# Stephen J Mcdonnell

## List of Publications by Citations



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|---|---|---|---|
| 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 | Defect-dominated doping and contact resistance in MoS2. *ACS Nano*, **2014**, 8, 2880-8 | 16.7 | 562 |
| 81 | MoS₂P-type transistors and diodes enabled by high work function MoOx contacts. *Nano Letters*, **2014**, 14, 1337-42 | 11.5 | 419 |
| 80 | Hole selective MoOx contact for silicon solar cells. *Nano Letters*, **2014**, 14, 967-71 | 11.5 | 392 |
| 79 | GaAs interfacial self-cleaning by atomic layer deposition. *Applied Physics Letters*, **2008**, 92, 071901 | 3.4 | 332 |
| 78 | 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 | 35.4 | 307 |
| 77 | 2D materials advances: from large scale synthesis and controlled heterostructures to improved characterization techniques, defects and applications. *2D Materials*, **2016**, 3, 042001 | 5.9 | 297 |
| 76 | Highly scalable, atomically thin WSe2 grown via metal-organic chemical vapor deposition. *ACS Nano* , **2015**, 9, 2080-7 | 16.7 | 273 |
| 75 | Toward the controlled synthesis of hexagonal boron nitride films. *ACS Nano*, **2012**, 6, 6378-85 | 16.7 | 242 |
| 74 | Impurities and Electronic Property Variations of Natural MoS2 Crystal Surfaces. *ACS Nano*, **2015**, 9, 9124-33 | 16.7 | 207 |
| 73 | HfO(2) on MoS(2) by atomic layer deposition: adsorption mechanisms and thickness scalability. *ACS Nano*, **2013**, 7, 10354-61 | 16.7 | 194 |
| 72 | Air stable p-doping of WSe2 by covalent functionalization. *ACS Nano*, **2014**, 8, 10808-14 | 16.7 | 180 |
| 71 | Reducing extrinsic performance-limiting factors in graphene grown by chemical vapor deposition. *ACS Nano*, **2012**, 6, 3224-9 | 16.7 | 177 |
| 70 | HfSe2 thin films: 2D transition metal dichalcogenides grown by molecular beam epitaxy. *ACS Nano*, **2015**, 9, 474-80 | 16.7 | 155 |
| 69 | Hole contacts on transition metal dichalcogenides: interface chemistry and band alignments. *ACS Nano*, **2014**, 8, 6265-72 | 16.7 | 149 |
| 68 | MoS2 functionalization for ultra-thin atomic layer deposited dielectrics. *Applied Physics Letters*, **2014**, 104, 111601 | 3.4 | 149 |
| 67 | Comprehensive structural and optical characterization of MBE grown MoSe 2 on graphite, CaF 2 and graphene. *2D Materials*, **2015**, 2, 024007 | 5.9 | 104 |
| 66 | Contact Metal–MoS2 Interfacial Reactions and Potential Implications on MoS2-Based Device Performance. *Journal of Physical Chemistry C*, **2016**, 120, 14719-14729 | 3.8 | 91 |

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| 65 | Realistic metal-graphene contact structures. *ACS Nano*, **2014**, 8, 642-9 | 16.7 | 86 |
| 64 | MoS2-Titanium Contact Interface Reactions. *ACS Applied Materials & Interfaces*, **2016**, 8, 8289-94 | 9.5 | 84 |
| 63 | Frequency dispersion reduction and bond conversion on n-type GaAs by in situ surface oxide removal and passivation. *Applied Physics Letters*, **2007**, 91, 163512 | 3.4 | 81 |
| 62 | HfO 2 on UVD 3 exposed transition metal dichalcogenides: interfacial reactions study. *2D Materials*, **2015**, 2, 014004 | 5.9 | 80 |
| 61 | Atomically-thin layered films for device applications based upon 2D TMDC materials. *Thin Solid Films*, **2016**, 616, 482-501 | 2.2 | 78 |
| 60 | Al2O3 on Black Phosphorus by Atomic Layer Deposition: An in Situ Interface Study. *ACS Applied Materials & Interfaces*, **2015**, 7, 13038-43 | 9.5 | 71 |
| 59 | Rapid Selective Etching of PMMA Residues from Transferred Graphene by Carbon Dioxide. *Journal of Physical Chemistry C*, **2013**, 117, 23000-23008 | 3.8 | 69 |
| 58 | WSe 2 -contact metal interface chemistry and band alignment under high vacuum and ultra high vacuum deposition conditions. *2D Materials*, **2017**, 4, 025084 | 5.9 | 67 |
| 57 | Indium stability on InGaAs during atomic H surface cleaning. *Applied Physics Letters*, **2008**, 92, 171906 | 3.4 | 59 |
| 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 | 3.8 | 58 |
| 55 | Interface studies of GaAs metal-oxide-semiconductor structures using atomic-layer-deposited HfO2Al2O3 nanolaminate gate dielectric. *Applied Physics Letters*, **2007**, 91, 142122 | 3.4 | 53 |
| 54 | Electrical, structural, and chemical properties of HfO2 films formed by electron beam evaporation. *Journal of Applied Physics*, **2008**, 104, 064113 | 2.5 | 51 |
| 53 | Controlling the Atomic Layer Deposition of Titanium Dioxide on Silicon: Dependence on Surface Termination. *Journal of Physical Chemistry C*, **2013**, 117, 20250-20259 | 3.8 | 49 |
| 52 | Selectivity of metal oxide atomic layer deposition on hydrogen terminated and oxidized Si(001)-(2) surface. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2014**, 32, 03D112 | 1.3 | 31 |
| 51 | MBE growth of few-layer 2H-MoTe2 on 3D substrates. *Journal of Crystal Growth*, **2018**, 482, 61-69 | 1.6 | 30 |
| 50 | ZnO films grown by pulsed-laser deposition on soda lime glass substrates for the ultraviolet inactivation of biofilms. *Science and Technology of Advanced Materials*, **2009**, 10, 045003 | 7.1 | 28 |
| 49 | Probing Interface Defects in Top-Gated MoS Transistors with Impedance Spectroscopy. *ACS Applied Materials & Interfaces*, **2017**, 9, 24348-24356 | 9.5 | 27 |
| 48 | Trimethyl-aluminum and ozone interactions with graphite in atomic layer deposition of Al2O3. *Journal of Applied Physics*, **2012**, 112, 104110 | 2.5 | 25 |

