

# Damien McGrouther

## List of Publications by Year in descending order

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100  
papers

3,052  
citations

172457

29  
h-index

168389

53  
g-index

103  
all docs

103  
docs citations

103  
times ranked

3649  
citing authors

#	ARTICLE	IF	CITATIONS
1	Measuring and tailoring the Dzyaloshinskii-Moriya interaction in perpendicularly magnetized thin films. <i>Physical Review B</i> , 2014, 90, .	3.2	351
2	Attosecond coherent control of free-electron wave functions using semi-infinite light fields. <i>Nature Communications</i> , 2018, 9, 2694.	12.8	136
3	Dependence of domain wall pinning potential landscapes on domain wall chirality and pinning site geometry in planar nanowires. <i>Physical Review B</i> , 2009, 79, .	3.2	135
4	Ultrafast generation and control of an electron vortex beam via chiral plasmonic near fields. <i>Nature Materials</i> , 2019, 18, 573-579.	27.5	120
5	Magnetic microscopy and topological stability of homochiral Néel domain walls in a Pt/Co/AlOx trilayer. <i>Nature Communications</i> , 2015, 6, 8957.	12.8	117
6	Laser-Induced Skyrmion Writing and Erasing in an Ultrafast Cryo-Lorentz Transmission Electron Microscope. <i>Physical Review Letters</i> , 2018, 120, 117201.	7.8	115
7	Pixelated detectors and improved efficiency for magnetic imaging in STEM differential phase contrast. <i>Ultramicroscopy</i> , 2016, 165, 42-50.	1.9	109
8	Chiral Surface Twists and Skyrmion Stability in Nanolayers of Cubic Helimagnets. <i>Physical Review Letters</i> , 2016, 117, 087202.	7.8	109
9	Magnetic soliton confinement and discretization effects arising from macroscopic coherence in a chiral spin soliton lattice. <i>Physical Review B</i> , 2015, 92, .	3.2	102
10	Use of ZnO thin films as sacrificial templates for metal organic vapor phase epitaxy and chemical lift-off of GaN. <i>Applied Physics Letters</i> , 2007, 91, 071120.	3.3	93
11	Internal structure of hexagonal skyrmion lattices in cubic helimagnets. <i>New Journal of Physics</i> , 2016, 18, 095004.	2.9	82
12	Characterisation of the Medipix3 detector for 60 and 80 keV electrons. <i>Ultramicroscopy</i> , 2017, 182, 44-53.	1.9	77
13	Aberration corrected Lorentz scanning transmission electron microscopy. <i>Ultramicroscopy</i> , 2015, 152, 57-62.	1.9	74
14	Atom probe specimen fabrication methods using a dual FIB/SEM. <i>Ultramicroscopy</i> , 2007, 107, 756-760.	1.9	71
15	Filming the formation and fluctuation of skyrmion domains by cryo-Lorentz transmission electron microscopy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 14212-14217.	7.1	68
16	Imaging and controlling plasmonic interference fields at buried interfaces. <i>Nature Communications</i> , 2016, 7, 13156.	12.8	58
17	Holographic imaging of electromagnetic fields via electron-light quantum interference. <i>Science Advances</i> , 2019, 5, eaav8358.	10.3	58
18	Bridging the Gap: Polymer Nanowire Devices. <i>Advanced Materials</i> , 2007, 19, 2634-2638.	21.0	54

