Deji Akinwande

List of Publications by Year
in descending order

153 papers	20,776 citations	20817 60 h-index	14759 127 g-index
155 all docs	155 docs citations	155 times ranked	24128 citing authors

#	Article	IF	Citations
1	Recent Advances in Two-Dimensional Materials beyond Graphene. ACS Nano, 2015, 9, 11509-11539.	14.6	2,069
2	Recent development of two-dimensional transition metal dichalcogenides and their applications. Materials Today, 2017, 20, 116-130.	14.2	1,852
3	Two-dimensional flexible nanoelectronics. Nature Communications, 2014, 5, 5678.	12.8	1,533
4	Silicene field-effect transistors operating at room temperature. Nature Nanotechnology, 2015, 10, 227-231.	31.5	1,429
5	Graphene and two-dimensional materials for silicon technology. Nature, 2019, 573, 507-518.	27.8	936
6	A review on mechanics and mechanical properties of 2D materialsâ€"Graphene and beyond. Extreme Mechanics Letters, 2017, 13, 42-77.	4.1	920
7	Buckled two-dimensional Xene sheets. Nature Materials, 2017, 16, 163-169.	27.5	641
8	Pressure-induced semiconducting to metallic transition in multilayered molybdenum disulphide. Nature Communications, 2014, 5, 3731.	12.8	495
9	Graphene Electronic Tattoo Sensors. ACS Nano, 2017, 11, 7634-7641.	14.6	476
10	Recommended Methods to Study Resistive Switching Devices. Advanced Electronic Materials, 2019, 5, 1800143.	5.1	452
11	High-Performance, Highly Bendable MoS₂ Transistors with High-K Dielectrics for Flexible Low-Power Systems. ACS Nano, 2013, 7, 5446-5452.	14.6	445
12	Flexible Black Phosphorus Ambipolar Transistors, Circuits and AM Demodulator. Nano Letters, 2015, 15, 1883-1890.	9.1	394
13	Atomristor: Nonvolatile Resistance Switching in Atomic Sheets of Transition Metal Dichalcogenides. Nano Letters, 2018, 18, 434-441.	9.1	375
14	Toward air-stable multilayer phosphorene thin-films and transistors. Scientific Reports, 2015, 5, 8989.	3.3	344
15	Enhancement of the Electrical Properties of Graphene Grown by Chemical Vapor Deposition via Controlling the Effects of Polymer Residue. Nano Letters, 2013, 13, 1462-1467.	9.1	324
16	Pressure-Dependent Optical and Vibrational Properties of Monolayer Molybdenum Disulfide. Nano Letters, 2015, 15, 346-353.	9.1	284
17	Silicene, silicene derivatives, and their device applications. Chemical Society Reviews, 2018, 47, 6370-6387.	38.1	261
18	Recent Progress on Stability and Passivation of Black Phosphorus. Advanced Materials, 2018, 30, e1704749.	21.0	248

