Colin Ophus

List of Publications by Year
in descending order

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233 papers	8,215 citations	61984 43 h-index	54911 84 g-index
237 all docs	237 docs citations	237 times ranked	9671 citing authors

#	Article	IF	Citations
1	Short-range order and its impact on the CrCoNi medium-entropy alloy. Nature, 2020, 581, 283-287.	27.8	672
2	Four-Dimensional Scanning Transmission Electron Microscopy (4D-STEM): From Scanning Nanodiffraction to Ptychography and Beyond. Microscopy and Microanalysis, 2019, 25, 563-582.	0.4	470
3	Observation of room-temperature polar skyrmions. Nature, 2019, 568, 368-372.	27.8	417
4	Measurement of the intrinsic strength of crystalline and polycrystalline graphene. Nature Communications, 2013, 4, .	12.8	246
5	Deciphering chemical order/disorder and material properties at the single-atom level. Nature, 2017, 542, 75-79.	27.8	243
6	Metallic NEMS components fabricated from nanocomposite Alâ€“Mo films. Nanotechnology, 2006, 17, 3063-3070.	2.6	223
7	Observing crystal nucleation in four dimensions using atomic electron tomography. Nature, 2019, 570, 500-503.	27.8	219
8	Unravelling structural ambiguities in lithium- and manganese-rich transition metal oxides. Nature Communications, 2015, 6, 8711.	12.8	176
9	Three-dimensional coordinates of individual atoms in materials revealed by electronÂtomography. Nature Materials, 2015, 14, 1099-1103.	27.5	172
10	Formation of two-dimensional transition metal oxide nanosheets with nanoparticles as intermediates. Nature Materials, 2019, 18, 970-976.	27.5	169
11	Strain mapping at nanometer resolution using advanced nano-beam electron diffraction. Applied Physics Letters, 2015, 106, .	3.3	167
12	Hidden structural and chemical order controls lithium transport in cation-disordered oxides for rechargeable batteries. Nature Communications, 2019, 10, 592.	12.8	162
13	Correcting nonlinear drift distortion of scanning probe and scanning transmission electron microscopies from image pairs with orthogonal scan directions. Ultramicroscopy, 2016, 162, 1-9.	1.9	161
14	Towards data-driven next-generation transmission electron microscopy. Nature Materials, 2021, 20, 274-279.	27.5	130
15	Strain fields in twisted bilayer graphene. Nature Materials, 2021, 20, 956-963.	27.5	126
16	A fast image simulation algorithm for scanning transmission electron microscopy. Advanced Structural and Chemical Imaging, 2017, 3, 13.	4.0	121
17	py4DSTEM: A Software Package for Four-Dimensional Scanning Transmission Electron Microscopy Data Analysis. Microscopy and Microanalysis, 2021, 27, 712-743.	0.4	121
18	Efficient linear phase contrast in scanning transmission electron microscopy with matched illumination and detector interferometry. Nature Communications, 2016, 7, 10719.	12.8	102

