

# Charudatta Phatak

## List of Publications by Year in descending order

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84  
papers

1,464  
citations

304743

22  
h-index

345221

36  
g-index

85  
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85  
docs citations

85  
times ranked

2314  
citing authors

#	ARTICLE	IF	CITATIONS
1	Nanostructure refinement and phase formation of flash annealed FeNi-based soft magnetic alloys. <i>Materials Research Bulletin</i> , 2022, 152, 111839.	5.2	3
2	Geometric control of emergent antiferromagnetic order in coupled artificial spin ices. <i>Cell Reports Physical Science</i> , 2022, 3, 100846.	5.6	1
3	Field-Dependent Magnetic Domain Behavior in van der Waals Fe <sub>3</sub> GeTe <sub>2</sub> . <i>Jom</i> , 2022, 74, 2310-2318.	1.9	4
4	Local Multimodal Electrochemical Structural Characterization of Solid Electrolyte Grain Boundaries. <i>Advanced Energy Materials</i> , 2021, 11, 2003309.	19.5	7
5	Understanding the Selective Deposition of Li Metal on Nonuniform Electrode Surfaces Using Atomic Force Microscopy. <i>Journal of the Electrochemical Society</i> , 2021, 168, 020534.	2.9	0
6	Understanding Complex Magnetic Spin Textures with Simulation-Assisted Lorentz Transmission Electron Microscopy. <i>Physical Review Applied</i> , 2021, 15, .	3.8	31
7	Understanding curvature effects on the magnetization reversal of patterned permalloy Archimedean spirals. <i>Applied Physics Letters</i> , 2021, 118, .	3.3	8
8	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
9	Mesoscale Confinement Effects and Emergent Quantum Interference in Titania Antidot Thin Films. <i>ACS Nano</i> , 2021, 15, 12935-12944.	14.6	1
10	Differential programming enabled functional imaging with Lorentz transmission electron microscopy. <i>Npj Computational Materials</i> , 2021, 7, .	8.7	13
11	Behavior of thermally quenched topological defects in quasicrystal artificial spin ices. <i>Physical Review B</i> , 2021, 104, .	3.2	0
12	Quantifying leakage fields at ionic grain boundaries using off-axis electron holography. <i>Journal of Applied Physics</i> , 2020, 128, .	2.5	2
13	Electron Holography Investigation of Resistive Switching CeO <sub>2</sub> / STO Nanocolumns. <i>Microscopy and Microanalysis</i> , 2020, 26, 1950-1951.	0.4	0
14	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
15	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
16	Exploring the Local Energy Landscape of Aperiodic Artificial Spin Ices via Lorentz TEM. <i>Microscopy and Microanalysis</i> , 2020, 26, 1770-1771.	0.4	0
17	Insights into Lithium Surface: Stable Cycling by Controlled 10 $\mu$ 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
18	Understanding Curvature Effects on Magnetic Domains in 3D Nanostructures. <i>Microscopy and Microanalysis</i> , 2019, 25, 26-27.	0.4	1

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19	Effect of the dielectric constant of a liquid electrolyte on lithium metal anodes. <i>Electrochimica Acta</i> , 2019, 300, 299-305.	5.2	27
20	Emergent magnetic ordering and topological frustration in quasicrystal artificial spin ices. <i>Physical Review B</i> , 2019, 99, .	3.2	8
21	Quantifying chiral exchange interaction for Néel-type skyrmions via Lorentz transmission electron microscopy. <i>Physical Review B</i> , 2019, 99, .	3.2	21
22	Effect of nanopatterning on mechanical properties of Lithium anode. <i>Scientific Reports</i> , 2018, 8, 2514.	3.3	33
23	Ferroelectric Domain Studies of Patterned (001) BiFeO <sub>3</sub> by Angle-Resolved Piezoresponse Force Microscopy. <i>Scientific Reports</i> , 2018, 8, 203.	3.3	9
24	Reduced electron exposure for energy-dispersive spectroscopy using dynamic sampling. <i>Ultramicroscopy</i> , 2018, 184, 90-97.	1.9	12
25	Topological Defects and Interaction of Electron Waves and Localized Magnetic Charge. <i>Microscopy and Microanalysis</i> , 2018, 24, 940-941.	0.4	1
26	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
27	Observation of transient states during magnetization reversal in a quasicrystal artificial spin ice. <i>Physical Review B</i> , 2018, 98, .	3.2	11
28	Direct Evidence of Topological Defects in Electron Waves through Nanoscale Localized Magnetic Charge. <i>Nano Letters</i> , 2018, 18, 6989-6994.	9.1	2
29	SLADS-Net: Supervised Learning Approach for Dynamic Sampling using Deep Neural Networks. <i>IS&amp;T International Symposium on Electronic Imaging</i> , 2018, 30, 131-1-1316.	0.4	5
30	Correlative Magnetic Imaging of Heat-Assisted Magnetic Recording Media in Cross Section Using Lorentz TEM and MFM. <i>IEEE Transactions on Magnetics</i> , 2018, 54, 1-5.	2.1	1
31	In-situ Electron Holography Study of Grain Boundaries in Cerium Oxide. <i>Microscopy and Microanalysis</i> , 2018, 24, 1466-1467.	0.4	0
32	Correlative SPM/TEM Investigation of the Electrochemical Deposition of Lithium Metal. <i>Microscopy and Microanalysis</i> , 2018, 24, 1524-1525.	0.4	0
33	Imaging Magnetic Domains in Functional Nanoscale Heterostructures using Lorentz microscopy. <i>Microscopy and Microanalysis</i> , 2018, 24, 910-911.	0.4	0
34	3D reconstruction of magnetization from dichroic soft X-ray transmission tomography. <i>Journal of Synchrotron Radiation</i> , 2018, 25, 1144-1152.	2.4	17
35	Model-Based Iterative Reconstruction of Magnetization Using Vector Field Electron Tomography. <i>IEEE Transactions on Computational Imaging</i> , 2018, 4, 432-446.	4.4	3
36	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