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19	Insulators for 2D nanoelectronics: the gap to bridge. Nature Communications, 2020, 11, 3385.	12.8	241
20	Selective-Area Fluorination of Graphene with Fluoropolymer and Laser Irradiation. Nano Letters, 2012, 12, 2374-2378.	9.1	222
21	Wafer-scale integration of two-dimensional materials in high-density memristive crossbar arrays for artificial neural networks. Nature Electronics, 2020, 3, 638-645.	26.0	222
22	Memristive technologies for data storage, computation, encryption, and radio-frequency communication. Science, 2022, 376, .	12.6	220
23	Chlorination of Reduced Graphene Oxide Enhances the Dielectric Constant of Reduced Graphene Oxide/Polymer Composites. Advanced Materials, 2013, 25, 2308-2313.	21.0	176
24	Thinnest Nonvolatile Memory Based on Monolayer hâ€BN. Advanced Materials, 2019, 31, e1806790.	21.0	174
25	2D materials for future heterogeneous electronics. Nature Communications, 2022, 13, 1392.	12.8	174
26	On the mobility and contact resistance evaluation for transistors based on MoS2 or two-dimensional semiconducting atomic crystals. Applied Physics Letters, 2014, 104, .	3.3	173
27	Bubble-Pen Lithography. Nano Letters, 2016, 16, 701-708.	9.1	170
28	Largeâ€Area Monolayer MoS₂ for Flexible Lowâ€Power RF Nanoelectronics in the GHz Regime. Advanced Materials, 2016, 28, 1818-1823.	21.0	161
29	Synthesis of High Quality Monolayer Graphene at Reduced Temperature on Hydrogen-Enriched Evaporated Copper (111) Films. ACS Nano, 2012, 6, 2319-2325.	14.6	160
30	Long-Term Stability and Reliability of Black Phosphorus Field-Effect Transistors. ACS Nano, 2016, 10, 9543-9549.	14.6	158
31	Observation of single-defect memristor in an MoS2 atomic sheet. Nature Nanotechnology, 2021, 16, 58-62.	31.5	148
32	Radio Frequency Transistors and Circuits Based on CVD MoS₂. Nano Letters, 2015, 15, 5039-5045.	9.1	144
33	Nanostructured Hybrid Transparent Conductive Films with Antibacterial Properties. ACS Nano, 2012, 6, 5157-5163.	14.6	139
34	Black Phosphorus Flexible Thin Film Transistors at Gighertz Frequencies. Nano Letters, 2016, 16, 2301-2306.	9.1	137
35	Fully Integrated Graphene and Carbon Nanotube Interconnects for Gigahertz High-Speed CMOS Electronics. IEEE Transactions on Electron Devices, 2010, 57, 3137-3143.	3.0	127
36	25 GHz Embedded-Gate Graphene Transistors with High-K Dielectrics on Extremely Flexible Plastic Sheets. ACS Nano, 2013, 7, 7744-7750.	14.6	127

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37	Zero-static power radio-frequency switches based on MoS2 atomristors. Nature Communications, 2018, 9, 2524.	12.8	126
38	Efficient Visible-Light Photocatalysis of 2D-MXene Nanohybrids with Gd³⁺- and Sn⁴⁺-Codoped Bismuth Ferrite. ACS Omega, 2018, 3, 13828-13836.	3.5	121
39	Pressure-Modulated Conductivity, Carrier Density, and Mobility of Multilayered Tungsten Disulfide. ACS Nano, 2015, 9, 9117-9123.	14.6	120
40	Ti₃C₂-MXene/Bismuth Ferrite Nanohybrids for Efficient Degradation of Organic Dyes and Colorless Pollutants. ACS Omega, 2019, 4, 20530-20539.	3.5	119
41	Enhanced Dielectric Performance in Polymer Composite Films with Carbon Nanotubeâ€Reduced Graphene Oxide Hybrid Filler. Small, 2014, 10, 3405-3411.	10.0	116
42	Imperceptible electrooculography graphene sensor system for humanâ€“robot interface. Npj 2D Materials and Applications, 2018, 2, .	7.9	114
43	Simultaneous Transfer and Doping of CVD-Grown Graphene by Fluoropolymer for Transparent Conductive Films on Plastic. ACS Nano, 2012, 6, 1284-1290.	14.6	113
44	CMOS-Compatible Synthesis of Large-Area, High-Mobility Graphene by Chemical Vapor Deposition of Acetylene on Cobalt Thin Films. ACS Nano, 2011, 5, 7198-7204.	14.6	109
45	Selective Mechanical Transfer of Graphene from Seed Copper Foil Using Rate Effects. ACS Nano, 2015, 9, 1325-1335.	14.6	104
46	Temperature and Thickness Dependences of the Anisotropic Inâ€Plane Thermal Conductivity of Black Phosphorus. Advanced Materials, 2017, 29, 1603756.	21.0	99
47	Uncovering edge states and electrical inhomogeneity in MoS ₂ field-effect transistors. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8583-8588.	7.1	94
48	Origin of superconductivity in the Weyl semimetal <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>WT</mml:mi><mml:msub><mml:mi mathvariant="normal">e</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> under pressure. Physical Review B, 2016, 94, .	3.2	91
49	Toward 300 mm Wafer-Scalable High-Performance Polycrystalline Chemical Vapor Deposited Graphene Transistors. ACS Nano, 2014, 8, 10471-10479.	14.6	87
50	Large-Area Dry Transfer of Single-Crystalline Epitaxial Bismuth Thin Films. Nano Letters, 2016, 16, 6931-6938.	9.1	87
51	Analogue switches made from boron nitride monolayers for application in 5G and terahertz communication systems. Nature Electronics, 2020, 3, 479-485.	26.0	86
52	Thermal Oxidation of WSe₂ Nanosheets Adhered on SiO₂/Si Substrates. Nano Letters, 2015, 15, 4979-4984.	9.1	84
53	Continuous cuffless monitoring of arterial blood pressure via graphene bioimpedance tattoos. Nature Nanotechnology, 2022, 17, 864-870.	31.5	79
54	Graphene Synthesis via Magnetic Inductive Heating of Copper Substrates. ACS Nano, 2013, 7, 7495-7499.	14.6	77

