

Charudatta Phatak

List of Publications by Year in descending order

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84
papers

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citations

304743

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345221

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85
all docs

85
docs citations

85
times ranked

2314
citing authors

#	ARTICLE	IF	CITATIONS
1	Nanoscale structure of the magnetic induction at monopole defects in artificial spin-ice lattices. <i>Physical Review B</i> , 2011, 83, .	3.2	96
2	Three-Dimensional Study of the Vector Potential of Magnetic Structures. <i>Physical Review Letters</i> , 2010, 104, 253901.	7.8	84
3	Nanoscale Skyrmions in a Nonchiral Metallic Multiferroic: Ni ₂ MnGa. <i>Nano Letters</i> , 2016, 16, 4141-4148.	9.1	79
4	Visualization of the Magnetic Structure of Sculpted Three-Dimensional Cobalt Nanospirals. <i>Nano Letters</i> , 2014, 14, 759-764.	9.1	73
5	Variability and origins of grain boundary electric potential detected by electron holography and atom-probe tomography. <i>Nature Materials</i> , 2020, 19, 887-893.	27.5	72
6	Direct Observation of Unconventional Topological Spin Structure in Coupled Magnetic Discs. <i>Physical Review Letters</i> , 2012, 108, 067205.	7.8	65
7	Enhancement of Local Piezoresponse in Polymer Ferroelectrics <i>via</i> Nanoscale Control of Microstructure. <i>ACS Nano</i> , 2015, 9, 1809-1819.	14.6	65
8	Vector field electron tomography of magnetic materials: Theoretical development. <i>Ultramicroscopy</i> , 2008, 108, 503-513.	1.9	59
9	A convolutional neural network approach to calibrating the rotation axis for X-ray computed tomography. <i>Journal of Synchrotron Radiation</i> , 2017, 24, 469-475.	2.4	59
10	Recent advances in Lorentz microscopy. <i>Current Opinion in Solid State and Materials Science</i> , 2016, 20, 107-114.	11.5	53
11	Creation of artificial skyrmions and antiskyrmions by anisotropy engineering. <i>Scientific Reports</i> , 2016, 6, 31248.	3.3	46
12	Real and effective thermal equilibrium in artificial square spin ices. <i>Physical Review B</i> , 2013, 87, .	3.2	40
13	In situ lorentz TEM magnetization study of a Ni-Mn-Ga ferromagnetic shape memory alloy. <i>Acta Materialia</i> , 2011, 59, 4895-4906.	7.9	35
14	Effect of nanopatterning on mechanical properties of Lithium anode. <i>Scientific Reports</i> , 2018, 8, 2514.	3.3	33
15	X-ray Irradiation Induced Reversible Resistance Change in Pt/TiO ₂ /Pt Cells. <i>ACS Nano</i> , 2014, 8, 1584-1589.	14.6	32
16	Understanding Complex Magnetic Spin Textures with Simulation-Assisted Lorentz Transmission Electron Microscopy. <i>Physical Review Applied</i> , 2021, 15, .	3.8	31
17	Determination of magnetic vortex polarity from a single Lorentz Fresnel image. <i>Ultramicroscopy</i> , 2009, 109, 264-267.	1.9	29
18	Effect of the dielectric constant of a liquid electrolyte on lithium metal anodes. <i>Electrochimica Acta</i> , 2019, 300, 299-305.	5.2	27

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19	In situ Lorentz TEM magnetization studies on a FePdCo martensitic alloy. <i>Acta Materialia</i> , 2011, 59, 6646-6657.	7.9	26
20	Interface-controlled high dielectric constant Al ₂ O ₃ /TiO _x nanolaminates with low loss and low leakage current density for new generation nanodevices. <i>Journal of Applied Physics</i> , 2013, 114, .	2.5	25
21	Tailoring dielectric relaxation in ultra-thin high-dielectric constant nanolaminates for nanoelectronics. <i>Applied Physics Letters</i> , 2013, 102, .	3.3	25
22	Real-space observation of magnetic excitations and avalanche behavior in artificial quasicrystal lattices. <i>Scientific Reports</i> , 2016, 6, 34384.	3.3	24
23	On the magnetostatics of chains of magnetic nanoparticles. <i>Journal of Magnetism and Magnetic Materials</i> , 2011, 323, 2912-2922.	2.3	23
24	Long-range Stripe Nanodomains in Epitaxial (110) BiFeO ₃ Thin Films on (100) NdGaO ₃ Substrate. <i>Scientific Reports</i> , 2017, 7, 4857.	3.3	23
25	Magnetic interactions and reversal of artificial square spin ices. <i>New Journal of Physics</i> , 2012, 14, 075028.	2.9	22
26	Quantifying chiral exchange interaction for Néel-type skyrmions via Lorentz transmission electron microscopy. <i>Physical Review B</i> , 2019, 99, .	3.2	21
27	Size effects of micro-pattern on lithium metal surface on the electrochemical performance of lithium metal secondary batteries. <i>Journal of Power Sources</i> , 2018, 408, 136-142.	7.8	20
28	Bipolar resistance switching in Pt/CuOx/Pt via local electrochemical reduction. <i>Applied Physics Letters</i> , 2014, 104, .	3.3	19
29	Separation of electrostatic and magnetic phase shifts using a modified transport-of-intensity equation. <i>Ultramicroscopy</i> , 2014, 139, 5-12.	1.9	19
30	3D reconstruction of magnetization from dichroic soft X-ray transmission tomography. <i>Journal of Synchrotron Radiation</i> , 2018, 25, 1144-1152.	2.4	17
31	Iterative reconstruction of magnetic induction using Lorentz transmission electron tomography. <i>Ultramicroscopy</i> , 2015, 150, 54-64.	1.9	16
32	Insights into Lithium Surface: Stable Cycling by Controlled 10 ^{1/4} m Deep Surface Relief, Reinterpreting the Natural Surface Defect on Lithium Metal Anode. <i>ACS Applied Energy Materials</i> , 2019, 2, 5656-5664.	5.1	16
33	Curved Three-Dimensional Cobalt Nanohelices for Use in Domain Wall Device Applications. <i>ACS Applied Nano Materials</i> , 2020, 3, 6009-6016.	5.0	14
34	Differential programming enabled functional imaging with Lorentz transmission electron microscopy. <i>Npj Computational Materials</i> , 2021, 7, .	8.7	13
35	3D reconstruction of the magnetic vector potential using model based iterative reconstruction. <i>Ultramicroscopy</i> , 2017, 182, 131-144.	1.9	12
36	Reduced electron exposure for energy-dispersive spectroscopy using dynamic sampling. <i>Ultramicroscopy</i> , 2018, 184, 90-97.	1.9	12

