

# Stephen McVitie

## List of Publications by Year in descending order

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150  
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109321  
35  
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144013  
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151  
all docs

151  
docs citations

151  
times ranked

3336  
citing authors

#	ARTICLE	IF	CITATIONS
1	Complex free-space magnetic field textures induced by three-dimensional magnetic nanostructures. Nature Nanotechnology, 2022, 17, 136-142.	31.5	39
2	Phase domain boundary motion and memristance in gradient-doped FeRh nanopillars induced by spin injection. Applied Physics Letters, 2021, 118, .	3.3	6
3	Strong magnon-photon coupling with chip-integrated YIG in the zero-temperature limit. Applied Physics Letters, 2021, 119, .	3.3	20
4	Parallel Mode Differential Phase Contrast in Transmission Electron Microscopy, II: $K_{2 \times 2} CuF_{4 \times 4}$ Phase Transition. Microscopy and Microanalysis, 2021, 27, 1123-1132.	0.4	5
5	Parallel Mode Differential Phase Contrast in Transmission Electron Microscopy, I: Theory and Analysis. Microscopy and Microanalysis, 2021, 27, 1113-1122.	0.4	1
6	Characterisation of magnetisation ripple using Lorentz microscopy: Effect of ultra-thin Ni <sub>79</sub> Fe <sub>21</sub> seed layers on magnetic properties of Ni <sub>45</sub> Fe <sub>55</sub> . Journal of Magnetism and Magnetic Materials, 2021, 535, 168094.	2.3	1
7	Formations of Narrow Stripes and Vortex-Antivortex Pairs in a Quasi-Two-Dimensional Ferromagnet $K_{2 \times 2} CuF_{4 \times 4}$ . Journal of the Physical Society of Japan, 2021, 90, 014702.	1.6	10
8	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
9	Fast Pixelated Detectors in Scanning Transmission Electron Microscopy. Part I: Data Acquisition, Live Processing, and Storage. Microscopy and Microanalysis, 2020, 26, 653-666.	0.4	39
10	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
11	Tuning magnetic order with geometry: Thermalization and defects in two-dimensional artificial spin ices. Physical Review B, 2020, 101, .	3.2	16
12	Controlled Individual Skyrmion Nucleation at Artificial Defects Formed by Ion Irradiation. Small, 2020, 16, e1907450.	10.0	27
13	Artificial Double-Helix for Geometrical Control of Magnetic Chirality. ACS Nano, 2020, 14, 8084-8092.	14.6	58
14	Revealing 3D magnetization of thin films with soft X-ray tomography: magnetic singularities and topological charges. Nature Communications, 2020, 11, 6382.	12.8	29
15	Tensile deformations of the magnetic chiral soliton lattice probed by Lorentz transmission electron microscopy. Physical Review B, 2020, 101, .	3.2	11
16	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
17	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
18	Focused Electron-Beam Induced Deposition, In Situ TEM And Off-Axis Electron Holography Investigation of Bi-Magnetic Core-Shell Nanostructures. Microscopy and Microanalysis, 2019, 25, 56-57.	0.4	0

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19	Heisenberg pseudo-exchange and emergent anisotropies in field-driven pinwheel artificial spin ice. Physical Review B, 2019, 100, .	3.2	11
20	Local Phase Curvature Measurement in STEM With a Pixelated Detector. Microscopy and Microanalysis, 2019, 25, 82-83.	0.4	0
21	Differential Phase Contrast Imaging of the Magnetostructural Transition and Phase Boundary Motion in Uniform and Gradient-doped FeRh-based Thin Films. Microscopy and Microanalysis, 2019, 25, 1836-1837.	0.4	0
22	Order and disorder in the magnetization of the chiral crystal $\text{CrNb}_3\text{S}_6$ . Physical Review B, 2019, 99, .	3.2	27
23	Spin-Hall Nano-Oscillator Simulations. , 2019, , .		0
24	Quantitative imaging of hybrid chiral spin textures in magnetic multilayer systems by Lorentz microscopy. Physical Review B, 2019, 100, .	3.2	21
25	Anomalous Temperature Behavior of the Chiral Spin Helix in $\text{CrNb}_3\text{S}_6$ Thin Lamellae. Physical Review Letters, 2019, 122, 017204.	11.8	29
26	Superferromagnetism and Domain-Wall Topologies in Artificial "Pinwheel" Spin Ice. ACS Nano, 2019, 13, 2213-2222.	14.6	25
27	A transmission electron microscope study of Néel skyrmion magnetic textures in multilayer thin film systems with large interfacial chiral interaction. Scientific Reports, 2018, 8, 5703.	3.3	38
28	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
29	Antiferromagnetic-ferromagnetic phase domain development in nanopatterned FeRh islands. Physical Review Materials, 2018, 2, .	2.4	13
30	Magnetic scanning gate microscopy of CoFeB lateral spin valve. AIP Advances, 2017, 7, .	1.3	4
31	Thickness dependence of spin wave excitations in an artificial square spin ice-like geometry. Journal of Applied Physics, 2017, 121, .	2.5	19
32	Brillouin light scattering study of magnetic-element normal modes in a square artificial spin ice geometry. Journal Physics D: Applied Physics, 2017, 50, 015003.	2.8	25
33	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
34	Pinning and hysteresis in the field dependent diameter evolution of skyrmions in Pt/Co/Ir superlattice stacks. Scientific Reports, 2017, 7, 15125.	3.3	61
35	Synthetic ferrimagnet nanowires with very low critical current density for coupled domain wall motion. Scientific Reports, 2017, 7, 1640.	3.3	28
36	Quantitative TEM imaging of the magnetostructural and phase transitions in FeRh thin film systems. Scientific Reports, 2017, 7, 17835.	3.3	23