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55	Machine Learning-Enabled Design of Point Defects in 2D Materials for Quantum and Neuromorphic Information Processing. ACS Nano, 2020, 14, 13406-13417.	14.6	75
56	Uniform Wafer-Scale Chemical Vapor Deposition of Graphene on Evaporated Cu (111) Film with Quality Comparable to Exfoliated Monolayer. Journal of Physical Chemistry C, 2012, 116, 24068-24074.	3.1	69
57	Support-Free Transfer of Ultrasmooth Graphene Films Facilitated by Self-Assembled Monolayers for Electronic Devices and Patterns. ACS Nano, 2016, 10, 1404-1410.	14.6	69
58	A Library of Atomically Thin 2D Materials Featuring the Conductiveâ€Point Resistive Switching Phenomenon. Advanced Materials, 2021, 33, e2007792.	21.0	67
59	Impact of contact resistance on the transconductance and linearity of graphene transistors. Applied Physics Letters, 2011, 98, .	3.3	64
60	Flexible and Transparent Dielectric Film with a High Dielectric Constant Using Chemical Vapor Deposition-Grown Graphene Interlayer. ACS Nano, 2014, 8, 269-274.	14.6	63
61	Silicon Nanosheets: Crossover between Multilayer Silicene and Diamond-like Growth Regime. ACS Nano, 2017, 11, 3376-3382.	14.6	61
62	Embedded-gate graphene transistors for high-mobility detachable flexible nanoelectronics. Applied Physics Letters, 2012, 100, .	3.3	60
63	Fabrication, characterization and applications of graphene electronic tattoos. Nature Protocols, 2021, 16, 2395-2417.	12.0	59
64	Nb-Doped MXene With Enhanced Energy Storage Capacity and Stability. Frontiers in Chemistry, 2020, 8, 168.	3.6	57
65	Analytical ballistic theory of carbon nanotube transistors: Experimental validation, device physics, parameter extraction, and performance projection. Journal of Applied Physics, 2008, 104, 124514.	2.5	54
66	High-Performance Current Saturating Graphene Field-Effect Transistor With Hexagonal Boron Nitride Dielectric on Flexible Polymeric Substrates. IEEE Electron Device Letters, 2013, 34, 172-174.	3.9	53
67	Graphene-Based Plasmonic Platform for Reconfigurable Terahertz Nanodevices. ACS Photonics, 2014, 1, 647-654.	6.6	53
68	Direct Delamination of Graphene for Highâ€Performance Plastic Electronics. Small, 2014, 10, 694-698.	10.0	52
69	Neuromorphic Active Pixel Image Sensor Array for Visual Memory. ACS Nano, 2021, 15, 15362-15370.	14.6	52
70	Multipurpose and Reusable Ultrathin Electronic Tattoos Based on PtSe₂ and PtTe₂. ACS Nano, 2021, 15, 2800-2811.	14.6	46
71	Phonon-Mediated Interlayer Charge Separation and Recombination in a MoSe₂/WSe₂ Heterostructure. Nano Letters, 2021, 21, 2165-2173.	9.1	46
72	Pressureâ€Induced Charge Transfer Doping of Monolayer Graphene/MoS₂ Heterostructure. Small, 2016, 12, 4063-4069.	10.0	45