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37	Observation of transient states during magnetization reversal in a quasicrystal artificial spin ice. <i>Physical Review B</i> , 2018, 98, .	3.2	11
38	Ferroelectric Domain Studies of Patterned (001) BiFeO ₃ by Angle-Resolved Piezoresponse Force Microscopy. <i>Scientific Reports</i> , 2018, 8, 203.	3.3	9
39	Magnetostrictive loss reduction through stress relief annealing in an FeNi-based metal amorphous nanocomposite. <i>Journal of Materials Research</i> , 2021, 36, 2843-2855.	2.6	9
40	Zig-zag Self-assembly of Magnetic Octahedral Fe ₃ O ₄ Nanocrystals using in situ Liquid Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2016, 22, 36-37.	0.4	8
41	Tailoring magnetic skyrmions by geometric confinement of magnetic structures. <i>Applied Physics Letters</i> , 2017, 111, 242405.	3.3	8
42	Emergent magnetic ordering and topological frustration in quasicrystal artificial spin ices. <i>Physical Review B</i> , 2019, 99, .	3.2	8
43	Understanding curvature effects on the magnetization reversal of patterned permalloy Archimedean spirals. <i>Applied Physics Letters</i> , 2021, 118, .	3.3	8
44	Quantitative 3D electromagnetic field determination of 1D nanostructures from single projection. <i>Ultramicroscopy</i> , 2016, 164, 24-30.	1.9	7
45	Local Multimodal Electro-Chemical-Structural Characterization of Solid-Electrolyte Grain Boundaries. <i>Advanced Energy Materials</i> , 2021, 11, 2003309.	19.5	7
46	Aberration Corrected Lorentz Microscopy for Perpendicular Magnetic Recording Media. <i>Microscopy and Microanalysis</i> , 2008, 14, 832-833.	0.4	5
47	Ferromagnetic domain behavior and phase transition in bilayer manganites investigated at the nanoscale. <i>Physical Review B</i> , 2015, 92, .	3.2	5
48	Magnetic vortex nucleation/annihilation in artificial-ferrimagnet microdisks. <i>Journal of Applied Physics</i> , 2017, 122, 083903.	2.5	5
49	SLADS-Net: Supervised Learning Approach for Dynamic Sampling using Deep Neural Networks. <i>IS&T International Symposium on Electronic Imaging</i> , 2018, 30, 131-1-1316.	0.4	5
50	Angle Resolved TEM Imaging of Pt Nanoparticles. <i>Catalysis Letters</i> , 2010, 140, 85-89.	2.6	4
51	Vortex jump behavior in coupled nanomagnetic heterostructures. <i>Applied Physics Letters</i> , 2014, 105, 212409.	3.3	4
52	Dielectric behavior related to TiO _x phase change to TiO ₂ in TiO _x /Al ₂ O ₃ nanolaminate thin films. <i>MRS Communications</i> , 2014, 4, 67-72.	1.8	4
53	Field-Dependent Magnetic Domain Behavior in van der Waals Fe ₃ GeTe ₂ . <i>Jom</i> , 2022, 74, 2310-2318.	1.9	4
54	Theoretical study of ferroelectric nanoparticles using phase reconstructed electron microscopy. <i>Physical Review B</i> , 2014, 89, .	3.2	3