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37	Skyrmions in magnetic multilayers: chirality, electrical detection and current-induced motion. , 2017, , .		1
38	Developing Rapid and Advanced Visualisation of Magnetic Structures Using 2-D Pixelated STEM Detectors. Microscopy and Microanalysis, 2016, 22, 530-531.	0.4	3
39	Electron tomography image reconstruction using data-driven adaptive compressed sensing. Scanning, 2016, 38, 251-276.	1.5	8
40	Pixelated detectors and improved efficiency for magnetic imaging in STEM differential phase contrast. Ultramicroscopy, 2016, 165, 42-50.	1.9	109
41	Chiral Surface Twists and Skyrmion Stability in Nanolayers of Cubic Helimagnets. Physical Review Letters, 2016, 117, 087202.	7.8	109
42	Internal structure of hexagonal skyrmion lattices in cubic helimagnets. New Journal of Physics, 2016, 18, 095004.	2.9	82
43	Stability, bistability and instability of amorphous $\text{ZrO}_2$ resistive memory devices. Journal Physics D: Applied Physics, 2016, 49, 095111.	2.8	48
44	Lorentz TEM Imaging of Stripe Structures Embedded in a Soft Magnetic Matrix. Physical Review Applied, 2015, 4, .	3.8	2
45	High Resolution Quantitative Lorentz Microscopy. Journal of Physics: Conference Series, 2015, 644, 012026.	0.4	0
46	Magnetic microscopy and topological stability of homochiral Néel domain walls in a Pt/Co/AlOx trilayer. Nature Communications, 2015, 6, 8957.	12.8	117
47	Magnetic soliton confinement and discretization effects arising from macroscopic coherence in a chiral spin soliton lattice. Physical Review B, 2015, 92, .	3.2	102
48	Aberration corrected Lorentz scanning transmission electron microscopy. Ultramicroscopy, 2015, 152, 57-62.	1.9	74
49	Metastable magnetic domain walls in cylindrical nanowires. Journal of Magnetism and Magnetic Materials, 2015, 381, 457-462.	2.3	37
50	On the origin of differential phase contrast at a locally charged and globally charge-compensated domain boundary in a polar-ordered material. Ultramicroscopy, 2015, 154, 57-63.	1.9	53
51	Engineering Magnetic Domain-Wall Structure in Permalloy Nanowires. Physical Review Applied, 2015, 3, .	3.8	13
52	Compressed Sensing Electron tomography using adaptive dictionaries: a simulation study. Journal of Physics: Conference Series, 2014, 522, 012021.	0.4	2
53	Resistive switching in $\text{ZrO}_2$ films: physical mechanism for filament formation and dissolution. Journal of Physics: Conference Series, 2014, 522, 012045.	0.4	8
54	Measuring and tailoring the Dzyaloshinskii-Moriya interaction in perpendicularly magnetized thin films. Physical Review B, 2014, 90, .	3.2	351

