Stephen J Mcdonnell

List of Publications by Year
in descending order

82 papers	6,976 citations	109137 35 h-index	66788 78 g-index
82 all docs	82 docs citations	82 times ranked	10574 citing authors

#	Article	IF	Citations
1	Defect-Dominated Doping and Contact Resistance in MoS₂. ACS Nano, 2014, 8, 2880-2888.	7.3	690
2	MoS₂ P-type Transistors and Diodes Enabled by High Work Function MoO_x Contacts. Nano Letters, 2014, 14, 1337-1342.	4.5	487
3	Hole Selective MoO_x Contact for Silicon Solar Cells. Nano Letters, 2014, 14, 967-971.	4.5	476
4	2D materials advances: from large scale synthesis and controlled heterostructures to improved characterization techniques, defects and applications. 2D Materials, 2016, 3, 042001.	2.0	408
5	Nitrogen doping of graphene and its effect on quantum capacitance, and a new insight on the enhanced capacitance of N-doped carbon. Energy and Environmental Science, 2012, 5, 9618.	15.6	376
6	GaAs interfacial self-cleaning by atomic layer deposition. Applied Physics Letters, 2008, 92, .	1.5	354
7	Highly Scalable, Atomically Thin WSe₂ Grown via Metalâ€“Organic Chemical Vapor Deposition. ACS Nano, 2015, 9, 2080-2087.	7.3	339
8	Toward the Controlled Synthesis of Hexagonal Boron Nitride Films. ACS Nano, 2012, 6, 6378-6385.	7.3	295
9	Impurities and Electronic Property Variations of Natural MoS₂Crystal Surfaces. ACS Nano, 2015, 9, 9124-9133.	7.3	240
10	HfO₂ on MoS₂ by Atomic Layer Deposition: Adsorption Mechanisms and Thickness Scalability. ACS Nano, 2013, 7, 10354-10361.	7.3	237
11	Reducing Extrinsic Performance-Limiting Factors in Graphene Grown by Chemical Vapor Deposition. ACS Nano, 2012, 6, 3224-3229.	7.3	216
12	Air Stable p-Doping of WSe₂ by Covalent Functionalization. ACS Nano, 2014, 8, 10808-10814.	7.3	208
13	HfSe₂ Thin Films: 2D Transition Metal Dichalcogenides Grown by Molecular Beam Epitaxy. ACS Nano, 2015, 9, 474-480.	7.3	195
14	Hole Contacts on Transition Metal Dichalcogenides: Interface Chemistry and Band Alignments. ACS Nano, 2014, 8, 6265-6272.	7.3	173
15	MoS2 functionalization for ultra-thin atomic layer deposited dielectrics. Applied Physics Letters, 2014, 104, .	1.5	171
16	Comprehensive structural and optical characterization of MBE grown MoSe ₂ on graphite, CaF ₂ and graphene. 2D Materials, 2015, 2, 024007.	2.0	120
17	Contact Metalâ€“MoS₂ Interfacial Reactions and Potential Implications on MoS₂-Based Device Performance. Journal of Physical Chemistry C, 2016, 120, 14719-14729.	1.5	114
18	MoS₂â€“Titanium Contact Interface Reactions. ACS Applied Materials & Interfaces, 2016, 8, 8289-8294.	4.0	108

#	Article	IF	Citations
19	Atomically-thin layered films for device applications based upon 2D TMDC materials. Thin Solid Films, 2016, 616, 482-501.	0.8	104
20	HfO ₂ on UVâ€“O ₃ exposed transition metal dichalcogenides: interfacial reactions study. 2D Materials, 2015, 2, 014004.	2.0	98
21	Realistic Metalâ€“Graphene Contact Structures. ACS Nano, 2014, 8, 642-649.	7.3	93
22	Rapid Selective Etching of PMMA Residues from Transferred Graphene by Carbon Dioxide. Journal of Physical Chemistry C, 2013, 117, 23000-23008.	1.5	89
23	Frequency dispersion reduction and bond conversion on n-type GaAs by in situ surface oxide removal and passivation. Applied Physics Letters, 2007, 91, 163512.	1.5	88
24	Al₂O₃ on Black Phosphorus by Atomic Layer Deposition: An in Situ Interface Study. ACS Applied Materials & Interfaces, 2015, 7, 13038-13043.	4.0	81
25	WSe ₂ -contact metal interface chemistry and band alignment under high vacuum and ultra high vacuum deposition conditions. 2D Materials, 2017, 4, 025084.	2.0	77
26	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.	1.5	69
27	Indium stability on InGaAs during atomic H surface cleaning. Applied Physics Letters, 2008, 92, .	1.5	62
28	Interface studies of GaAs metal-oxide-semiconductor structures using atomic-layer-deposited HfO2â•Al2O3 nanolaminate gate dielectric. Applied Physics Letters, 2007, 91, 142122.	1.5	58
29	Controlling the Atomic Layer Deposition of Titanium Dioxide on Silicon: Dependence on Surface Termination. Journal of Physical Chemistry C, 2013, 117, 20250-20259.	1.5	58
30	Electrical, structural, and chemical properties of HfO2 films formed by electron beam evaporation. Journal of Applied Physics, 2008, 104, .	1.1	57
31	MBE growth of few-layer 2H-MoTe2 on 3D substrates. Journal of Crystal Growth, 2018, 482, 61-69.	0.7	43
32	Selectivity of metal oxide atomic layer deposition on hydrogen terminated and oxidized Si(001)-(2Ã—1) surface. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2014, 32, .	0.6	40
33	Tuning the electrical properties of WSe ₂ via O ₂ plasma oxidation: towards lateral homojunctions. 2D Materials, 2019, 6, 045024.	2.0	39
34	Probing Interface Defects in Top-Gated MoS₂ Transistors with Impedance Spectroscopy. ACS Applied Materials & Interfaces, 2017, 9, 24348-24356.	4.0	38
35	Fermi Level Manipulation through Native Doping in the Topological Insulator Bi₂Se₃. ACS Nano, 2018, 12, 6310-6318.	7.3	37
36	Schottky Barrier Height of Pd/MoS₂ Contact by Large Area Photoemission Spectroscopy. ACS Applied Materials & Interfaces, 2017, 9, 38977-38983.	4.0	36