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73	Multi-finger flexible graphene field effect transistors with high bendability. Applied Physics Letters, 2012, 101, .	3.3	42
74	Extremely High-Frequency Flexible Graphene Thin-Film Transistors. IEEE Electron Device Letters, 2016, 37, 512-515.	3.9	42
75	Novel physical sensors using evanescent microwave probes. Review of Scientific Instruments, 1999, 70, 3381-3386.	1.3	41
76	Direct Observation of Poly(Methyl Methacrylate) Removal from a Graphene Surface. Chemistry of Materials, 2017, 29, 2033-2039.	6.7	41
77	Nanoradiator-Mediated Deterministic Opto-Thermoelectric Manipulation. ACS Nano, 2018, 12, 10383-10392.	14.6	41
78	Real-time detection of ochratoxin A in wine through insight of aptamer conformation in conjunction with graphene field-effect transistor. Biosensors and Bioelectronics, 2022, 200, 113890.	10.1	41
79	Monolithic Integration of CMOS VLSI and Carbon Nanotubes for Hybrid Nanotechnology Applications. IEEE Nanotechnology Magazine, 2008, 7, 636-639.	2.0	40
80	Mixed-mode traction-separation relations between graphene and copper by blister tests. International Journal of Solids and Structures, 2016, 84, 147-159.	2.7	39
81	3D integrated monolayer grapheneâ€“Si CMOS RF gas sensor platform. Npj 2D Materials and Applications, 2017, 1, .	7.9	38
82	Transformation of the Electrical Characteristics of Graphene Field-Effect Transistors with Fluoropolymer. ACS Applied Materials & Interfaces, 2013, 5, 16-20.	8.0	37
83	Chemical-sensitive graphene modulator with a memory effect for internet-of-things applications. Microsystems and Nanoengineering, 2016, 2, 16018.	7.0	36
84	Visualization of Local Conductance in MoS₂/WSe₂ Heterostructure Transistors. Nano Letters, 2019, 19, 1976-1981.	9.1	36
85	Plasmonâ€“trion and plasmonâ€“exciton resonance energy transfer from a single plasmonic nanoparticle to monolayer MoS2. Nanoscale, 2017, 9, 13947-13955.	5.6	35
86	Optothermoplasmonic Nanolithography for Onâ€Demand Patterning of 2D Materials. Advanced Functional Materials, 2018, 28, 1803990.	14.9	35
87	Anisotropic Electronâ€“Phonon Interactions in Angle-Resolved Raman Study of Strained Black Phosphorus. ACS Nano, 2018, 12, 12512-12522.	14.6	33
88	Rollâ€toâ€Roll Dry Transfer of Largeâ€Scale Graphene. Advanced Materials, 2022, 34, e2106615.	21.0	32
89	Lithium-ion electrolytic substrates for sub-1V high-performance transition metal dichalcogenide transistors and amplifiers. Nature Communications, 2020, 11, 3203.	12.8	31
90	Monolayer molybdenum disulfide switches for 6G communication systems. Nature Electronics, 2022, 5, 367-373.	26.0	31