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| 47 | Tuning the electrical properties of WSe 2 via O 2 plasma oxidation: towards lateral homojunctions. *2D Materials*, **2019**, 6, 045024 | 5.9 | 24 |
| 46 | Fermi Level Manipulation through Native Doping in the Topological Insulator BiSe. *ACS Nano*, **2018**, 12, 6310-6318 | 16.7 | 23 |
| 45 | 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 | 2.1 | 22 |
| 44 | Titanium contacts to graphene: process-induced variability in electronic and thermal transport. *Nanotechnology*, **2018**, 29, 145201 | 3.4 | 22 |
| 43 | Atmospheric and Long-term Aging Effects on the Electrical Properties of Variable Thickness WSe Transistors. *ACS Applied Materials & Interfaces*, **2018**, 10, 36540-36548 | 9.5 | 21 |
| 42 | High quality HfO2/p-GaSb(001) metal-oxide-semiconductor capacitors with 0.8 nm equivalent oxide thickness. *Applied Physics Letters*, **2014**, 105, 222103 | 3.4 | 20 |
| 41 | Schottky Barrier Height of Pd/MoS Contact by Large Area Photoemission Spectroscopy. *ACS Applied Materials & Interfaces*, **2017**, 9, 38977-38983 | 9.5 | 19 |
| 40 | The influence of titanium adhesion layer oxygen stoichiometry on thermal boundary conductance at gold contacts. *Applied Physics Letters*, **2018**, 112, 171602 | 3.4 | 18 |
| 39 | GaSb oxide thermal stability studied by dynamic-XPS. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2014**, 32, 041201 | 1.3 | 16 |
| 38 | 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 | 15 |
| 37 | Lithographically patterned metallic conduction in single-layer MoS2 via plasma processing. *Npj 2D Materials and Applications*, **2019**, 3, | 8.8 | 14 |
| 36 | Mid-wavelength infrared photo response and band alignment for sensitized PbSe thin films. *Journal of Applied Physics*, **2019**, 126, 105701 | 2.5 | 14 |
| 35 | 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, 041804 | 1.3 | 14 |
| 34 | Surface and interfacial study of half cycle atomic layer deposited Al2O3 on black phosphorus. *Microelectronic Engineering*, **2015**, 147, 1-4 | 2.5 | 13 |
| 33 | Low voltage stress-induced leakage current in 1.4–2.1 nm SiON and HfSiON gate dielectric layers. *Semiconductor Science and Technology*, **2005**, 20, 668-672 | 1.8 | 13 |
| 32 | Synthesis and Material Properties of Bi2Se3 Nanostructures Deposited by SILAR. *Journal of Physical Chemistry C*, **2018**, 122, 12052-12060 | 3.8 | 13 |
| 31 | Characterisation and passivation of interface defects in (100)-Si/SiO2/HfO2/TiN gate stacks. *Microelectronics Reliability*, **2007**, 47, 1195-1201 | 1.2 | 12 |
| 30 | UV-Ozone Functionalization of 2D Materials. *Jom*, **2019**, 71, 224-237 | 2.1 | 12 |