#	Article	IF	Citations
37	Synthesis and Material Properties of Bi₂Se₃ Nanostructures Deposited by SILAR. Journal of Physical Chemistry C, 2018, 122, 12052-12060.	1.5	32
38	ZnO films grown by pulsed-laser deposition on soda lime glass substrates for the ultraviolet inactivation of Staphylococcus epidermidis biofilms. Science and Technology of Advanced Materials, 2009, 10, 045003.	2.8	31
39	Atmospheric and Long-term Aging Effects on the Electrical Properties of Variable Thickness WSe₂ Transistors. ACS Applied Materials & Interfaces, 2018, 10, 36540-36548.	4.0	31
40	Trimethyl-aluminum and ozone interactions with graphite in atomic layer deposition of Al2O3. Journal of Applied Physics, 2012, 112, 104110.	1.1	30
41	A comparative study of atomic layer deposition of Al2O3 and HfO2 on AlGaN/GaN. Journal of Materials Science: Materials in Electronics, 2015, 26, 4638-4643.	1.1	25
42	Thermally Induced Defects on WSe₂. Journal of Physical Chemistry C, 2020, 124, 15337-15346.	1.5	25
43	Titanium contacts to graphene: process-induced variability in electronic and thermal transport. Nanotechnology, 2018, 29, 145201.	1.3	23
44	The influence of titanium adhesion layer oxygen stoichiometry on thermal boundary conductance at gold contacts. Applied Physics Letters, 2018, 112, 171602.	1.5	23
45	Mid-wavelength infrared photo response and band alignment for sensitized PbSe thin films. Journal of Applied Physics, 2019, 126, .	1.1	23
46	Metal Nitride Electrode Stress and Chemistry Effects on Phase and Polarization Response in Ferroelectric Hf_{0.5}Zr_{0.5}O₂ Thin Films. Advanced Materials Interfaces, 2021, 8, 2100018.	1.9	22
47	Lithographically patterned metallic conduction in single-layer MoS2 via plasma processing. Npj 2D Materials and Applications, 2019, 3, .	3.9	21
48	High quality HfO2/p-GaSb(001) metal-oxide-semiconductor capacitors with 0.8â€‰nm equivalent oxide thickness. Applied Physics Letters, 2014, 105, .	1.5	20
49	UV-Ozone Functionalization of 2D Materials. Jom, 2019, 71, 224-237.	0.9	19
50	GaSb oxide thermal stability studied by dynamic-XPS. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2014, 32, 041201.	0.6	18
51	Low voltage stress-induced leakage current in 1.4â€“2.1 nm SiON and HfSiON gate dielectric layers. Semiconductor Science and Technology, 2005, 20, 668-672.	1.0	17
52	Thermal Stability of Titanium Contacts to MoS₂. ACS Applied Materials & Interfaces, 2019, 11, 35389-35393.	4.0	17
53	Photoemission studies of the interface formation of ultrathin MgO dielectric layers on the oxidised Si(111) surface. Journal of Physics: Conference Series, 2008, 100, 042047.	0.3	16
54	Pattern transfer of hydrogen depassivation lithography patterns into silicon with atomically traceable placement and size control. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2014, 32, .	0.6	16