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55	Effect of substrate temperature on the magnetic properties of epitaxial sputter-grown Co/Pt. Applied Physics Letters, 2013, 103, .	3.3	11
56	Unexpected exchange bias behaviour in CoFeB ultrathin films for MTJ sensors investigated by Lorentz microscopy. Journal Physics D: Applied Physics, 2013, 46, 305001.	2.8	1
57	Influence of ion beam assisted deposition parameters on the growth of MgO and CoFeB. Journal of Applied Physics, 2012, 111, 07C117.	2.5	7
58	Optimization of exposure parameters for lift-off process of sub-100 features using a negative tone electron beam resist. , 2012, , .		6
59	Reproducible domain wall pinning by linear non-topographic features in a ferromagnetic nanowire. Applied Physics Letters, 2012, 100, 232402.	3.3	25
60	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
61	Visualization of vortex core polarity in NiFe nanodots by tilted Fresnel images. Ultramicroscopy, 2011, 111, 1276-1285.	1.9	12
62	Formation of Magnetic Structure by Domain Wall Confinement in Nanoconstriction. IEEE Transactions on Magnetics, 2011, 47, 2511-2514.	2.1	8
63	Optical properties of Mn-doped ZnS semiconductor nanoclusters synthesized by a hydrothermal process. Optical Materials, 2011, 33, 308-314.	3.6	101
64	Nanoscale physical microstructure and micromagnetic behaviour of CoIr film with negative anisotropy. Journal Physics D: Applied Physics, 2011, 44, 095001.	2.8	4
65	Medipix2/Timepix detector for time resolved Transmission Electron Microscopy. Journal of Instrumentation, 2011, 6, C12052-C12052.	1.2	17
66	Crystallisation progress in Si-rich ultra-soft nanocomposite alloy fabricated by melt spinning. Journal of Magnetism and Magnetic Materials, 2010, 322, 342-347.	2.3	13
67	Spin-transfer torque efficiency measured using a Permalloy nanobridge. Applied Physics Letters, 2010, 97, 202505.	3.3	15
68	Magnetic imaging of the pinning mechanism of asymmetric transverse domain walls in ferromagnetic nanowires. Applied Physics Letters, 2010, 97, 233102.	3.3	23
69	Dependence of domain wall pinning potential landscapes on domain wall chirality and pinning site geometry in planar nanowires. Physical Review B, 2009, 79, .	3.2	135
70	Academic performance and student engagement in level 1 physics undergraduates. European Journal of Physics, 2009, 30, 1153-1161.	0.6	3
71	Very high resolution etching of magnetic nanostructures in organic gases. Microelectronic Engineering, 2008, 85, 988-991.	2.4	12
72	Direct observation of changes to domain wall structures in magnetic nanowires of varying width. Applied Physics Letters, 2008, 93, 202505.	3.3	32

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73	Magnetization processes in single-layer and laminated CoFe films patterned into multiscale elements with write-head-like geometries. Journal of Applied Physics, 2008, 104, 013925.	2.5	2
74	Direct observation of domain wall structures in curved permalloy wires containing an antinotch. Journal of Applied Physics, 2008, 103, .	2.5	39
75	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
76	Quantitative measurements of phase using the transport of intensity equation. Journal of Physics: Conference Series, 2008, 126, 012041.	0.4	4
77	The effect of roughness on the micromagnetic properties of high moment multilayer films. Journal Physics D: Applied Physics, 2007, 40, 3991-3997.	2.8	3
78	Micromagnetic reversal behavior of multiscale permalloy elements. Journal of Applied Physics, 2007, 102, 013911.	2.5	4
79	Controlled domain wall injection into ferromagnetic nanowires from an optimized pad geometry. Applied Physics Letters, 2007, 91, 022506.	3.3	51
80	On the scaling behaviour of cross-tie domain wall structures in patterned NiFe elements. Europhysics Letters, 2007, 80, 57003.	2.0	10
81	Transmission electron microscopy characterisation of permalloy elements fabricated by focussed ion beam lithography. Journal of Physics: Conference Series, 2006, 26, 187-190.	0.4	3
82	Quantitative Fresnel Lorentz microscopy and the transport of intensity equation. Ultramicroscopy, 2006, 106, 423-431.	1.9	56
83	Transitions Between Vortex and Transverse Walls in NiFe Nano-Structures. IEEE Transactions on Magnetism, 2006, 42, 2966-2968.	2.1	6
84	Lorentz microscopy studies of domain wall trap structures. Journal of Applied Physics, 2006, 100, 033902.	2.5	25
85	Transition from vortex to transverse walls in NiFe nano-structures. , 2006, , .		0
86	Transmission electron microscopy study of CoFe films with high saturation magnetization. Journal of Applied Physics, 2006, 100, 053915.	2.5	12
87	Investigation of the origin of the decrease in exchange biasing in Ga <sup>+</sup> ion irradiated CoFe <sup>2+</sup> /IrMn films. Journal of Applied Physics, 2006, 100, 073901.	2.5	3
88	Controlled Switching in Magnetic Thin Film Elements. , 2006, , .		0
89	Structural analysis of ion irradiated polycrystalline NiFe/FeMn exchange bias systems. European Physical Journal B, 2005, 45, 213-218.	1.5	4
90	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