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19	Extreme mixing in nanoscale transition metal alloys. Matter, 2021, 4, 2340-2353.	10.0	102
20	Diffraction imaging of nanocrystalline structures in organic semiconductor molecular thin films. Nature Materials, 2019, 18, 860-865.	27.5	99
21	Highly monodisperse coreâ€“shell particles created by solid-state reactions. Nature Materials, 2011, 10, 710-715.	27.5	98
22	Hydrogen storage in binary and ternary Mg-based alloys: A comprehensive experimental study. International Journal of Hydrogen Energy, 2010, 35, 2091-2103.	7.1	91
23	Interface lattice displacement measurement to 1pm by geometric phase analysis on aberration-corrected HAADF STEM images. Acta Materialia, 2013, 61, 5646-5663.	7.9	91
24	Creation of skyrmions in van der Waals ferromagnet Fe ₃ GeTe ₂ on (Co/Pd) _n superlattice. Science Advances, 2020, 6, .	10.3	89
25	Atomic Defects in Two Dimensional Materials. Advanced Materials, 2015, 27, 5771-5777.	21.0	88
26	Direct imaging of short-range order and its impact on deformation in Ti-6Al. Science Advances, 2019, 5, eaax2799.	10.3	86
27	Nanoscale stacking faultâ€“assisted room temperature plasticity in flash-sintered TiO ₂. Science Advances, 2019, 5, eaaw5519.	10.3	82
28	Direct Observation of a Long-Lived Single-Atom Catalyst Chiseling Atomic Structures in Graphene. Nano Letters, 2014, 14, 450-455.	9.1	81
29	A streaming multi-GPU implementation of image simulation algorithms for scanning transmission electron microscopy. Advanced Structural and Chemical Imaging, 2017, 3, 15.	4.0	77
30	The chain of chirality transfer in tellurium nanocrystals. Science, 2021, 372, 729-733.	12.6	76
31	Large-scale experimental and theoretical study of graphene grain boundary structures. Physical Review B, 2015, 92, .	3.2	75
32	Optimizing disk registration algorithms for nanobeam electron diffraction strain mapping. Ultramicroscopy, 2017, 176, 170-176.	1.9	71
33	Electron ptychographic phase imaging of light elements in crystalline materials using Wigner distribution deconvolution. Ultramicroscopy, 2017, 180, 173-179.	1.9	67
34	Recording and Using 4D-STEM Datasets in Materials Science. Microscopy and Microanalysis, 2014, 20, 62-63.	0.4	63
35	Atomic electrostatic maps of 1D channels in 2D semiconductors using 4D scanning transmission electron microscopy. Nature Communications, 2019, 10, 1127.	12.8	62
36	Patterned probes for high precision 4D-STEM bragg measurements. Ultramicroscopy, 2020, 209, 112890.	1.9	61

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37	Large polarization gradients and temperature-stable responses in compositionally-graded ferroelectrics. Nature Communications, 2017, 8, 14961.	12.8	60
38	Design and synthesis of multigrain nanocrystals via geometric misfit strain. Nature, 2020, 577, 359-363.	27.8	59
39	Machine learning in scanning transmission electron microscopy. Nature Reviews Methods Primers, 2022, 2, .	21.2	59
40	Orientation mapping of semicrystalline polymers using scanning electron nanobeam diffraction. Micron, 2016, 88, 30-36.	2.2	54
41	Dynamic deformability of individual PbSe nanocrystals during superlattice phase transitions. Science Advances, 2019, 5, eaaw5623.	10.3	52
42	Identifying different stacking sequences in few-layer CVD-grown<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Mo</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>by low-energy atomic-resolution scanning transmission electron microscopy. Physical Review B, 2016, 93, .	3.2	51
43	4D-STEM of Beam-Sensitive Materials. Accounts of Chemical Research, 2021, 54, 2543-2551.	15.6	48
44	Nanoscale mosaicity revealed in peptide microcrystals by scanning electron nanodiffraction. Communications Biology, 2019, 2, 26.	4.4	47
45	Direct measurement of nanostructural change during in situ deformation of a bulk metallic glass. Nature Communications, 2019, 10, 2445.	12.8	46
46	Highly Active Rutile TiO₂ Nanocrystalline Photocatalysts. ACS Applied Materials & Interfaces, 2020, 12, 33058-33068.	8.0	46
47	Multi-pass transmission electron microscopy. Scientific Reports, 2017, 7, 1699.	3.3	44
48	Nanomaterial datasets to advance tomography in scanning transmission electron microscopy. Scientific Data, 2016, 3, 160041.	5.3	42
49	Experimental Evidence of Chiral Ferrimagnetism in Amorphous GdCo Films. Advanced Materials, 2018, 30, e1800199.	21.0	42
50	Prismatic 2.0 â€“ Simulation software for scanning and high resolution transmission electron microscopy (STEM and HRTEM). Micron, 2021, 151, 103141.	2.2	42
51	Surface determination through atomically resolved secondary-electron imaging. Nature Communications, 2015, 6, 7358.	12.8	41
52	Formation of Oxygen Radical Sites on MoVNbTeOx by Cooperative Electron Redistribution. Journal of the American Chemical Society, 2017, 139, 12342-12345.	13.7	41
53	Effect of composition on the structure of lithium- and manganese-rich transition metal oxides. Energy and Environmental Science, 2018, 11, 830-840.	30.8	41
54	In situ nanobeam electron diffraction strain mapping of planar slip in stainless steel. Scripta Materialia, 2018, 146, 87-90.	5.2	41

