

# Stephen J McDonnell

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

82  
papers

5,689  
citations

31  
h-index

75  
g-index

82  
ext. papers

6,362  
ext. citations

6.5  
avg, IF

5.47  
L-index

#	Paper	IF	Citations
82	WSe <sub>2</sub> growth on hafnium zirconium oxide by molecular beam epitaxy: the effect of the WSe <sub>2</sub> growth conditions on the ferroelectric properties of HZO. <i>2D Materials</i> , <b>2022</b> , 9, 015001	5.9	
81	Defects in transition metal dichalcogenides <b>2022</b> , 89-117		
80	Copper-Based Alloys as Anti-Viral High-Touch Surfaces: An Investigation of Kill Efficiency and Mechanism in a Simulated Hospital Environment. <i>ECS Meeting Abstracts</i> , <b>2021</b> , MA2021-02, 1411-1411	0	
79	Metal Nitride Electrode Stress and Chemistry Effects on Phase and Polarization Response in Ferroelectric Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> Thin Films. <i>Advanced Materials Interfaces</i> , <b>2021</b> , 8, 2100018	4.6	6
78	Band alignment and defects influence the electron-phonon heat transport mechanisms across metal interfaces. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 163503	3.4	3
77	Thermal stability of hafnium zirconium oxide on transition metal dichalcogenides. <i>Applied Surface Science</i> , <b>2021</b> , 546, 149058	6.7	1
76	Influence of Oxygen Dopants on the HER Catalytic Activity of Electrodeposited MoO <sub>x</sub> S <sub>y</sub> Electrocatalysts. <i>ACS Applied Energy Materials</i> , <b>2021</b> , 4, 13676-13683	6.1	0
75	Thermally Induced Defects on WSe <sub>2</sub> . <i>Journal of Physical Chemistry C</i> , <b>2020</b> , 124, 15337-15346	3.8	10
74	Contacts for Molybdenum Disulfide: Interface Chemistry and Thermal Stability. <i>Materials</i> , <b>2020</b> , 13,	3.5	6
73	Interface chemistry and thermoelectric characterization of Ti and TiO <sub>x</sub> contacts to MBE-grown WSe <sub>2</sub> . <i>2D Materials</i> , <b>2020</b> , 7, 045033	5.9	6
72	Energy Band Alignment of Few-Monolayer WS <sub>2</sub> and WSe <sub>2</sub> with SiO <sub>2</sub> Using Internal Photoemission Spectroscopy. <i>ECS Journal of Solid State Science and Technology</i> , <b>2020</b> , 9, 093009	2	3
71	MoS <sub>2</sub> impurities: Chemical identification and spatial resolution of bismuth impurities in geological material. <i>Applied Surface Science</i> , <b>2020</b> , 508, 145256	6.7	3
70	Growth Kinetics and Atomistic Mechanisms of Native Oxidation of ZrSSe and MoS Crystals. <i>Nano Letters</i> , <b>2020</b> , 20, 8592-8599	11.5	6
69	Thermal Stability of Titanium Contacts to MoS. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 35389-35393	3.9	9
68	Lithographically patterned metallic conduction in single-layer MoS <sub>2</sub> via plasma processing. <i>Npj 2D Materials and Applications</i> , <b>2019</b> , 3,	8.8	14
67	Tuning the electrical properties of WSe <sub>2</sub> via O <sub>2</sub> plasma oxidation: towards lateral homojunctions. <i>2D Materials</i> , <b>2019</b> , 6, 045024	5.9	24
66	Ultrathin-Body TiO <sub>2</sub> Thin Film Transistors With Record On-Current Density, ON/OFF Current Ratio, and Subthreshold Swing via O <sub>2</sub> Annealing. <i>IEEE Electron Device Letters</i> , <b>2019</b> , 40, 1463-1466	4.4	5

