescence Enhancement in Monolayer MoS₂ Integrated with Plasmonic Nanoantenna Array. Nano Letters, 2015, 15, 3646-3653.	4.5	246
9	Monolayer Single-Crystal 1Tâ€²-MoTe₂ Grown by Chemical Vapor Deposition Exhibits Weak Antilocalization Effect. Nano Letters, 2016, 16, 4297-4304.	4.5	205
10	Growth Mechanism of Hexagonal-Shape Graphene Flakes with Zigzag Edges. ACS Nano, 2011, 5, 9154-9160.	7.3	154
11	Scalable Production of High-Sensitivity, Label-Free DNA Biosensors Based on Back-Gated Graphene Field Effect Transistors. ACS Nano, 2016, 10, 8700-8704.	7.3	145
12	Frictional Behavior of Atomically Thin Sheets: Hexagonal-Shaped Graphene Islands Grown on Copper by Chemical Vapor Deposition. ACS Nano, 2014, 8, 5010-5021.	7.3	136
13	Electrical Tuning of Excitonâ€“Plasmon Polariton Coupling in Monolayer MoS₂ Integrated with Plasmonic Nanoantenna Lattice. Nano Letters, 2017, 17, 4541-4547.	4.5	117
14	Origin of Nanoscale Friction Contrast between Supported Graphene, MoS₂, and a Graphene/MoS₂ Heterostructure. Nano Letters, 2019, 19, 5496-5505.	4.5	115
15	The Nature of DNAâ€Baseâ€“Carbonâ€Nanotube Interactions. Small, 2010, 6, 31-34.	5.2	108
16	Scalable Production of Highly Sensitive Nanosensors Based on Graphene Functionalized with a Designed G Protein-Coupled Receptor. Nano Letters, 2014, 14, 2709-2714.	4.5	105
17	Monolayer WS₂ Nanopores for DNA Translocation with Light-Adjustable Sizes. ACS Nano, 2017, 11, 1937-1945.	7.3	102
18	Controlled doping of graphene using ultraviolet irradiation. Applied Physics Letters, 2012, 100, 253108.	1.5	94

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19	High-performance symmetric electrochemical capacitor based on graphene foam and nanostructured manganese oxide. AIP Advances, 2013, 3, .	0.6	86
20	Tunable Doping in Hydrogenated Single Layered Molybdenum Disulfide. ACS Nano, 2017, 11, 1755-1761.	7.3	86
21	Detection of Sub-fM DNA with Target Recycling and Self-Assembly Amplification on Graphene Field-Effect Biosensors. Nano Letters, 2018, 18, 3509-3515.	4.5	82
22	Large-area synthesis of high-quality monolayer 1Tâ€™-WTe ₂ flakes. 2D Materials, 2017, 4, 021008.	2.0	81
23	Highâ€On/Offâ€Ratio Graphene Nanoconstriction Fieldâ€Effect Transistor. Small, 2010, 6, 2748-2754.	5.2	80
24	Real-Time TEM Imaging of the Formation of Crystalline Nanoscale Gaps. Physical Review Letters, 2008, 100, 056805.	2.9	77
25	Scalable, non-invasive glucose sensor based on boronic acid functionalized carbon nanotube transistors. Applied Physics Letters, 2013, 102, .	1.5	73
26	Large area molybdenum disulphide- epitaxial graphene vertical Van der Waals heterostructures. Scientific Reports, 2016, 6, 26656.	1.6	73
27	Observing Oxygen Vacancy Driven Electroforming in Ptâ€“TiO₂â€“Pt Device via Strong Metal Support Interaction. Nano Letters, 2016, 16, 2139-2144.	4.5	73
28	DNA Nanotweezers and Graphene Transistor Enable Labelâ€Free Genotyping. Advanced Materials, 2018, 30, e1802440.	11.1	73
29	Differentiation of Complex Vapor Mixtures Using Versatile DNAâ€“Carbon Nanotube Chemical Sensor Arrays. ACS Nano, 2013, 7, 2800-2807.	7.3	71
30	Correlating Atomic Structure and Transport in Suspended Graphene Nanoribbons. Nano Letters, 2014, 14, 4238-4244.	4.5	71
31	Optomechanical Enhancement of Doubly Resonant 2D Optical Nonlinearity. Nano Letters, 2016, 16, 1631-1636.	4.5	71
32	Unidirectional Doubly Enhanced MoS₂ Emission via Photonic Fano Resonances. Nano Letters, 2017, 17, 6715-6720.	4.5	69
33	Scalable Production of Molybdenum Disulfide Based Biosensors. ACS Nano, 2016, 10, 6173-6179.	7.3	68
34	Intrinsic Properties of Suspended MoS₂ on SiO₂/Si Pillar Arrays for Nanomechanics and Optics. ACS Nano, 2018, 12, 3235-3242.	7.3	62