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19	On the origin of differential phase contrast at a locally charged and globally charge-compensated domain boundary in a polar-ordered material. <i>Ultramicroscopy</i> , 2015, 154, 57-63.	1.9	53
20	Controlled domain wall injection into ferromagnetic nanowires from an optimized pad geometry. <i>Applied Physics Letters</i> , 2007, 91, 022506.	3.3	51
21	Graphene Network Organisation in Conductive Polymer Composites. <i>Macromolecular Chemistry and Physics</i> , 2012, 213, 1251-1258.	2.2	41
22	Nanopatterning of a thin ferromagnetic CoFe film by focused-ion-beam irradiation. <i>Applied Physics Letters</i> , 2005, 87, 022507.	3.3	40
23	Effect of Ga <sup>+</sup> ion irradiation on the structural and magnetic properties of CoFe/IrMn exchange biased bilayers. <i>Journal of Applied Physics</i> , 2004, 95, 7772-7778.	2.5	39
24	Direct observation of domain wall structures in curved permalloy wires containing an antinotch. <i>Journal of Applied Physics</i> , 2008, 103, .	2.5	39
25	Fast Pixelated Detectors in Scanning Transmission Electron Microscopy. Part I: Data Acquisition, Live Processing, and Storage. <i>Microscopy and Microanalysis</i> , 2020, 26, 653-666.	0.4	39
26	A transmission electron microscope study of Néel skyrmion magnetic textures in multilayer thin film systems with large interfacial chiral interaction. <i>Scientific Reports</i> , 2018, 8, 5703.	3.3	38
27	Effect of Substrate Hardness on Splat Morphology in High-Velocity Thermal Spray Coatings. <i>Journal of Thermal Spray Technology</i> , 2006, 15, 663-669.	3.1	37
28	Investigation of Microstructural and Electrochemical Properties of Impregnated (La,Sr)(Ti,Mn)O <sub>3-δ</sub> as a Potential Anode Material in High-Temperature Solid Oxide Fuel Cells. <i>Chemistry of Materials</i> , 2011, 23, 3841-3847.	6.7	36
29	Site-specific specimen preparation for atom probe tomography of grain boundaries. <i>Physica B: Condensed Matter</i> , 2007, 394, 267-269.	2.7	30
30	Growth of GaN by metal organic vapor phase epitaxy on ZnO-buffered c-sapphire substrates. <i>Journal of Crystal Growth</i> , 2008, 310, 944-947.	1.5	30
31	Strain Anisotropy and Magnetic Domains in Embedded Nanomagnets. <i>Small</i> , 2019, 15, e1904738.	10.0	30
32	Synthetic ferrimagnet nanowires with very low critical current density for coupled domain wall motion. <i>Scientific Reports</i> , 2017, 7, 1640.	3.3	28
33	Controlled Individual Skyrmion Nucleation at Artificial Defects Formed by Ion Irradiation. <i>Small</i> , 2020, 16, e1907450.	10.0	27
34	Reproducible domain wall pinning by linear non-topographic features in a ferromagnetic nanowire. <i>Applied Physics Letters</i> , 2012, 100, 232402.	3.3	25
35	Beam-induced Fe Nanopillars as Tunable Domain Wall Pinning Sites. <i>Advanced Functional Materials</i> , 2014, 24, 3508-3514.	14.9	24
36	Fast Pixelated Detectors in Scanning Transmission Electron Microscopy. Part II: Post-Acquisition Data Processing, Visualization, and Structural Characterization. <i>Microscopy and Microanalysis</i> , 2020, 26, 944-963.	0.4	24

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37	Three dimensional imaging of deformation modes in TiN-based thin film coatings. Thin Solid Films, 2007, 515, 3190-3195.	1.8	23
38	Quantitative TEM imaging of the magnetostructural and phase transitions in FeRh thin film systems. Scientific Reports, 2017, 7, 17835.	3.3	23
39	Direct comparison of domain wall behavior in permalloy nanowires patterned by electron beam lithography and focused ion beam milling. Journal of Applied Physics, 2011, 110, 083904.	2.5	22
40	Mask assisted fabrication of nanoislands of BiFeO <sub>3</sub> by ion beam milling. Journal of Applied Physics, 2013, 113, .	2.5	20
41	Modification of the magnetic properties of exchange coupled NiFe/FeMn films by Ga <sup>+</sup> ion irradiation. Journal of Magnetism and Magnetic Materials, 2005, 290-291, 731-734.	2.3	19
42	Fabrication of high quality plan-view TEM specimens using the focused ion beam. Micron, 2014, 66, 9-15.	2.2	19
43	Medipix2/Timepix detector for time resolved Transmission Electron Microscopy. Journal of Instrumentation, 2011, 6, C12052-C12052.	1.2	17
44	Nanoscale Mapping of the Magnetic Properties of (111)-Oriented La <sub>0.67</sub> Sr <sub>0.33</sub> MnO <sub>3</sub> . Nano Letters, 2015, 15, 5868-5874.	9.1	16
45	A Comparison of a Direct Electron Detector and a High-Speed Video Camera for a Scanning Precession Electron Diffraction Phase and Orientation Mapping. Microscopy and Microanalysis, 2020, 26, 1110-1116.	0.4	16
46	Spin-transfer torque efficiency measured using a Permalloy nanobridge. Applied Physics Letters, 2010, 97, 202505.	3.3	15
47	Three-dimensional study of indentation-induced cracks in an amorphous carbon coating on a steel substrate. Journal of Materials Research, 2006, 21, 2600-2605.	2.6	14
48	Vortex domain wall chirality rectification due to the interaction with end domain spin structures in permalloy nanowires. Applied Physics Letters, 2009, 95, .	3.3	14
49	Engineering Magnetic Domain-Wall Structure in Permalloy Nanowires. Physical Review Applied, 2015, 3, .	3.8	13
50	Antiferromagnetic-ferromagnetic phase domain development in nanopatterned FeRh islands. Physical Review Materials, 2018, 2, .	2.4	13
51	Use of a hybrid silicon pixel (Medipix) detector as a STEM detector. Microscopy and Microanalysis, 2015, 21, 1595-1596.	0.4	12
52	Quantifying the performance of a hybrid pixel detector with GaAs:Cr sensor for transmission electron microscopy. Ultramicroscopy, 2021, 227, 113298.	1.9	12
53	Three-dimensional subnanoscale imaging of unit cell doubling due to octahedral tilting and cation modulation in strained perovskite thin films. Physical Review Materials, 2019, 3, .	2.4	12
54	Imaging and analysis of 3-D structure using a dual beam FIB. Microscopy Research and Technique, 2007, 70, 186-194.	2.2	11