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91	A zero power harmonic transponder sensor for ubiquitous wireless Î¼L liquid-volume monitoring. Scientific Reports, 2016, 6, 18795.	3.3	29
92	Layer-by-Layer Assembly of Two-Dimensional Colloidal Cu₂Se Nanoplates and Their Layer-Dependent Conductivity. Chemistry of Materials, 2016, 28, 4307-4314.	6.7	28
93	Graphene-Based Biosensor for Early Detection of Iron Deficiency. Sensors, 2020, 20, 3688.	3.8	28
94	An exactly solvable model for the graphene transistor in the quantum capacitance limit. Applied Physics Letters, 2012, 101, 053501.	3.3	27
95	Mixed-Mode Interactions Between Graphene and Substrates by Blister Tests. Journal of Applied Mechanics, Transactions ASME, 2015, 82, .	2.2	25
96	Integrated ultra-high-performance graphene optical modulator. Nanophotonics, 2022, 11, 4011-4016.	6.0	24
97	Chemical vapor deposition of hexagonal boron nitride on metal-coated wafers and transfer-free fabrication of resistive switching devices. 2D Materials, 2019, 6, 035021.	4.4	23
98	Synthesis and characterization of Cr2C MXenes. Journal of Materials Research, 2021, 36, 1980-1989.	2.6	23
99	A comprehensive investigation of MoO₃based resistive random access memory. RSC Advances, 2020, 10, 19337-19345.	3.6	22
100	Reduced Graphene Oxide Tattoo as Wearable Proximity Sensor. Advanced Electronic Materials, 2021, 7, 2001214.	5.1	22
101	Oxygen-assisted synthesis of hBN films for resistive random access memories. Applied Physics Letters, 2019, 115, .	3.3	21
102	Disassembling Silicene from Native Substrate and Transferring onto an Arbitrary Target Substrate. Advanced Functional Materials, 2020, 30, 2004546.	14.9	21
103	Understanding of multiple resistance states by current sweeping in MoS₂-based non-volatile memory devices. Nanotechnology, 2020, 31, 465206.	2.6	19
104	Electron irradiation-induced defects for reliability improvement in monolayer MoS2-based conductive-point memory devices. Npj 2D Materials and Applications, 2022, 6, .	7.9	18
105	High-performance flexible nanoelectronics: 2D atomic channel materials for low-power digital and high-frequency analog devices. , 2013, , .		17
106	Electrical Characterization of Graphene-based e-Tattoos for Bio-Impedance-based Physiological Sensing. , 2019, , .		17
107	Thermoelectric effect and devices on <scp>IVA</scp> and <scp>VA</scp> Xenes. InformaÄnÃ-MateriÃ¡ly, 2021, 3, 271-292.	17.3	17
108	Mixed Ionicâ€Electronic Charge Transport in Layered Blackâ€Phosphorus for Lowâ€Power Memory. Advanced Functional Materials, 2022, 32, 2107068.	14.9	16

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109	Wafer-Scalable Single-Layer Amorphous Molybdenum Trioxide. ACS Nano, 2022, 16, 3756-3767.	14.6	16
110	Electron redistribution and energy transfer in graphene/MoS2 heterostructure. Applied Physics Letters, 2019, 114, .	3.3	15
111	Large-signal model of 2DFETs: compact modeling of terminal charges and intrinsic capacitances. Npj 2D Materials and Applications, 2019, 3, .	7.9	15
112	High-frequency prospects of 2D nanomaterials for flexible nanoelectronics from baseband to sub-THz devices. , 2015, , .		14
113	Structural, vibrational, and electronic topological transitions of Bi1.5Sb0.5Te1.8Se1.2 under pressure. Journal of Applied Physics, 2018, 123, .	2.5	14
114	Two-Step Growth of Uniform Monolayer MoS₂ Nanosheets by Metalâ€“Organic Chemical Vapor Deposition. ACS Omega, 2021, 6, 10343-10351.	3.5	14
115	Sulfurization Engineering of Oneâ€Step Lowâ€Temperature MoS₂ and WS₂ Thin Films for Memristor Device Applications. Advanced Electronic Materials, 2022, 8, 2100515.	5.1	14
116	Atomic Electrostatic Maps of Point Defects in MoS₂. Nano Letters, 2021, 21, 10157-10164.	9.1	14
117	Graphene electronic tattoos 2.0 with enhanced performance, breathability and robustness. Npj 2D Materials and Applications, 2022, 6, .	7.9	14
118	Properties and Applications of Electrically Small Folded Ellipsoidal Helix Antenna. IEEE Antennas and Wireless Propagation Letters, 2012, 11, 678-681.	4.0	13
119	Direct growth of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> on electrolytic substrate and realization of high-mobility transistors. Physical Review Materials, 2021, 5, .	2.4	12
120	Growth Mechanisms and Morphology Engineering of Atomic Layer-Deposited WS₂. ACS Applied Materials & Interfaces, 2021, 13, 43115-43122.	8.0	12
121	Electrically small folded ellipsoidal helix antenna for medical implant applications. , 2011, , .		11
122	Printing functional atomic layers. Nature Nanotechnology, 2017, 12, 287-288.	31.5	10
123	Non-volatile RF and mm-wave Switches Based on Monolayer hBN. , 2019, , .		10
124	Wafer-Scale Synthesis of WS ₂ Films with In Situ Controllable p-Type Doping by Atomic Layer Deposition. Research, 2021, 2021, 9862483.	5.7	10
125	Distributed Amplifiers Based on Spindt-Type Field-Emission Nanotriodes. IEEE Nanotechnology Magazine, 2012, 11, 1201-1211.	2.0	9
126	Towards the design and fabrication of graphene based flexible GHz radio receiver systems. , 2014, , .		9