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37	Under-sampling and Image Reconstruction for Scanning Electron Microscopes. <i>Microscopy and Microanalysis</i> , 2017, 23, 136-137.	0.4	2
38	Magnetic vortex nucleation/annihilation in artificial-ferrimagnet microdisks. <i>Journal of Applied Physics</i> , 2017, 122, 083903.	2.5	5
39	Honeycomb Networks of Metal Oxides from Self-Assembling PS-PMMA Block Copolymers. <i>Microscopy and Microanalysis</i> , 2017, 23, 1654-1655.	0.4	0
40	Long-range Stripe Nanodomains in Epitaxial (110) BiFeO <sub>3</sub> Thin Films on (100) NdGaO <sub>3</sub> Substrate. <i>Scientific Reports</i> , 2017, 7, 4857.	3.3	23
41	3D reconstruction of the magnetic vector potential using model based iterative reconstruction. <i>Ultramicroscopy</i> , 2017, 182, 131-144.	1.9	12
42	Modified Transport-of-Intensity Approach for Mapping In-situ Magnetic Induction. <i>Microscopy and Microanalysis</i> , 2017, 23, 930-931.	0.4	0
43	Tailoring magnetic skyrmions by geometric confinement of magnetic structures. <i>Applied Physics Letters</i> , 2017, 111, 242405.	3.3	8
44	Learning From Scanning Transmission Electron Microscopy to Enhance Transmission X-ray Microscopy: How We Can Merge STEM and TXM Datasets?. <i>Microscopy and Microanalysis</i> , 2016, 22, 240-241.	0.4	1
45	Iterative Reconstruction of the Magnetization and Charge Density using Vector Field Electron Tomography. <i>Microscopy and Microanalysis</i> , 2016, 22, 1686-1687.	0.4	2
46	Domain behavior in functional materials studied using Lorentz microscopy. <i>Microscopy and Microanalysis</i> , 2016, 22, 1680-1681.	0.4	0
47	Creation of artificial skyrmions and antiskyrmions by anisotropy engineering. <i>Scientific Reports</i> , 2016, 6, 31248.	3.3	46
48	Real-space observation of magnetic excitations and avalanche behavior in artificial quasicrystal lattices. <i>Scientific Reports</i> , 2016, 6, 34384.	3.3	24
49	Visualization of Magnetization in CoFe Nanofibers by Lorentz TEM and Electron Holography. <i>Microscopy and Microanalysis</i> , 2016, 22, 1692-1693.	0.4	1
50	Nanoscale Skyrmions in a Nonchiral Metallic Multiferroic: Ni <sub>2</sub> MnGa. <i>Nano Letters</i> , 2016, 16, 4141-4148.	9.1	79
51	Zig-zag Self-assembly of Magnetic Octahedral Fe <sub>3</sub> O <sub>4</sub> Nanocrystals using in situ Liquid Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2016, 22, 36-37.	0.4	8
52	Quantitative 3D electromagnetic field determination of 1D nanostructures from single projection. <i>Ultramicroscopy</i> , 2016, 164, 24-30.	1.9	7
53	Recent advances in Lorentz microscopy. <i>Current Opinion in Solid State and Materials Science</i> , 2016, 20, 107-114.	11.5	53
54	Ferromagnetic domain behavior and phase transition in bilayer manganites investigated at the nanoscale. <i>Physical Review B</i> , 2015, 92, .	3.2	5