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55	Conserved Atomic Bonding Sequences and Strain Organization of Graphene Grain Boundaries. Nano Letters, 2014, 14, 7057-7063.	9.1	40
56	Segregation-Induced Nanofaceting Transition at an Asymmetric Tilt Grain Boundary in Copper. Physical Review Letters, 2018, 121, 255502.	7.8	40
57	Determination of the structural phase and octahedral rotation angle in halide perovskites. Applied Physics Letters, 2018, 112, .	3.3	38
58	Dynamics of Nanoscale Dendrite Formation in Solution Growth Revealed Through in Situ Liquid Cell Electron Microscopy. Nano Letters, 2018, 18, 6427-6433.	9.1	38
59	Towards bend-contour-free dislocation imaging via diffraction contrast STEM. Ultramicroscopy, 2018, 193, 12-23.	1.9	37
60	Out-of-plane chiral domain wall spin-structures in ultrathin in-plane magnets. Nature Communications, 2017, 8, 15302.	12.8	36
61	Imaging Unstained Synthetic Polymer Crystals and Defects on Atomic Length Scales Using Cryogenic Electron Microscopy. Macromolecules, 2018, 51, 7794-7799.	4.8	36
62	Simultaneous Identification of Low and High Atomic Number Atoms in Monolayer 2D Materials Using 4D Scanning Transmission Electron Microscopy. Nano Letters, 2019, 19, 6482-6491.	9.1	36
63	A multiple scattering algorithm for three dimensional phase contrast atomic electron tomography. Ultramicroscopy, 2020, 208, 112860.	1.9	36
64	Neutron reflectometry study of hydrogen desorption in destabilized MgAl alloy thin films. Applied Physics Letters, 2008, 92, 121917.	3.3	35
65	Momentum-resolved electronic structure at a buried interface from soft X-ray standing-wave angle-resolved photoemission. Europhysics Letters, 2013, 104, 17004.	2.0	35
66	Enhanced phase contrast transfer using ptychography combined with a pre-specimen phase plate in a scanning transmission electron microscope. Ultramicroscopy, 2016, 171, 117-125.	1.9	35
67	Local nanoscale strain mapping of a metallic glass during in situ testing. Applied Physics Letters, 2018, 112, .	3.3	35
68	Electric field control of chirality. Science Advances, 2022, 8, eabj8030.	10.3	35
69	Observation of Hydrogen-Induced Dzyaloshinskii-Moriya Interaction and Reversible Switching of Magnetic Chirality. Physical Review X, 2021, 11, .	8.9	34
70	Mechanism and dynamics of shrinking island grains in mazed bicrystal thin films of Au. Acta Materialia, 2012, 60, 7051-7063.	7.9	33
71	The 4D Camera: Very High Speed Electron Counting for 4D-STEM. Microscopy and Microanalysis, 2019, 25, 1930-1931.	0.4	33
72	Solid-state dewetting mechanisms of ultrathin Ni films revealed by combiningin situtime resolved differential reflectometry monitoring and atomic force microscopy. Physical Review B, 2010, 82, .	3.2	31