35	Defect engineering of single- and few-layer MoS ₂ by swift heavy ion irradiation. 2D Materials, 2017, 4, 015034.	2.0	60
36	Ambient effects on electrical characteristics of CVD-grown monolayer MoS2 field-effect transistors. Scientific Reports, 2017, 7, 4075.	1.6	57

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37	Interface dipole and band bending in the hybrid <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>p</mml:mi><mml:mo>â^’</mml:mo><mml:mi>n</mml:mi> heterojunction <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Mo</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mo>/</mml:mo><mml:mi>GaN</mml:mi><mml:mrow> Physical Review B, 2017, 96, .	1.1	57
38	Transfer of monolayer TMD WS2 and Raman study of substrate effects. Scientific Reports, 2017, 7, 43037.	1.6	51
39	Toward Quantifying the Electrostatic Transduction Mechanism in Carbon Nanotube Molecular Sensors. Journal of the American Chemical Society, 2012, 134, 14318-14321.	6.6	48
40	Large-area epitaxial growth of curvature-stabilized ABC trilayer graphene. Nature Communications, 2020, 11, 546.	5.8	47
41	DNA-decorated graphene nanomesh for detection of chemical vapors. Applied Physics Letters, 2013, 103, 183110.	1.5	45
42	Scalable arrays of chemical vapor sensors based on DNA-decorated graphene. Nano Research, 2014, 7, 95-103.	5.8	45
43	Electronic Transport of Recrystallized Freestanding Graphene Nanoribbons. ACS Nano, 2015, 9, 3510-3520.	7.3	44
44	Scalable Production of Sensor Arrays Based on High-Mobility Hybrid Graphene Field Effect Transistors. ACS Applied Materials & Interfaces, 2016, 8, 27546-27552.	4.0	44
45	Crystalline Bilayer Graphene with Preferential Stacking from Niâ€“Cu Gradient Alloy. ACS Nano, 2018, 12, 2275-2282.	7.3	43
46	Effect of conductive additives to gel electrolytes on activated carbon-based supercapacitors. AIP Advances, 2015, 5, .	0.6	42
47	Synthesis and Physical Properties of Phase-Engineered Transition Metal Dichalcogenide Monolayer Heterostructures. ACS Nano, 2017, 11, 8619-8627.	7.3	42
48	Graphene-protein bioelectronic devices with wavelength-dependent photoresponse. Applied Physics Letters, 2012, 100, .	1.5	41
49	Electrolytic phototransistor based on graphene-MoS2 van der Waals p-n heterojunction with tunable photoresponse. Applied Physics Letters, 2016, 109, .	1.5	41
50	Highly active single-layer MoS₂ catalysts synthesized by swift heavy ion irradiation. Nanoscale, 2018, 10, 22908-22916.	2.8	39
51	Controlled Growth of Large-Area Bilayer Tungsten Diselenides with Lateral Pâ€“N Junctions. ACS Nano, 2019, 13, 10490-10498.	7.3	39
52	Intrinsic Phonon Bands in High-Quality Monolayer Tâ€² Molybdenum Ditelluride. ACS Nano, 2017, 11, 814-820.	7.3	37
53	Gigahertz topological valley Hall effect in nanoelectromechanical phononic crystals. Nature Electronics, 2022, 5, 157-163.	13.1	37
54	Nanoscale Friction Behavior of Transition-Metal Dichalcogenides: Role of the Chalcogenide. ACS Nano, 2020, 14, 16013-16021.	7.3	36

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55	Quantifying the effect of ionic screening with protein-decorated graphene transistors. Biosensors and Bioelectronics, 2017, 89, 689-692.	5.3	35
56	In Situ Transmission Electron Microscopy Modulation of Transport in Graphene Nanoribbons. ACS Nano, 2016, 10, 4004-4010.	7.3	33
57	Loss and coupling tuning via heterogeneous integration of MoS2 layers in silicon photonics [Invited]. Optical Materials Express, 2019, 9, 751.	1.6	32
58	Dynamic Photochemical and Optoelectronic Control of Photonic Fano Resonances via Monolayer MoS₂ Trions. Nano Letters, 2018, 18, 957-963.	4.5	31
59	Understanding the Different Excitonâ€“Plasmon Coupling Regimes in Two-Dimensional Semiconductors Coupled with Plasmonic Lattices: A Combined Experimental and Unified Equation of Motion Approach. ACS Photonics, 2018, 5, 192-204.	3.2	30