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55	Model-Based Iterative Reconstruction of Magnetization Using Vector Field Electron Tomography. IEEE Transactions on Computational Imaging, 2018, 4, 432-446.	4.4	3
56	Nanostructure refinement and phase formation of flash annealed FeNi-based soft magnetic alloys. Materials Research Bulletin, 2022, 152, 111839.	5.2	3
57	Iterative Reconstruction of the Magnetization and Charge Density using Vector Field Electron Tomography. Microscopy and Microanalysis, 2016, 22, 1686-1687.	0.4	2
58	Under-sampling and Image Reconstruction for Scanning Electron Microscopes. Microscopy and Microanalysis, 2017, 23, 136-137.	0.4	2
59	Direct Evidence of Topological Defects in Electron Waves through Nanoscale Localized Magnetic Charge. Nano Letters, 2018, 18, 6989-6994.	9.1	2
60	Quantifying leakage fields at ionic grain boundaries using off-axis electron holography. Journal of Applied Physics, 2020, 128, .	2.5	2
61	Reconstruction of 3D Magnetic Induction Using Lorentz TEM. Microscopy and Microanalysis, 2008, 14, 1054-1055.	0.4	1
62	Determination of the 3-D Magnetic Vector Potential using Lorentz Transmission Electron Microscopy. Microscopy and Microanalysis, 2009, 15, 134-135.	0.4	1
63	Improved Phase Reconstruction for Magnetic Materials in a Low-Aberration Environment. Microscopy and Microanalysis, 2009, 15, 1276-1277.	0.4	1
64	Domain Observations in Fe-Pd-Co by Dynamic in-situ Lorentz TEM. Microscopy and Microanalysis, 2010, 16, 1236-1237.	0.4	1
65	Learning From Scanning Transmission Electron Microscopy to Enhance Transmission X-ray Microscopy: How We Can Merge STEM and TXM Datasets?. Microscopy and Microanalysis, 2016, 22, 240-241.	0.4	1
66	Visualization of Magnetization in CoFe Nanofibers by Lorentz TEM and Electron Holography. Microscopy and Microanalysis, 2016, 22, 1692-1693.	0.4	1
67	Topological Defects and Interaction of Electron Waves and Localized Magnetic Charge. Microscopy and Microanalysis, 2018, 24, 940-941.	0.4	1
68	Correlative Magnetic Imaging of Heat-Assisted Magnetic Recording Media in Cross Section Using Lorentz TEM and MFM. IEEE Transactions on Magnetics, 2018, 54, 1-5.	2.1	1
69	Understanding Curvature Effects on Magnetic Domains in 3D Nanostructures. Microscopy and Microanalysis, 2019, 25, 26-27.	0.4	1
70	Mesoscale Confinement Effects and Emergent Quantum Interference in Titania Antidot Thin Films. ACS Nano, 2021, 15, 12935-12944.	14.6	1
71	Geometric control of emergent antiferromagnetic order in coupled artificial spin ices. Cell Reports Physical Science, 2022, 3, 100846.	5.6	1
72	Three dimensional magnetic field reconstruction of artificial Skyrmion heterostructures. Microscopy and Microanalysis, 2015, 21, 1959-1960.	0.4	0

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73	Three Dimensional Visualization of Electromagnetic Fields from One Dimensional Nanostructures. Microscopy and Microanalysis, 2015, 21, 1977-1978.	0.4	0
74	Towards Multiresolution Phase Retrieval using Electron Ptychography. Microscopy and Microanalysis, 2015, 21, 2151-2152.	0.4	0
75	Domain behavior in functional materials studied using Lorentz microscopy. Microscopy and Microanalysis, 2016, 22, 1680-1681.	0.4	0
76	Honeycomb Networks of Metal Oxides from Self-Assembling PS-PMMA Block Copolymers. Microscopy and Microanalysis, 2017, 23, 1654-1655.	0.4	0
77	Modified Transport-of-Intensity Approach for Mapping In-situ Magnetic Induction. Microscopy and Microanalysis, 2017, 23, 930-931.	0.4	0
78	In-situ Electron Holography Study of Grain Boundaries in Cerium Oxide. Microscopy and Microanalysis, 2018, 24, 1466-1467.	0.4	0
79	Correlative SPM/TEM Investigation of the Electrochemical Deposition of Lithium Metal. Microscopy and Microanalysis, 2018, 24, 1524-1525.	0.4	0
80	Imaging Magnetic Domains in Functional Nanoscale Heterostructures using Lorentz microscopy. Microscopy and Microanalysis, 2018, 24, 910-911.	0.4	0
81	Electron Holography Investigation of Resistive Switching CeO ₂ / STO Nanocolumns. Microscopy and Microanalysis, 2020, 26, 1950-1951.	0.4	0
82	Understanding the Selective Deposition of Li Metal on Nonuniform Electrode Surfaces Using Atomic Force Microscopy. Journal of the Electrochemical Society, 2021, 168, 020534.	2.9	0
83	Behavior of thermally quenched topological defects in quasicrystal artificial spin ices. Physical Review B, 2021, 104, .	3.2	0
84	Exploring the Local Energy Landscape of Aperiodic Artificial Spin Ices via Lorentz TEM. Microscopy and Microanalysis, 2020, 26, 1770-1771.	0.4	0