65	Mid-wavelength infrared photo response and band alignment for sensitized PbSe thin films. <i>Journal of Applied Physics</i> , <b>2019</b> , 126, 105701	2.5	14
64	Titanium contacts to MoS2 with interfacial oxide: Interface chemistry and thermal transport. <i>Physical Review Materials</i> , <b>2019</b> , 3,	3.2	8
63	The effect of growth temperature and metal-to-chalcogen on the growth of WSe2 by molecular beam epitaxy <b>2019</b> ,		4
62	MoS2 cleaning by acetone and UV-ozone: Geological and synthetic material. <i>Applied Surface Science</i> , <b>2019</b> , 478, 183-188	6.7	5
61	UV-Ozone Functionalization of 2D Materials. <i>Jom</i> , <b>2019</b> , 71, 224-237	2.1	12
60	Titanium contacts to graphene: process-induced variability in electronic and thermal transport. <i>Nanotechnology</i> , <b>2018</b> , 29, 145201	3.4	22
59	MBE growth of few-layer 2H-MoTe2 on 3D substrates. <i>Journal of Crystal Growth</i> , <b>2018</b> , 482, 61-69	1.6	30
58	Fermi Level Manipulation through Native Doping in the Topological Insulator BiSe. <i>ACS Nano</i> , <b>2018</b> , 12, 6310-6318	16.7	23
57	Atmospheric and Long-term Aging Effects on the Electrical Properties of Variable Thickness WSe Transistors. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2018</b> , 10, 36540-36548	9.5	21
56	Unraveling Chemical Interactions between Titanium and Graphene for Electrical Contact Applications. <i>ACS Applied Nano Materials</i> , <b>2018</b> , 1, 4828-4835	5.6	3
55	The influence of titanium adhesion layer oxygen stoichiometry on thermal boundary conductance at gold contacts. <i>Applied Physics Letters</i> , <b>2018</b> , 112, 171602	3.4	18
54	Synthesis and Material Properties of Bi2Se3 Nanostructures Deposited by SILAR. <i>Journal of Physical Chemistry C</i> , <b>2018</b> , 122, 12052-12060	3.8	13
53	WSe 2 -contact metal interface chemistry and band alignment under high vacuum and ultra high vacuum deposition conditions. <i>2D Materials</i> , <b>2017</b> , 4, 025084	5.9	67
52	Schottky Barrier Height of Pd/MoS Contact by Large Area Photoemission Spectroscopy. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2017</b> , 9, 38977-38983	9.5	19
51	Probing Interface Defects in Top-Gated MoS Transistors with Impedance Spectroscopy. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2017</b> , 9, 24348-24356	9.5	27
50	Contact Metal/MoS2 Interfacial Reactions and Potential Implications on MoS2-Based Device Performance. <i>Journal of Physical Chemistry C</i> , <b>2016</b> , 120, 14719-14729	3.8	91
49	MoS2-Titanium Contact Interface Reactions. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2016</b> , 8, 8289-94	9.5	84
48	2D materials advances: from large scale synthesis and controlled heterostructures to improved characterization techniques, defects and applications. <i>2D Materials</i> , <b>2016</b> , 3, 042001	5.9	297