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55	Medipix2 as a highly flexible scanning/imaging detector for transmission electron microscopy. Journal of Instrumentation, 2011, 6, C01047-C01047.	1.2	11
56	Effect of substrate temperature on the magnetic properties of epitaxial sputter-grown Co/Pt. Applied Physics Letters, 2013, 103, .	3.3	11
57	Preparation of high-quality planar FeRh thin films for <i>in situ</i> TEM investigations. Journal of Physics: Conference Series, 2017, 903, 012022.	0.4	11
58	Sub-100 nanosecond temporally resolved imaging with the Medipix3 direct electron detector. Ultramicroscopy, 2020, 210, 112917.	1.9	10
59	Spontaneous creation and annihilation dynamics and strain-limited stability of magnetic skyrmions. Nature Communications, 2020, 11, 3536.	12.8	10
60	Direct visualization of the magnetostructural phase transition in nanoscale FeRh thin films using differential phase contrast imaging. Physical Review Materials, 2020, 4, .	2.4	10
61	Focused ion beam irradiation of ferromagnetic thin films in the presence of an applied field. Journal Physics D: Applied Physics, 2005, 38, 3348-3353.	2.8	8
62	Formation of Magnetic Structure by Domain Wall Confinement in Nanoconstriction. IEEE Transactions on Magnetics, 2011, 47, 2511-2514.	2.1	8
63	Asymmetric magnetic relaxation behavior of domains and domain walls observed through the FeRh first-order metamagnetic phase transition. Physical Review B, 2020, 102, .	3.2	8
64	Comment on "Three-Dimensional, Spin-Resolved Structure of Magnetic Vortex and Antivortex States in Patterned Co Films Using Scanning Ion Microscopy with Polarization Analysis". Physical Review Letters, 2008, 100, 029703.	7.8	7
65	The Effect of Substrate Surface Oxides on the Bonding of NiCr Alloy Particles HVAF Thermally Sprayed onto Aluminum Substrates. Journal of Thermal Spray Technology, 2010, 19, 1024-1031.	3.1	7
66	Controlling magnetic anisotropy in La <sub>0.7</sub> Sr <sub>0.3</sub> MnO <sub>3</sub> nanostructures. Applied Physics Letters, 2014, 104, 052408.	3.3	6
67	Concentric 360° domain wall nesting in magnetic tunnel junction films: a Lorentz TEM study. Journal Physics D: Applied Physics, 2015, 48, 055001.	2.8	6
68	Probing microwave fields and enabling in-situ experiments in a transmission electron microscope. Scientific Reports, 2017, 7, 11064.	3.3	6
69	Back-scattered electron visualization of ferroelectric domains in a BiFeO <sub>3</sub> epitaxial film. Applied Physics Letters, 2017, 111, .	3.3	6
70	Phase domain boundary motion and memristance in gradient-doped FeRh nanopillars induced by spin injection. Applied Physics Letters, 2021, 118, .	3.3	6
71	Microstructural characterization of a carbonitrided heat resisting alloy using focused ion beam-based techniques. Materials at High Temperatures, 2005, 22, 351-358.	1.0	6
72	Microstructural compositional, and optical characterization of GaN grown by metal organic vapor phase epitaxy on ZnO epilayers. Journal of Vacuum Science & Technology B, 2009, 27, 1655.	1.3	5