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127	ReSe2-Based RRAM and Circuit-Level Model for Neuromorphic Computing. Frontiers in Nanotechnology, 2021, 3, .	4.8	9
128	Resistance state evolution under constant electric stress on a MoS₂ non-volatile resistive switching device. RSC Advances, 2020, 10, 42249-42255.	3.6	8
129	State-of-the-art graphene transistors on hexagonal boron nitride, high-k, and polymeric films for GHz flexible analog nanoelectronics. , 2012, , .		7
130	Composition-dependent structural transition in epitaxial <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Bi</mml:mi><mml:mrow><mml:mn>1</mml:mn></mml:mrow></mml:msub><mml:mn>1</mml:mn></mml:mrow></mml:math> thin films on Si(111). Physical Review Materials, 2019, 3, .	2.4	6
131	Impact of contact and access resistances in graphene field-effect transistors on quartz substrates for radio frequency applications. Applied Physics Letters, 2014, 104, .	3.3	4
132	Flexible graphite antennas for plastic electronics. , 2014, , .		3
133	An RRAM with a 2D Material Embedded Double Switching Layer for Neuromorphic Computing. , 2018, , .		3
134	A Case of Metastatic Uterine Tumor Originating from Small-Cell Lung Cancer (SCLC) Mimicking Uterine Sarcoma. Case Reports in Obstetrics and Gynecology, 2021, 2021, 1-4.	0.3	3
135	Dual band electrically small non-uniform pitch ellipsoidal helix antenna for cardiac pacemakers. , 2013, , .		2
136	Graphene based GHz flexible nanoelectronics and radio receiver systems (Invited). , 2015, , .		2
137	Atomristors: Non-Volatile Resistance Switching in 2D Monolayers. , 2020, , .		2
138	On the stochastic nature of conductive points formation and their effects on reliability of MoS2 RRAM: Experimental characterization and Monte Carlo simulation. Microelectronics Reliability, 2021, 126, 114274.	1.7	2
139	Highly bendable high-mobility graphene field effect transistors with multi-finger embedded gates on flexible substrates. , 2012, , .		1
140	Dual band electrically small non-uniform pitch ellipsoidal helix antenna for cardiac pacemakers. , 2013, , .		1
141	State-of-the-art flexible 2D nanoelectronics based on graphene and MoS<inf>2</inf>. , 2013, , .		1
142	Flexible 2D nanoelectronics from baseband to sub-THz transistors and circuits. , 2016, , .		1
143	A Small-Signal Description of Black-Phosphorus Transistor Technologies for High-Frequency Applications. IEEE Microwave and Wireless Components Letters, 2021, 31, 1055-1058.	3.2	1
144	Memristors Based on 2D Monolayer Materials. , 0, , .		1

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145	2D RRAM and Verilog-A model for Neuromorphic Computing. , 2021, , .		1
146	Electronic Tattoos. , 2022, , .		1
147	Integration paths for Xenes. , 2022, , 405-438.		1
148	Dual band electrically small non-uniform pitch ellipsoidal helix antenna for cardiac pacemakers. , 2013, , .		0
149	Dual band electrically small non-uniform pitch ellipsoidal helix antenna for cardiac pacemakers. , 2013, , .		0
150	Electrical performance enhancement of 20 nm scale graphene nanoribbon field-effect transistors with dipolar molecules. , 2016, , .		0
151	Black phosphorus flexible thin film transistors and GHz circuit applications. , 2017, , .		0
152	2D nanoelectronics: From graphene to silicene and beyond. , 2017, , .		0
153	Tanks and Truth. ACS Nano, 2022, 16, 4975-4976.	14.6	0