#	Article	IF	Citations
55	Growth Kinetics and Atomistic Mechanisms of Native Oxidation of ZrS_xSe_{2â€“x} and MoS₂ Crystals. Nano Letters, 2020, 20, 8592-8599.	4.5	16
56	Surface and interfacial study of half cycle atomic layer deposited Al2O3 on black phosphorus. Microelectronic Engineering, 2015, 147, 1-4.	1.1	15
57	Titanium contacts to <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:mrow></mml:math> with interfacial oxide: Interface chemistry and thermal transport. Physical Review Materials, 2019, 3, .	0.9	13
58	Characterisation and passivation of interface defects in (100)-Si/SiO2/HfO2/TiN gate stacks. Microelectronics Reliability, 2007, 47, 1195-1201.	0.9	12
59	Interface chemistry and thermoelectric characterization of Ti and TiO_x contacts to MBE-grown WSe₂. 2D Materials, 2020, 7, 045033.	2.0	12
60	Photoemission studies of the initial interface formation of ultrathin MgO dielectric layers on the Si(111) surface. Thin Solid Films, 2010, 518, 1980-1984.	0.8	11
61	Si₂H₆ Dissociative Chemisorption and Dissociation on Si(100)-(2Ã—1) and Ge(100)-(2Ã—1). Journal of Physical Chemistry C, 2011, 115, 24534-24548.	1.5	9
62	Ultrathin-Body TiO₂ Thin Film Transistors With Record On-Current Density, ON/OFF Current Ratio, and Subthreshold Swing via O₂ Annealing. IEEE Electron Device Letters, 2019, 40, 1463-1466.	2.2	9
63	MoS2 cleaning by acetone and UV-ozone: Geological and synthetic material. Applied Surface Science, 2019, 478, 183-188.	3.1	8
64	Contacts for Molybdenum Disulfide: Interface Chemistry and Thermal Stability. Materials, 2020, 13, 693.	1.3	8
65	Band alignment and defects influence the electronâ€“phonon heat transport mechanisms across metal interfaces. Applied Physics Letters, 2021, 118, .	1.5	8
66	MoS2 impurities: Chemical identification and spatial resolution of bismuth impurities in geological material. Applied Surface Science, 2020, 508, 145256.	3.1	7
67	Photoemission studies of pulsed-RF plasma nitrided ultra-thin SiON dielectric layers. Surface Science, 2006, 600, 532-536.	0.8	6
68	High-k Oxide Growth on III-V Surfaces: Chemical Bonding and MOSFET Performance. ECS Transactions, 2011, 35, 403-413.	0.3	6
69	Digermane Deposition on Si(100) and Ge(100): from Adsorption Mechanism to Epitaxial Growth. Journal of Physical Chemistry C, 2014, 118, 482-493.	1.5	6
70	Band alignments between SmTiO3, GdTiO3, and SrTiO3. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2016, 34, .	0.9	6
71	Unraveling Chemical Interactions between Titanium and Graphene for Electrical Contact Applications. ACS Applied Nano Materials, 2018, 1, 4828-4835.	2.4	6
72	Investigation of Tunneling Current in $hbox{SiO}_{2}/ hbox{HfO}_{2}$ Gate Stacks for Flash Memory Applications. IEEE Transactions on Electron Devices, 2011, 58, 4189-4195.	1.6	5

#	Article	IF	Citations
73	Thermal stability of hafnium zirconium oxide on transition metal dichalcogenides. Applied Surface Science, 2021, 546, 149058.	3.1	5
74	The effect of growth temperature and metal-to-chalcogen on the growth of WSe2 by molecular beam epitaxy. , 2019, , .		5
75	Interrogating the Effect of Assay Media on the Rate of Virus Inactivation of Highâ€Touch Copper Surfaces: A Materials Science Approach. Advanced Materials Interfaces, 2022, 9, .	1.9	5
76	High resolution photoemission study of SiOx/Si(111) interface disruption following in situ HfO2 deposition. Applied Physics Letters, 2009, 95, 072903.	1.5	4
77	Energy Band Alignment of Few-Monolayer WS₂ and WSe₂ with SiO₂ Using Internal Photoemission Spectroscopy. ECS Journal of Solid State Science and Technology, 2020, 9, 093009.	0.9	4
78	Influence of Oxygen Dopants on the HER Catalytic Activity of Electrodeposited MoO_xS_y Electrocatalysts. ACS Applied Energy Materials, 2021, 4, 13676-13683.	2.5	4
79	Atomically Traceable Nanostructure Fabrication. Journal of Visualized Experiments, 2015, , e52900.	0.2	2
80	Defects in transition metal dichalcogenides. , 2022, , 89-117.		1
81	WSe₂ growth on hafnium zirconium oxide by molecular beam epitaxy: the effect of the WSe₂ growth conditions on the ferroelectric properties of HZO. 2D Materials, 2022, 9, 015001.	2.0	0
82	Copper-Based Alloys as Anti-Viral High-Touch Surfaces: An Investigation of Kill Efficiency and Mechanism in a Simulated Hospital Environment. ECS Meeting Abstracts, 2021, MA2021-02, 1411-1411.	0.0	0