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73	Subsampled STEM-ptychography. Applied Physics Letters, 2018, 113, .	3.3	31
74	Reversible writing/deleting of magnetic skyrmions through hydrogen adsorption/desorption. Nature Communications, 2022, 13, 1350.	12.8	30
75	Structure Retrieval at Atomic Resolution in the Presence of Multiple Scattering of the Electron Probe. Physical Review Letters, 2018, 121, 266102.	7.8	29
76	The 4D Camera â€“ An 87 kHz Frame-rate Detector for Counted 4D-STEM Experiments. Microscopy and Microanalysis, 2020, 26, 1896-1897.	0.4	27
77	Correlative image learning of chemo-mechanics in phase-transforming solids. Nature Materials, 2022, 21, 547-554.	27.5	27
78	Guidelines for quantitative reconstruction of complex exit waves in HRTEM. Ultramicroscopy, 2012, 113, 88-95.	1.9	26
79	Atomic scale imaging of competing polar states in a Ruddlesdenâ€“Popper layered oxide. Nature Communications, 2016, 7, 12572.	12.8	26
80	Non-spectroscopic composition measurements of SrTiO3-La0.7Sr0.3MnO3 multilayers using scanning convergent beam electron diffraction. Applied Physics Letters, 2017, 110, .	3.3	25
81	Tensile behavior of Al1â^'Mo crystalline and amorphous thin films. Acta Materialia, 2013, 61, 1432-1443.	7.9	24
82	Probing Light Atoms at Subnanometer Resolution: Realization of Scanning Transmission Electron Microscope Holography. Nano Letters, 2018, 18, 7118-7123.	9.1	24
83	Low temperature hydrogen desorption in MgAl thin films achieved by using a nanoscale Ta/Pd bilayer catalyst. Applied Physics Letters, 2009, 94, 241901.	3.3	23
84	Nanocrystallineâ€“amorphous transitions in Alâ€“Mo thin films: Bulk and surface evolution. Acta Materialia, 2009, 57, 4296-4303.	7.9	23
85	Step Coalescence by Collective Motion at an Incommensurate Grain Boundary. Physical Review Letters, 2016, 116, 106102.	7.8	23
86	Dynamics of Symmetry-Breaking Stacking Boundaries in Bilayer MoS₂. Journal of Physical Chemistry C, 2017, 121, 22559-22566.	3.1	22
87	Interpretable and Efficient Interferometric Contrast in Scanning Transmission Electron Microscopy with a Diffraction-Grating Beam Splitter. Physical Review Applied, 2018, 10, .	3.8	20
88	py4DSTEM: Open Source Software for 4D-STEM Data Analysis. Microscopy and Microanalysis, 2019, 25, 124-125.	0.4	20
89	Hierarchically-structured large superelastic deformation in ferroelastic-ferroelectrics. Acta Materialia, 2019, 181, 501-509.	7.9	20
90	Near-concentric Fabry-PÃ©rot cavity for continuous-wave laser control of electron waves. Optics Express, 2017, 25, 14453.	3.4	19

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91	Interplay between Shortâ€•and Longâ€Ranged Forces Leading to the Formation of Ag Nanoparticle Superlattice. Small, 2019, 15, 1901966.	10.0	19
92	The Materials Research Platform: Defining the Requirements from User Stories. Matter, 2019, 1, 1433-1438.	10.0	19
93	Nanoscale oxygen defect gradients in UO2+x surfaces. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 17181-17186.	7.1	17
94	Functional Materials Under Stress: In Situ TEM Observations of Structural Evolution. Advanced Materials, 2020, 32, e1906105.	21.0	17
95	Automated Crystal Orientation Mapping in py4DSTEM using Sparse Correlation Matching. Microscopy and Microanalysis, 2022, 28, 390-403.	0.4	17
96	Tailoring the microstructure and surface morphology of metal thin films for nano-electro-mechanical systems applications. Nanotechnology, 2008, 19, 125705.	2.6	16
97	Structural Implications of Interfacial Hydrogen Bonding in Hydrated Wyoming-Montmorillonite Clay. Journal of Physical Chemistry C, 2020, 124, 8697-8705.	3.1	16
98	Deep Learning Segmentation of Complex Features in Atomic-Resolution Phase-Contrast Transmission Electron Microscopy Images. Microscopy and Microanalysis, 2021, 27, 804-814.	0.4	16
99	Simulations of faceted polycrystalline thin films: Asymptotic analysis. Acta Materialia, 2009, 57, 1327-1336.	7.9	15
100	Resolving the Morphology of Peptoid Vesicles at the 1 nm Length Scale Using Cryogenic Electron Microscopy. Journal of Physical Chemistry B, 2019, 123, 1195-1205.	2.6	15
101	Intrinsic helical twist and chirality in ultrathin tellurium nanowires. Nanoscale, 2021, 13, 9606-9614.	5.6	15
102	Ultrafast optical melting of trimer superstructure in layered 1Tâ€²-TaTe2. Communications Physics, 2021, 4, .	5.3	15
103	Transmission Electron Microscopy and Nanoindentation Study of the Weld Zone Microstructure of Diode-Laser-Joined Automotive Transformation-Induced Plasticity Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2008, 39, 593-603.	2.2	14
104	Resonance properties and microstructure of ultracompliant metallic nanoelectromechanical systems resonators synthesized from Alâ€“32at.%Mo amorphous-nanocrystalline metallic composites. Applied Physics Letters, 2008, 92, .	3.3	14
105	Automatic software correction of residual aberrations in reconstructed HRTEM exit waves of crystalline samples. Advanced Structural and Chemical Imaging, 2016, 2, 15.	4.0	14
106	Streamlined approach to mapping the magnetic induction of skyrmionic materials. Ultramicroscopy, 2017, 177, 78-83.	1.9	14
107	Synthesis and characterization of Auâ€“Ta nanocomposites for nanomechanical cantilever devices. Nanotechnology, 2007, 18, 355303.	2.6	13
108	Linear-scaling algorithm for rapid computation of inelastic transitions in the presence of multiple electron scattering. Physical Review Research, 2019, 1, .	3.6	13