47	Band alignments between SmTiO <sub>3</sub> , GdTIO <sub>3</sub> , and SrTiO <sub>3</sub> . <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2016</b> , 34, 061102	2.9	5
46	Atomically-thin layered films for device applications based upon 2D TMDC materials. <i>Thin Solid Films</i> , <b>2016</b> , 616, 482-501	2.2	78
45	HfO <sub>2</sub> on UVD 3 exposed transition metal dichalcogenides: interfacial reactions study. <i>2D Materials</i> , <b>2015</b> , 2, 014004	5.9	80
44	Al <sub>2</sub> O <sub>3</sub> on Black Phosphorus by Atomic Layer Deposition: An in Situ Interface Study. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2015</b> , 7, 13038-43	9.5	71
43	A comparative study of atomic layer deposition of Al <sub>2</sub> O <sub>3</sub> and HfO <sub>2</sub> on AlGaN/GaN. <i>Journal of Materials Science: Materials in Electronics</i> , <b>2015</b> , 26, 4638-4643	2.1	22
42	Comprehensive structural and optical characterization of MBE grown MoSe <sub>2</sub> on graphite, CaF <sub>2</sub> and graphene. <i>2D Materials</i> , <b>2015</b> , 2, 024007	5.9	104
41	Surface and interfacial study of half cycle atomic layer deposited Al <sub>2</sub> O <sub>3</sub> on black phosphorus. <i>Microelectronic Engineering</i> , <b>2015</b> , 147, 1-4	2.5	13
40	Impurities and Electronic Property Variations of Natural MoS <sub>2</sub> Crystal Surfaces. <i>ACS Nano</i> , <b>2015</b> , 9, 9124-9137	16.7	207
39	HfSe <sub>2</sub> thin films: 2D transition metal dichalcogenides grown by molecular beam epitaxy. <i>ACS Nano</i> , <b>2015</b> , 9, 474-80	16.7	155
38	Atomically Traceable Nanostructure Fabrication. <i>Journal of Visualized Experiments</i> , <b>2015</b> , e52900	1.6	1
37	Highly scalable, atomically thin WSe <sub>2</sub> grown via metal-organic chemical vapor deposition. <i>ACS Nano</i> , <b>2015</b> , 9, 2080-7	16.7	273
36	Defect-dominated doping and contact resistance in MoS <sub>2</sub> . <i>ACS Nano</i> , <b>2014</b> , 8, 2880-8	16.7	562
35	Selectivity of metal oxide atomic layer deposition on hydrogen terminated and oxidized Si(001)-(2×1) surface. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2014</b> , 32, 03D112	1.3	31
34	Hole contacts on transition metal dichalcogenides: interface chemistry and band alignments. <i>ACS Nano</i> , <b>2014</b> , 8, 6265-72	16.7	149
33	Hole selective MoO <sub>x</sub> contact for silicon solar cells. <i>Nano Letters</i> , <b>2014</b> , 14, 967-71	11.5	392
32	Realistic metal-graphene contact structures. <i>ACS Nano</i> , <b>2014</b> , 8, 642-9	16.7	86
31	Air stable p-doping of WSe <sub>2</sub> by covalent functionalization. <i>ACS Nano</i> , <b>2014</b> , 8, 10808-14	16.7	180
30	MoSIP-type transistors and diodes enabled by high work function MoO <sub>x</sub> contacts. <i>Nano Letters</i> , <b>2014</b> , 14, 1337-42	11.5	419

29	Digermene Deposition on Si(100) and Ge(100): from Adsorption Mechanism to Epitaxial Growth. <i>Journal of Physical Chemistry C</i> , <b>2014</b> , 118, 482-493	3.8	6
28	GaSb oxide thermal stability studied by dynamic-XPS. <i>Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics</i> , <b>2014</b> , 32, 041201	1.3	16
27	High quality HfO <sub>2</sub> /p-GaSb(001) metal-oxide-semiconductor capacitors with 0.8 nm equivalent oxide thickness. <i>Applied Physics Letters</i> , <b>2014</b> , 105, 222103	3.4	20
26	MoS <sub>2</sub> functionalization for ultra-thin atomic layer deposited dielectrics. <i>Applied Physics Letters</i> , <b>2014</b> , 104, 111601	3.4	149
25	Pattern transfer of hydrogen depassivation lithography patterns into silicon with atomically traceable placement and size control. <i>Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics</i> , <b>2014</b> , 32, 041804	1.3	14
24	Controlling the Atomic Layer Deposition of Titanium Dioxide on Silicon: Dependence on Surface Termination. <i>Journal of Physical Chemistry C</i> , <b>2013</b> , 117, 20250-20259	3.8	49
23	HfO <sub>2</sub> on MoS <sub>2</sub> by atomic layer deposition: adsorption mechanisms and thickness scalability. <i>ACS Nano</i> , <b>2013</b> , 7, 10354-61	16.7	194
22	Rapid Selective Etching of PMMA Residues from Transferred Graphene by Carbon Dioxide. <i>Journal of Physical Chemistry C</i> , <b>2013</b> , 117, 23000-23008	3.8	69
21	Reducing extrinsic performance-limiting factors in graphene grown by chemical vapor deposition. <i>ACS Nano</i> , <b>2012</b> , 6, 3224-9	16.7	177
20	Nitrogen doping of graphene and its effect on quantum capacitance, and a new insight on the enhanced capacitance of N-doped carbon. <i>Energy and Environmental Science</i> , <b>2012</b> , 5, 9618	35.4	307
19	Uniform Wafer-Scale Chemical Vapor Deposition of Graphene on Evaporated Cu (111) Film with Quality Comparable to Exfoliated Monolayer. <i>Journal of Physical Chemistry C</i> , <b>2012</b> , 116, 24068-24074	3.8	58
18	Toward the controlled synthesis of hexagonal boron nitride films. <i>ACS Nano</i> , <b>2012</b> , 6, 6378-85	16.7	242
17	Trimethyl-aluminum and ozone interactions with graphite in atomic layer deposition of Al <sub>2</sub> O <sub>3</sub> . <i>Journal of Applied Physics</i> , <b>2012</b> , 112, 104110	2.5	25
16	Investigation of Tunneling Current in $\text{SiO}_2/\text{HfO}_2$ Gate Stacks for Flash Memory Applications. <i>IEEE Transactions on Electron Devices</i> , <b>2011</b> , 58, 4189-4195	2.9	4
15	Si <sub>2</sub> H <sub>6</sub> Dissociative Chemisorption and Dissociation on Si(100)-(2 $\times$ 1) and Ge(100)-(2 $\times$ 1). <i>Journal of Physical Chemistry C</i> , <b>2011</b> , 115, 24534-24548	3.8	7
14	High-k Oxide Growth on III-V Surfaces: Chemical Bonding and MOSFET Performance. <i>ECS Transactions</i> , <b>2011</b> , 35, 403-413	1	6
13	Photoemission studies of the initial interface formation of ultrathin MgO dielectric layers on the Si(111) surface. <i>Thin Solid Films</i> , <b>2010</b> , 518, 1980-1984	2.2	10
12	ZnO films grown by pulsed-laser deposition on soda lime glass substrates for the ultraviolet inactivation of biofilms. <i>Science and Technology of Advanced Materials</i> , <b>2009</b> , 10, 045003	7.1	28