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73	Epitaxial MOVPE growth of highly c-axis oriented InGaN/GaN films on ZnO-buffered Si (111) substrates. Proceedings of SPIE, 2010, , .	0.8	5
74	Structural analysis of ion irradiated polycrystalline NiFe/FeMn exchange bias systems. European Physical Journal B, 2005, 45, 213-218.	1.5	4
75	Core-shell GaN/ZnO moth-eye nanostructure arrays grown on a-SiO <sub>2</sub> /Si (1 1 1) as a basis for improved InGaN-based photovoltaics and LEDs. Photonics and Nanostructures - Fundamentals and Applications, 2015, 15, 53-58.	2.0	4
76	Magnetic scanning gate microscopy of CoFeB lateral spin valve. AIP Advances, 2017, 7, .	1.3	4
77	Prospects for out-of-plane magnetic field measurements through interference of electron vortex modes in the TEM. Journal of Optics (United Kingdom), 2019, 21, 124002.	2.2	4
78	Atomic resolution HOLZ-STEM imaging of atom position modulation in oxide heterostructures. Ultramicroscopy, 2021, 226, 113296.	1.9	4
79	Sputter-engineering a first-order magnetic phase transition in sub-15-nm-thick single-crystal FeRh films. Physical Review Materials, 2020, 4, .	2.4	4
80	Investigation of the origin of the decrease in exchange biasing in Ga <sup>+</sup> ion irradiated CoFe/IrMn films. Journal of Applied Physics, 2006, 100, 073901.	2.5	3
81	Quantification of Subsurface Damage in a Brittle Insulating Ceramic by Three-Dimensional Focused Ion Beam Tomography. Microscopy and Microanalysis, 2011, 17, 240-245.	0.4	3
82	Developing Rapid and Advanced Visualisation of Magnetic Structures Using 2-D Pixelated STEM Detectors. Microscopy and Microanalysis, 2016, 22, 530-531.	0.4	3
83	Quantitative Differential Phase Contrast Imaging of the Magnetostructural Transition and Current-driven Motion of Domain Walls in FeRh Thin Films. Microscopy and Microanalysis, 2018, 24, 936-937.	0.4	3
84	Investigating Large Area Fabrication of Silicon Quantum Dots in a Nitride Matrix for Photovoltaic Applications. , 2006, , .		2
85	Nanocharacterisation of precipitates in austenite high manganese steels with advanced techniques: HRSTEM and DualEELS mapping. Journal of Physics: Conference Series, 2014, 522, 012031.	0.4	2
86	Effect of annealing on the magnetic states of FEBID-grown cobalt nanopatterns examined by off-axis electron holography. Journal of Microscopy, 2020, 279, 217-221.	1.8	2
87	Control of binary states of ferroic orders in bi-domain BiFeO <sub>3</sub> nanoislands. Applied Physics Letters, 2020, 116, 192904.	3.3	2
88	Modified cantilevers to probe unambiguously out-of-plane piezoresponse. Physical Review Materials, 2018, 2, .	2.4	2
89	Preparation of Site Specific Atom Probe Tips using Focused Ion Beam Technology. Microscopy and Microanalysis, 2006, 12, 1296-1297.	0.4	1
90	Imaging Structure and Magnetisation in New Ways Using 4D STEM. Microscopy and Microanalysis, 2018, 24, 180-181.	0.4	1

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91	Investigating Skyrmions Using Lorentz Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2018, 24, 932-933.	0.4	1
92	Nanomagnets: Strain Anisotropy and Magnetic Domains in Embedded Nanomagnets ( <i>Small</i> 52/2019). <i>Small</i> , 2019, 15, 1970287.	10.0	1
93	Atom Probe Specimen Fabrication Methods using a Dual FIB/SEM. , 2006, , .		0
94	Use of PLD-grown Moth-eye ZnO Nanostructures as Templates for MOVPE Growth of InGaN-Based Photovoltaics. , 2011, , .		0
95	High Resolution Quantitative Lorentz Microscopy. <i>Journal of Physics: Conference Series</i> , 2015, 644, 012026.	0.4	0
96	Magnetic Dynamics Studied by Time-Resolved Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2015, 21, 649-650.	0.4	0
97	TEM characterization of GaSb grown on single crystal offcut Silicon (001). <i>Microscopy and Microanalysis</i> , 2017, 23, 1476-1477.	0.4	0
98	Focused Electron-Beam Induced Deposition, In Situ TEM And Off-Axis Electron Holography Investigation of Bi-Magnetic Core-Shell Nanostructures. <i>Microscopy and Microanalysis</i> , 2019, 25, 56-57.	0.4	0
99	Differential Phase Contrast Imaging of the Magnetostructural Transition and Phase Boundary Motion in Uniform and Gradient-doped FeRh-based Thin Films. <i>Microscopy and Microanalysis</i> , 2019, 25, 1836-1837.	0.4	0
100	Use of PLD-grown Moth-eye ZnO Nanostructures as Templates for MOVPE Growth of InGaN-Based Photovoltaics. , 2011, , .		0