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55	Three dimensional magnetic field reconstruction of artificial Skyrmion heterostructures. <i>Microscopy and Microanalysis</i> , 2015, 21, 1959-1960.	0.4	0
56	Three Dimensional Visualization of Electromagnetic Fields from One Dimensional Nanostructures. <i>Microscopy and Microanalysis</i> , 2015, 21, 1977-1978.	0.4	0
57	Towards Multiresolution Phase Retrieval using Electron Ptychography. <i>Microscopy and Microanalysis</i> , 2015, 21, 2151-2152.	0.4	0
58	Enhancement of Local Piezoresponse in Polymer Ferroelectrics via Nanoscale Control of Microstructure. <i>ACS Nano</i> , 2015, 9, 1809-1819.	14.6	65
59	Iterative reconstruction of magnetic induction using Lorentz transmission electron tomography. <i>Ultramicroscopy</i> , 2015, 150, 54-64.	1.9	16
60	Vortex jump behavior in coupled nanomagnetic heterostructures. <i>Applied Physics Letters</i> , 2014, 105, 212409.	3.3	4
61	Bipolar resistance switching in Pt/CuOx/Pt via local electrochemical reduction. <i>Applied Physics Letters</i> , 2014, 104, .	3.3	19
62	Theoretical study of ferroelectric nanoparticles using phase reconstructed electron microscopy. <i>Physical Review B</i> , 2014, 89, .	3.2	3
63	Dielectric behavior related to TiOx phase change to TiO2 in TiOx/Al2O3 nanolaminate thin films. <i>MRS Communications</i> , 2014, 4, 67-72.	1.8	4
64	Separation of electrostatic and magnetic phase shifts using a modified transport-of-intensity equation. <i>Ultramicroscopy</i> , 2014, 139, 5-12.	1.9	19
65	X-ray Irradiation Induced Reversible Resistance Change in Pt/TiO <sub>2</sub> /Pt Cells. <i>ACS Nano</i> , 2014, 8, 1584-1589.	14.6	32
66	Visualization of the Magnetic Structure of Sculpted Three-Dimensional Cobalt Nanospirals. <i>Nano Letters</i> , 2014, 14, 759-764.	9.1	73
67	Interface-controlled high dielectric constant Al2O3/TiOx nanolaminates with low loss and low leakage current density for new generation nanodevices. <i>Journal of Applied Physics</i> , 2013, 114, .	2.5	25
68	Tailoring dielectric relaxation in ultra-thin high-dielectric constant nanolaminates for nanoelectronics. <i>Applied Physics Letters</i> , 2013, 102, .	3.3	25
69	Real and effective thermal equilibrium in artificial square spin ices. <i>Physical Review B</i> , 2013, 87, .	3.2	40
70	Magnetic interactions and reversal of artificial square spin ices. <i>New Journal of Physics</i> , 2012, 14, 075028.	2.9	22
71	Direct Observation of Unconventional Topological Spin Structure in Coupled Magnetic Discs. <i>Physical Review Letters</i> , 2012, 108, 067205.	7.8	65
72	On the magnetostatics of chains of magnetic nanoparticles. <i>Journal of Magnetism and Magnetic Materials</i> , 2011, 323, 2912-2922.	2.3	23

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73	In situ Lorentz TEM magnetization studies on a Fe-Pd-Co martensitic alloy. Acta Materialia, 2011, 59, 6646-6657.	7.9	26
74	In situ lorentz TEM magnetization study of a Ni-Mn-Ga ferromagnetic shape memory alloy. Acta Materialia, 2011, 59, 4895-4906.	7.9	35
75	Nanoscale structure of the magnetic induction at monopole defects in artificial spin-ice lattices. Physical Review B, 2011, 83, .	3.2	96
76	Domain Observations in Fe-Pd-Co by Dynamic in-situ Lorentz TEM. Microscopy and Microanalysis, 2010, 16, 1236-1237.	0.4	1
77	Angle Resolved TEM Imaging of Pt Nanoparticles. Catalysis Letters, 2010, 140, 85-89.	2.6	4
78	Three-Dimensional Study of the Vector Potential of Magnetic Structures. Physical Review Letters, 2010, 104, 253901.	7.8	84
79	Determination of magnetic vortex polarity from a single Lorentz Fresnel image. Ultramicroscopy, 2009, 109, 264-267.	1.9	29
80	Determination of the 3-D Magnetic Vector Potential using Lorentz Transmission Electron Microscopy. Microscopy and Microanalysis, 2009, 15, 134-135.	0.4	1
81	Improved Phase Reconstruction for Magnetic Materials in a Low-Aberration Environment. Microscopy and Microanalysis, 2009, 15, 1276-1277.	0.4	1
82	Vector field electron tomography of magnetic materials: Theoretical development. Ultramicroscopy, 2008, 108, 503-513.	1.9	59
83	Reconstruction of 3D Magnetic Induction Using Lorentz TEM. Microscopy and Microanalysis, 2008, 14, 1054-1055.	0.4	1
84	Aberration Corrected Lorentz Microscopy for Perpendicular Magnetic Recording Media. Microscopy and Microanalysis, 2008, 14, 832-833.	0.4	5