11	High resolution photoemission study of SiO <sub>x</sub> /Si(111) interface disruption following in situ HfO <sub>2</sub> deposition. <i>Applied Physics Letters</i> , <b>2009</b> , 95, 072903	3.4	4
10	Electrical, structural, and chemical properties of HfO <sub>2</sub> films formed by electron beam evaporation. <i>Journal of Applied Physics</i> , <b>2008</b> , 104, 064113	2.5	51
9	GaAs interfacial self-cleaning by atomic layer deposition. <i>Applied Physics Letters</i> , <b>2008</b> , 92, 071901	3.4	332
8	Indium stability on InGaAs during atomic H surface cleaning. <i>Applied Physics Letters</i> , <b>2008</b> , 92, 171906	3.4	59
7	Photoemission studies of the interface formation of ultrathin MgO dielectric layers on the oxidised Si(111) surface. <i>Journal of Physics: Conference Series</i> , <b>2008</b> , 100, 042047	0.3	15
6	Characterisation and passivation of interface defects in (100)-Si/SiO <sub>2</sub> /HfO <sub>2</sub> /TiN gate stacks. <i>Microelectronics Reliability</i> , <b>2007</b> , 47, 1195-1201	1.2	12
5	Frequency dispersion reduction and bond conversion on n-type GaAs by in situ surface oxide removal and passivation. <i>Applied Physics Letters</i> , <b>2007</b> , 91, 163512	3.4	81
4	Interface studies of GaAs metal-oxide-semiconductor structures using atomic-layer-deposited HfO <sub>2</sub> /Al <sub>2</sub> O <sub>3</sub> nanolaminate gate dielectric. <i>Applied Physics Letters</i> , <b>2007</b> , 91, 142122	3.4	53
3	Photoemission studies of pulsed-RF plasma nitrided ultra-thin SiON dielectric layers. <i>Surface Science</i> , <b>2006</b> , 600, 532-536	1.8	6
2	Low voltage stress-induced leakage current in 1.4-1.1 nm SiON and HfSiON gate dielectric layers. <i>Semiconductor Science and Technology</i> , <b>2005</b> , 20, 668-672	1.8	13
1	Interrogating the Effect of Assay Media on the Rate of Virus Inactivation of High-Touch Copper Surfaces: A Materials Science Approach. <i>Advanced Materials Interfaces</i> , 2200390	4.6	0