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109	Atomic scale crystal field mapping of polar vortices in oxide superlattices. Nature Communications, 2021, 12, 6273.	12.8	13
110	A generalized Readâ€“Shockley model and large scale simulations for the energy and structure of graphene grain boundaries. RSC Advances, 2016, 6, 44489-44497.	3.6	12
111	Characterization of Ordering in A-Site Deficient Perovskite Ca_{1â€“x}La_{2x/3}TiO₃ Using STEM/EELS. Inorganic Chemistry, 2016, 55, 9937-9948.	4.0	12
112	Switching between Magnetic Bloch and NÃ©el Domain Walls with Anisotropy Modulations. Physical Review Letters, 2021, 127, 127203.	7.8	12
113	Simultaneous Successive Twinning Captured by Atomic Electron Tomography. ACS Nano, 2022, 16, 588-596.	14.6	12
114	Structural changes of thin MgAl films during hydrogen desorption. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 600, 301-304.	1.6	11
115	The role of self-shadowing on growth and scaling laws of faceted polycrystalline thin films. Acta Materialia, 2010, 58, 5150-5159.	7.9	11
116	Phase-contrast imaging of multiply-scattering extended objects at atomic resolution by reconstruction of the scattering matrix. Physical Review Research, 2021, 3, .	3.6	11
117	A Fast Algorithm for Scanning Transmission Electron Microscopy Imaging and 4D-STEM Diffraction Simulations. Microscopy and Microanalysis, 2021, 27, 835-848.	0.4	11
118	Nanoscale characterization of crystalline and amorphous phases in silicon oxycarbide ceramics using 4D-STEM. Materials Characterization, 2021, 181, 111512.	4.4	11
119	Study of Structure of Li- and Mn-rich Transition Metal Oxides Using 4D-STEM. Microscopy and Microanalysis, 2016, 22, 494-495.	0.4	10
120	Automated Labeling of Electron Microscopy Images Using Deep Learning. , 2018, , .		10
121	1D to 2D Transition in Tellurium Observed by 4D Electron Microscopy. Small, 2020, 16, e2005447.	10.0	10
122	A Python Based Open-source Multislice Simulation Package for Transmission Electron Microscopy. Microscopy and Microanalysis, 2020, 26, 2954-2956.	0.4	10
123	Ion complexation waves emerge at the curved interfaces of layered minerals. Nature Communications, 2022, 13, .	12.8	10
124	ScienceSearch: Enabling Search through Automatic Metadata Generation. , 2018, , .		9
125	Fast Grain Mapping with Sub-Nanometer Resolution Using 4D-STEM with Grain Classification by Principal Component Analysis and Non-Negative Matrix Factorization. Microscopy and Microanalysis, 2021, 27, 794-803.	0.4	9
126	Theory and application of the vector pair correlation function for real-space crystallographic analysis of order/disorder correlations from STEM images. APL Materials, 2021, 9, .	5.1	9