60	A carbon nanotube immunosensor for Salmonella. AIP Advances, 2011, 1, .	0.6	29
61	Inverting polar domains via electrical pulsing in metallic germanium telluride. Nature Communications, 2017, 8, 15033.	5.8	29
62	Multimodal in vivo recording using transparent graphene microelectrodes illuminates spatiotemporal seizure dynamics at the microscale. Communications Biology, 2021, 4, 136.	2.0	28
63	DNA-Coated Nanosensors for Breath Analysis. IEEE Sensors Journal, 2010, 10, 159-166.	2.4	27
64	DNA-decorated carbon nanotubes for chemical sensing. Physica Status Solidi (B): Basic Research, 2006, 243, 3252-3256.	0.7	24
65	Facile fabrication of a ultraviolet tunable MoS2/p-Si junction diode. Applied Physics Letters, 2015, 106, .	1.5	21
66	Graphene transistor arrays functionalized with genetically engineered antibody fragments for Lyme disease diagnosis. 2D Materials, 2020, 7, 024001.	2.0	19
67	An Aptamer-Based Biosensor for the Azole Class of Antifungal Drugs. MSphere, 2017, 2, .	1.3	18
68	Scalable graphene aptasensors for drug quantification. AIP Advances, 2017, 7, .	0.6	16
69	MoS₂-enabled dual-mode optoelectronic biosensor using a water soluble variant of Âμ-opioid receptor for opioid peptide detection. 2D Materials, 2020, 7, 014004.	2.0	15
70	Electronic Transport in Heterostructures of Chemical Vapor Deposited Graphene and Hexagonal Boron Nitride. Small, 2015, 11, 1402-1408.	5.2	14
71	Quantifying the intrinsic surface charge density and charge-transfer resistance of the graphene-solution interface through bias-free low-level charge measurement. Applied Physics Letters, 2016, 109, .	1.5	14
72	Ambipolar transport in CVD grown MoSe2 monolayer using an ionic liquid gel gate dielectric. AIP Advances, 2018, 8, .	0.6	14

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73	Attomolar Detection of ssDNA Without Amplification and Capture of Long Target Sequences With Graphene Biosensors. IEEE Sensors Journal, 2020, 20, 5720-5724.	2.4	14
74	Ultrathin WS₂â€onâ€Glass Photonic Crystal for Selfâ€Resonant Excitonâ€Polaritonics. Advanced Optical Materials, 2020, 8, 1901988.	3.6	14
75	Rapid Growth of Monolayer MoSe₂ Films for Largeâ€Area Electronics. Advanced Electronic Materials, 2021, 7, 2001219.	2.6	14
76	Growth of graphene underlayers by chemical vapor deposition. AIP Advances, 2013, 3, .	0.6	13
77	Solvothermal synthesis of NiAl double hydroxide microspheres on a nickel foam-graphene as an electrode material for pseudo-capacitors. AIP Advances, 2014, 4, 097122.	0.6	13
78	Photothermal characterization of MoS2 emission coupled to a microdisk cavity. Applied Physics Letters, 2016, 109, .	1.5	13
79	All-Electronic Quantification of Neuropeptideâ€“Receptor Interaction Using a Bias-Free Functionalized Graphene Microelectrode. ACS Nano, 2018, 12, 4218-4223.	7.3	13
80	Phase Transition in a Memristive Suspended MoS₂ Monolayer Probed by Opto- and Electro-Mechanics. ACS Nano, 2020, 14, 13611-13618.	7.3	13
81	Exploring ovarian cancer screening using a combined sensor approach: A pilot study. AIP Advances, 2020, 10, .	0.6	13
82	Characterization of a Computationally Designed Water-soluble Human Î¼-Opioid Receptor Variant Using Available Structural Information. Anesthesiology, 2014, 121, 866-875.	1.3	13
83	Recentadvances in the propertiesand synthesis of bilayer graphene and transition metal dichalcogenides. JPhys Materials, 2020, 3, 042003.	1.8	11
84	Scalable chemical vapor deposited graphene field-effect transistors for bio/chemical assay. Applied Physics Reviews, 2021, 8, .	5.5	10
85	Strain and Spin-Orbit Coupling Engineering in Twisted WS2/Graphene Heterobilayer. Nanomaterials, 2021, 11, 2921.	1.9	10