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91	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
92	Nanopatterning magnetic thin films by Ga ion irradiation. , 2005, , .		0
93	Lorentz microscopy studies of domain wall trap structures. , 2005, , .		3
94	Imaging Amperian currents by Lorentz microscopy. Journal Physics D: Applied Physics, 2004, 37, 280-288.	2.8	9
95	A new design of specimen stage for in situ magnetising experiments in the transmission electron microscope. Ultramicroscopy, 2004, 99, 65-72.	1.9	28
96	Introduction and control of metastable states in elliptical and rectangular magnetic nanoelements. Applied Physics Letters, 2004, 84, 4406-4408.	3.3	33
97	Reversal mechanisms and metastable states in magnetic nanoelements. Journal of Applied Physics, 2004, 96, 5173-5179.	2.5	23
98	Lorentz Microscopy in the Study of Magnetic Thin Films. Microscopy and Microanalysis, 2004, 10, 42-43.	0.4	0
99	Magnetization of Co elements sensed by semiconductor transport magnetometry and transmission electron microscopy. Journal of Applied Physics, 2003, 93, 7906-7908.	2.5	2
100	TEM studies of the switching characteristics of small permalloy elements as a function of field orientation. Journal Physics D: Applied Physics, 2003, 36, 3099-3102.	2.8	5
101	Role of vortices in magnetization reversal of rectangular NiFe elements. Journal Physics D: Applied Physics, 2001, 34, 160-166.	2.8	51
102	Imaging magnetic domain structure in sub-500 nm thin film elements. Journal of Applied Physics, 2001, 89, 7174-7176.	2.5	42
103	High resolution measurement and modelling of magnetic domain structures in epitaxial FePd (001) L10 films with perpendicular magnetisation. Journal of Magnetism and Magnetic Materials, 2001, 223, 138-146.	2.3	32
104	Electrostatic charging artefacts in Lorentz electron tomography of MFM tip stray fields. Journal Physics D: Applied Physics, 2001, 34, 1326-1332.	2.8	10
105	Quantitative imaging of magnetic domain walls in thin films using Lorentz and magnetic force microscopies. Journal of Applied Physics, 2001, 90, 5220-5227.	2.5	45
106	Quantitative field measurements from magnetic force microscope tips and comparison with point and extended charge models. Journal of Applied Physics, 2001, 89, 3656-3661.	2.5	49
107	Investigation of the influence of edge structure on the micromagnetic behavior of small magnetic elements. Journal of Applied Physics, 2000, 87, 2994-2999.	2.5	62
108	Damage caused to interlayer coupling of magnetic multilayers by residual gases. Physical Review B, 2000, 61, 4131-4140.	3.2	19

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109	Interactions and switching field distributions of nanoscale magnetic elements. Journal of Applied Physics, 2000, 87, 5105-5107.	2.5	32
110	Switching Behaviour of Sub-Micron Magnetic Elements Studied By Tem. Microscopy and Microanalysis, 1999, 5, 16-17.	0.4	0
111	Characterisation of FeBSiC coated MFM tips using Lorentz electron tomography and MFM. IEEE Transactions on Magnetics, 1999, 35, 3986-3988.	2.1	8
112	The effect of oblique incidence evaporation on the magnetic properties of thin film elements. Journal Physics D: Applied Physics, 1999, 32, 2714-2720.	2.8	1
113	Effects of gas damage on coupling and anisotropy in sputtered Co/Cu multilayers. Journal of Magnetism and Magnetic Materials, 1999, 198-199, 408-411.	2.3	5
114	Preparation and characterisation of a new amorphous tip coating for application in magnetic force microscopy. Journal of Magnetism and Magnetic Materials, 1999, 205, 131-135.	2.3	6
115	Switching of nanoscale magnetic elements. Applied Physics Letters, 1999, 75, 3683-3685.	3.3	76
116	Magnetisation Processes in Magnetic Nanostructures. , 1999, , 145-158.		0
117	Direct observation of magnetization reversal processes in micron-sized elements of spin-valve material. Journal of Applied Physics, 1998, 83, 5321-5325.	2.5	59
118	Characterisation of MFM tip fields by electron tomography. IEEE Transactions on Magnetics, 1997, 33, 4062-4064.	2.1	17
119	Magnetisation Reversal in Cobalt and Permalloy Nano-Elements. , 1997, , 309-313.		0
120	Reversal Mechanisms in Lithographically Defined Magnetic Thin Film Elements Imaged by Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 1997, 3, 146-153.	0.4	29
121	Visualization of Domain Wall Propagation in Ultra-Thin Co/Pt Films Using Transmission Electron Microscopy. , 1997, , 537-542.		5
122	Magnetic properties of magnetite arrays produced by the method of electron beam lithography. Geophysical Research Letters, 1996, 23, 2847-2850.	4.0	39
123	Electron beam fabrication and characterization of high-resolution magnetic force microscopy tips. Journal of Applied Physics, 1996, 79, 2913-2919.	2.5	37
124	Magnetic force microscopy of soft magnetic materials. Journal of Magnetism and Magnetic Materials, 1996, 157-158, 555-556.	2.3	10
125	The fabrication and magnetic properties of acicular magnetic nano-elements. IEEE Transactions on Magnetics, 1996, 32, 4452-4457.	2.1	77
126	In-situ magnetising experiments using coherent magnetic imaging in TEM. Journal of Magnetism and Magnetic Materials, 1995, 148, 232-236.	2.3	38