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127	Multibeam Electron Diffraction. Microscopy and Microanalysis, 2021, 27, 129-139.	0.4	9
128	Imaging atomic-scale chemistry from fused multi-modal electron microscopy. Npj Computational Materials, 2022, 8, .	8.7	9
129	Visualizing Grain Statistics in MOCVD WSe₂ through Four-Dimensional Scanning Transmission Electron Microscopy. Nano Letters, 2022, 22, 2578-2585.	9.1	9
130	Mapping 1D Confined Electromagnetic Edge States in 2D Monolayer Semiconducting MoS₂ Using 4D-STEM. ACS Nano, 2022, 16, 6657-6665.	14.6	9
131	Analytic description of competitive grain growth. Physical Review E, 2010, 81, 011601.	2.1	8
132	Structure and phase transitions at the interface between Î±-Al₂O₃and Pt. Journal of Physics Condensed Matter, 2013, 25, 232202.	1.8	8
133	Real time imaging of two-dimensional iron oxide spherulite nanostructure formation. Nano Research, 2019, 12, 2889-2893.	10.4	8
134	Atomic structures determined from digitally defined nanocrystalline regions. IUCrJ, 2020, 7, 490-499.	2.2	8
135	Demonstration of Hexagonal Phase Silicon Carbide Nanowire Arrays with Vertical Alignment. Crystal Growth and Design, 2016, 16, 2887-2892.	3.0	7
136	Low temperature solid-state wetting and formation of nanowelds in silver nanowires. Nanotechnology, 2017, 28, 385701.	2.6	7
137	The effect of film thickness on Curie temperature distribution and magnetization reversal mechanism for granular L1₀FePt films. Journal Physics D: Applied Physics, 2017, 50, 285003.	2.8	7
138	Nanobeam Scanning Diffraction for Orientation Mapping of Polymers. Microscopy and Microanalysis, 2017, 23, 1782-1783.	0.4	7
139	Advanced Phase Reconstruction Methods Enabled by Four-Dimensional Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 2019, 25, 10-11.	0.4	7
140	Cryogenic 4D-STEM analysis of an amorphous-crystalline polymer blend: Combined nanocrystalline and amorphous phase mapping. IScience, 2022, 25, 103882.	4.1	7
141	All-metal AFM probes fabricated from microstructurally tailored Cuâ€“Hf thin films. Nanotechnology, 2009, 20, 345703.	2.6	6
142	A systematic neutron reflectometry study on hydrogen absorption in thin Mg₁₋_xAl_x alloy films Special issue on Neutron Scattering in Canada.. Canadian Journal of Physics, 2010, 88, 723-728.	1.1	6
143	Atomic structure characterization of an incommensurate grain boundary. Acta Materialia, 2013, 61, 5078-5086.	7.9	6
144	HAADF imaging of the omega (Ï‰) phase in a gum metal-related alloy. Philosophical Magazine, 2014, 94, 2900-2912.	1.6	6

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145	Multiscale analysis of nanoindentation-induced defect structures in gum metal. Acta Materialia, 2018, 151, 334-346.	7.9	6
146	A Next Generation Electron Microscopy Detector Aimed at Enabling New Scanning Diffraction Techniques and Online Data Reconstruction. Microscopy and Microanalysis, 2018, 24, 166-167.	0.4	6
147	Tilted fluctuation electron microscopy. Applied Physics Letters, 2020, 117, .	3.3	6
148	Percolation of Ion-Irradiation-Induced Disorder in Complex Oxide Interfaces. Nano Letters, 2021, 21, 5353-5359.	9.1	6
149	Seeing structural evolution of organic molecular nano-crystallites using 4D scanning confocal electron diffractionÂ(4D-SCED). Nature Communications, 2022, 13, .	12.8	6
150	A Three-Dimensional Reconstruction Algorithm for Scanning Transmission Electron Microscopy Data from a Single Sample Orientation. Microscopy and Microanalysis, 2022, 28, 1632-1640.	0.4	6
151	Scattering Matrix Determination in Crystalline Materials from 4D Scanning Transmission Electron Microscopy at a Single Defocus Value. Microscopy and Microanalysis, 2021, 27, 744-757.	0.4	5
152	High Resolution Observations of Interface Dynamics Using a Direct Electron Detection Camera. Microscopy and Microanalysis, 2014, 20, 1594-1595.	0.4	4
153	Mapping Cation Disorder in Irradiated Gd₂Ti₂O₇ Pyrochlore by 4D-STEM. Microscopy and Microanalysis, 2019, 25, 1560-1561.	0.4	4
154	Hybrid nanocapsules for in situ TEM imaging of gas evolution reactions in confined liquids. Nanoscale, 2020, 12, 18606-18615.	5.6	4
155	Local Lattice Deformation of Tellurene Grain Boundaries by Four-Dimensional Electron Microscopy. Journal of Physical Chemistry C, 2021, 125, 3396-3405.	3.1	4
156	Correlative analysis of structure and chemistry of LixFePO4 platelets using 4D-STEM and X-ray ptychography. Materials Today, 2022, 52, 102-111.	14.2	4
157	Towards Identification of Oxygen Point Defects by Means of Position Averaged CBED. Microscopy and Microanalysis, 2015, 21, 1097-1098.	0.4	3
158	Analysis of grain boundary dynamics using event detection and cumulative averaging. Ultramicroscopy, 2015, 151, 78-84.	1.9	3
159	An Autonomous Microscopy Workflow for Structure Determination from Atomic-Resolution Images. Microscopy and Microanalysis, 2018, 24, 510-511.	0.4	3
160	Direct Observation of SRO effect of Ti-6Al Alloy Using Energy-filtered TEM and Scanning Nanobeam Electron Diffraction. Microscopy and Microanalysis, 2018, 24, 210-211.	0.4	3
161	Improved 4D-STEM Strain Mapping Precision Using Patterned Probes. Microscopy and Microanalysis, 2019, 25, 1958-1959.	0.4	3
162	Direct atomic imaging of antiphase boundaries and orthotwins in orientation-patterned GaAs. Applied Physics Letters, 2013, 102, 081905.	3.3	2