86	Structural and magnetic properties of Îµ-Fe1â^'xCoxSi thin films deposited via pulsed laser deposition. Applied Physics Letters, 2009, 94, 232503.	1.5	9
87	Atomic-scale patterning in two-dimensional van der waals superlattices. Nanotechnology, 2019, 31, 105302.	1.3	8
88	Monolayer Excitonic Emission for Imaging Spatial Dispersion of Photonic Crystals. ACS Photonics, 2019, 6, 2312-2319.	3.2	7
89	High-Throughput Nanogap Formation Using Single Ramp Feedback Control. IEEE Nanotechnology Magazine, 2011, 10, 806-809.	1.1	6
90	Controlled doping of graphene by impurity charge compensation via a polarized ferroelectric polymer. Journal of Applied Physics, 2020, 127, .	1.1	6

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91	Multi-order phononic frequency comb generation within a MoS2 electromechanical resonator. Applied Physics Letters, 2021, 119, .	1.5	6
92	pH Sensing Properties of Flexible, Biasâ€Free Graphene Microelectrodes in Complex Fluids: From Phosphate Buffer Solution to Human Serum. Small, 2017, 13, 1700564.	5.2	5
93	Quantum-Well Bound States in Graphene Heterostructure Interfaces. Physical Review Letters, 2021, 127, 086805.	2.9	5
94	MoS2 based dual input logic AND gate. AIP Advances, 2016, 6, 125041.	0.6	4
95	Structural-functional analysis of engineered protein-nanoparticle assemblies using graphene microelectrodes. Chemical Science, 2017, 8, 5329-5334.	3.7	4
96	Characterization of an engineered water-soluble variant of the full-length human mu opioid receptor. Journal of Biomolecular Structure and Dynamics, 2020, 38, 4364-4370.	2.0	4
97	Water Soluble G-protein Coupled Receptor Enabled Biosensors. Translational Perioperative and Pain Medicine, 2019, 6, 98-103.	0.0	4
98	Azimuthally Polarized and Unidirectional Excitonic Emission from Deep Subwavelength Transition Metal Dichalcogenide Annular Heterostructures. ACS Photonics, 2021, 8, 2861-2867.	3.2	3
99	Ionic liquid gel gate tunable p-Si/MoS2 heterojunction p-n diode. AIP Advances, 2020, 10, 125225.	0.6	3
100	Scalable Arrays of Chemical Vapor Sensors Based on DNA-Decorated Graphene. Methods in Molecular Biology, 2019, 2027, 163-170.	0.4	2
101	Multimodal, Multiscale Insights into Hippocampal Seizures Enabled by Transparent, Graphene-Based Microelectrode Arrays. ENeuro, 2022, 9, ENEURO.0386-21.2022.	0.9	2
102	Rectifying effect in a MoS2 monolayer crossed with an electro-spun PEDOT-PSS nano-ribbon. SN Applied Sciences, 2019, 1, 1.	1.5	1
103	Impurity charge compensation in graphene by a polarized ferroelectric polymer and its effect on charge transport near the Dirac point. AIP Advances, 2021, 11, .	0.6	1
104	Temperature dependent charge transport in ferroelectrically gated graphene far from the Dirac point. AIP Advances, 2022, 12, 075008.	0.6	1
105	Gas Phase Electronic Sensing Using Single Wall Carbon Nanotube/Boipolymer Hybrids. Materials Research Society Symposia Proceedings, 2007, 1057, 1.	0.1	0
106	Effect of Thermal Treatments on the Transduction Behaviors of Conductometric Hydrogen Gas Sensors Integrated with HCl-Doped Polyaniline Nanofibers. Materials Research Society Symposia Proceedings, 2007, 1042, 1.	0.1	0
107	Editorial: Welcome to AIP Advancesâ€"a new open-access journal from the American Institute of Physics. AIP Advances, 2011, 1, 010401.	0.6	0
108	Fabrication and Simultaneous Electrical Measurement of Graphene Nanoribbon Devices Inside a S/TEM. Microscopy and Microanalysis, 2015, 21, 1155-1156.	0.2	0

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109	The C-Terminus of the mu Opioid Receptor Is Critical in G-Protein Interaction as Demonstrated by a Novel Graphene Biosensor. IEEE Sensors Journal, 2021, 21, 5758-5762.	2.4	0