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| 29 | Thermally Induced Defects on WSe2. *Journal of Physical Chemistry C*, **2020**, 124, 15337-15346 | 3.8 | 10 |
| 28 | Photoemission studies of the initial interface formation of ultrathin MgO dielectric layers on the Si(111) surface. *Thin Solid Films*, **2010**, 518, 1980-1984 | 2.2 | 10 |
| 27 | Thermal Stability of Titanium Contacts to MoS. *ACS Applied Materials & Interfaces*, **2019**, 11, 35389-35393 | 9.5 | 9 |
| 26 | Titanium contacts to MoS2 with interfacial oxide: Interface chemistry and thermal transport. *Physical Review Materials*, **2019**, 3, | 3.2 | 8 |
| 25 | Si2H6 Dissociative Chemisorption and Dissociation on Si(100)-(2□1) and Ge(100)-(2□1). *Journal of Physical Chemistry C*, **2011**, 115, 24534-24548 | 3.8 | 7 |
| 24 | Contacts for Molybdenum Disulfide: Interface Chemistry and Thermal Stability. *Materials*, **2020**, 13, | 3.5 | 6 |
| 23 | Interface chemistry and thermoelectric characterization of Ti and TiOx contacts to MBE-grown WSe2. *2D Materials*, **2020**, 7, 045033 | 5.9 | 6 |
| 22 | Digermane Deposition on Si(100) and Ge(100): from Adsorption Mechanism to Epitaxial Growth. *Journal of Physical Chemistry C*, **2014**, 118, 482-493 | 3.8 | 6 |
| 21 | High-k Oxide Growth on III-V Surfaces: Chemical Bonding and MOSFET Performance. *ECS Transactions*, **2011**, 35, 403-413 | 1 | 6 |
| 20 | Photoemission studies of pulsed-RF plasma nitrided ultra-thin SiON dielectric layers. *Surface Science*, **2006**, 600, 532-536 | 1.8 | 6 |
| 19 | Growth Kinetics and Atomistic Mechanisms of Native Oxidation of ZrSSe and MoS Crystals. *Nano Letters*, **2020**, 20, 8592-8599 | 11.5 | 6 |
| 18 | Metal Nitride Electrode Stress and Chemistry Effects on Phase and Polarization Response in Ferroelectric Hf0.5Zr0.5O2 Thin Films. *Advanced Materials Interfaces*, **2021**, 8, 2100018 | 4.6 | 6 |
| 17 | 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 | 4.4 | 5 |
| 16 | Band alignments between SmTiO3, GdTiO3, and SrTiO3. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2016**, 34, 061102 | 2.9 | 5 |
| 15 | MoS2 cleaning by acetone and UV-ozone: Geological and synthetic material. *Applied Surface Science* , **2019**, 478, 183-188 | 6.7 | 5 |
| 14 | 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 | 2.9 | 4 |
| 13 | High resolution photoemission study of SiOx/Si(111) interface disruption following in situ HfO2 deposition. *Applied Physics Letters*, **2009**, 95, 072903 | 3.4 | 4 |
| 12 | The effect of growth temperature and metal-to-chalcogen on the growth of WSe2 by molecular beam epitaxy **2019**, | | 4 |

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| 11 | 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 | 2 | 3 |
| 10 | MoS2 impurities: Chemical identification and spatial resolution of bismuth impurities in geological material. *Applied Surface Science*, **2020**, 508, 145256 | 6.7 | 3 |
| 9 | Band alignment and defects influence the electron–phonon heat transport mechanisms across metal interfaces. *Applied Physics Letters*, **2021**, 118, 163503 | 3.4 | 3 |
| 8 | Unraveling Chemical Interactions between Titanium and Graphene for Electrical Contact Applications. *ACS Applied Nano Materials*, **2018**, 1, 4828-4835 | 5.6 | 3 |
| 7 | Atomically Traceable Nanostructure Fabrication. *Journal of Visualized Experiments*, **2015**, e52900 | 1.6 | 1 |
| 6 | Thermal stability of hafnium zirconium oxide on transition metal dichalcogenides. *Applied Surface Science*, **2021**, 546, 149058 | 6.7 | 1 |
| 5 | Influence of Oxygen Dopants on the HER Catalytic Activity of Electrodeposited MoOxSy Electrocatalysts. *ACS Applied Energy Materials*, **2021**, 4, 13676-13683 | 6.1 | 0 |
| 4 | Interrogating the Effect of Assay Media on the Rate of Virus Inactivation of High-Touch Copper Surfaces: A Materials Science Approach. *Advanced Materials Interfaces*,2200390 | 4.6 | 0 |
| 3 | 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 | |
| 2 | 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 | 5.9 | |
| 1 | Defects in transition metal dichalcogenides **2022**, 89-117 | | |