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163	Multimodal Acquisition of Properties and Structure with Transmission Electron Reciprocal-space (MAPSTER) Microscopy. Microscopy and Microanalysis, 2016, 22, 1412-1413.	0.4	2
164	Reducing Electron Beam Damage with Multipass Transmission Electron Microscopy. Microscopy and Microanalysis, 2017, 23, 1794-1795.	0.4	2
165	The Merits of In situ Environmental STEM for the Study of Complex Oxide Catalysts at Work. Microscopy and Microanalysis, 2018, 24, 238-239.	0.4	2
166	Atomic Resolution Probing of Phase Transformations and Domain Evolution During Large Superelastic Deformation in Ferroelectrics with in situ TEM. Microscopy and Microanalysis, 2019, 25, 1850-1851.	0.4	2
167	4DSTEM of Beam-sensitive Materials: Optimizing SNR and Improving Spatial Resolution. Microscopy and Microanalysis, 2020, 26, 1734-1735.	0.4	2
168	Imaging Short-range Order and Extracting 3-D Strain Tensor Using Energy-filtered 4D-STEM Techniques. Microscopy and Microanalysis, 2020, 26, 936-938.	0.4	2
169	4D >Crystal: Deep Learning Crystallographic Information From Electron Diffraction Images. Microscopy and Microanalysis, 2021, 27, 2774-2776.	0.4	2
170	Extracting Local Crystallographic Structure Using 4D-STEM Datasets. Acta Crystallographica Section A: Foundations and Advances, 2014, 70, C1455-C1455.	0.1	1
171	Revealing Point Defects in a Large-Scale Scanning Diffraction Dataset. Microscopy and Microanalysis, 2016, 22, 470-471.	0.4	1
172	Phase Contrast Imaging of Weakly-Scattering Samples with Matched Illumination and Detector Interferometryâ€“Scanning Transmission Electron Microscopy (MIDIâ€“STEM). Microscopy and Microanalysis, 2016, 22, 460-461.	0.4	1
173	High Resolution Electron Microscopy of Grain Boundary Motion During Island Grain Shrinkage. Microscopy and Microanalysis, 2016, 22, 1224-1225.	0.4	1
174	Computational Methods for Large Scale Scanning Transmission Electron Microscopy (STEM) Experiments and Simulations. Microscopy and Microanalysis, 2017, 23, 162-163.	0.4	1
175	Linear and Nonlinear Reconstruction Algorithms for Atomic-Resolution Tomography Using Phase Contrast Electron Microscopy. Microscopy and Microanalysis, 2018, 24, 110-111.	0.4	1
176	In situ Nanobeam Electron Diffraction of Bulk Metallic Glasses. Microscopy and Microanalysis, 2018, 24, 206-207.	0.4	1
177	Rapid Simulation of Elemental Maps in Core-Loss Electron Energy Loss Spectroscopy. Microscopy and Microanalysis, 2019, 25, 574-575.	0.4	1
178	High Throughput Grain Mapping with Sub-Nanometer Resolution by 4D-STEM. Microscopy and Microanalysis, 2019, 25, 1960-1961.	0.4	1
179	Relationship between mechanical strain and chemical composition in LiFePO4 via 4D-scanning transmission electron microscopy and scanning transmission X-ray microscopy. Microscopy and Microanalysis, 2019, 25, 2068-2069.	0.4	1
180	Detailed Investigation of Silicon Nitride Phase Plates Prepared by Focused Ion Beam Milling. Microscopy and Microanalysis, 2019, 25, 900-901.	0.4	1

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