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127	Magnetic imaging of magnetic force microscope tips. Journal of Magnetism and Magnetic Materials, 1995, 148, 237-238.	2.3	11
128	Imaging domains in Co/Pt multilayers by magnetic force microscopy. Applied Physics Letters, 1995, 67, 2566-2568.	3.3	8
129	Coherent Lorentz Imaging of Soft, Thin-Film Magnetic Materials. MRS Bulletin, 1995, 20, 55-58.	3.5	8
130	Magnetic stray fields of Co/Cr microstrips measured by Lorentz microscopy. Journal of Applied Physics, 1994, 75, 3002-3007.	2.5	3
131	Coherent magnetic imaging by TEM. IEEE Transactions on Magnetism, 1994, 30, 4479-4484.	2.1	119
132	Instrumentation, techniques, and applications of electron microscopy in the solid state physics group at Glasgow university. Microscopy Research and Technique, 1993, 24, 316-332.	2.2	0
133	Stray field and Lorentz image calculation of a longitudinal recording medium. IEEE Transactions on Magnetism, 1993, 29, 3718-3720.	2.1	3
134	Model stray field calculations of a longitudinal recording medium. Journal of Magnetism and Magnetic Materials, 1992, 104-107, 963-964.	2.3	4
135	Reconstruction of induction distributions in thin films from DPC images. Journal of Magnetism and Magnetic Materials, 1992, 104-107, 315-316.	2.3	18
136	The influence of evaporation rate on the domain structures of permalloy and cobalt small magnetic particles. Journal of Magnetism and Magnetic Materials, 1992, 104-107, 329-330.	2.3	7
137	In-situ magnetising experiments on small regularly shaped permalloy particles. Journal of Magnetism and Magnetic Materials, 1991, 95, 76-84.	2.3	68
138	Multiple dark-field STEM: A new method for beam-sensitive polymers. Journal of Polymer Science, Part B: Polymer Physics, 1991, 29, 31-38.	2.1	5
139	Mapping induction distributions by transmission electron microscopy (invited). Journal of Applied Physics, 1991, 69, 6078-6083.	2.5	36
140	The depth sensitivity of Type II magnetic contrast. Proceedings Annual Meeting Electron Microscopy Society of America, 1991, 49, 766-767.	0.0	0
141	Magnetisation distributions in thin film recording heads by Type II contrast. IEEE Transactions on Magnetism, 1990, 26, 1337-1339.	2.1	16
142	Modified differential phase contrast Lorentz microscopy for improved imaging of magnetic structures. IEEE Transactions on Magnetism, 1990, 26, 1506-1511.	2.1	156
143	Measurement of domain wall widths in Permalloy using differential phase contrast imaging in stem. Journal of Magnetism and Magnetic Materials, 1990, 83, 97-98.	2.3	19
144	In-situ magnetising experiments on small regular particles fabricated by electron beam lithography. Journal of Magnetism and Magnetic Materials, 1990, 83, 223-224.	2.3	21

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145	Magnetic structure determination in small regularly shaped particle using transmission electron microscopy. IEEE Transactions on Magnetics, 1988, 24, 1778-1780.	2.1	46
146	EFFECT OF APPLICATION OF FIELDS ON THE DOMAIN STRUCTURE IN SMALL REGULARLY SHAPED MAGNETIC PARTICLES. Journal De Physique Colloque, 1988, 49, C8-1817-C8-1818.	0.2	2
147	Characterisation Of MFM Tip Fields By Electron Tomography. , 0, , .		0
148	Magnetic imaging of nanostructured magnetic elements. , 0, , .		0
149	Effect of edge structure on switching of patterned elements. , 0, , .		0
150	In-situ Lorentz microscopy of magnetic nanostructures. , 0, , .		1