Peter D Nellist

List of Publications by Year
in descending order

98 papers	5,062 citations	87888 38 h-index	88630 70 g-index
108 all docs	108 docs citations	108 times ranked	3852 citing authors

#	Article	IF	Citations
1	Direct Sub-Angstrom Imaging of a Crystal Lattice. Science, 2004, 305, 1741-1741.	12.6	463
2	Spectroscopic Imaging of Single Atoms Within a Bulk Solid. Physical Review Letters, 2004, 92, 095502.	7.8	299
3	Direct Imaging of the Atomic Configuration of Ultradispersed Catalysts. Science, 1996, 274, 413-415.	12.6	291
4	Smart Alignâ€"a new tool for robust non-rigid registration of scanning microscope data. Advanced Structural and Chemical Imaging, 2015, 1, .	4.0	290
5	Resolution beyond the 'information limit' in transmission electron microscopy. Nature, 1995, 374, 630-632.	27.8	193
6	Efficient phase contrast imaging in STEM using a pixelated detector. Part 1: Experimental demonstration at atomic resolution. Ultramicroscopy, 2015, 151, 160-167.	1.9	192
7	Simultaneous atomic-resolution electron ptychography and Z-contrast imaging of light and heavy elements in complex nanostructures. Nature Communications, 2016, 7, 12532.	12.8	191
8	Atomic-scale microstructure of metal halide perovskite. Science, 2020, 370, .	12.6	183
9	Towards sub-0.5Ã... electron beams. Ultramicroscopy, 2003, 96, 229-237.	1.9	159
10	Subangstrom Resolution by Underfocused Incoherent Transmission Electron Microscopy. Physical Review Letters, 1998, 81, 4156-4159.	7.8	157
11	Progress in aberration-corrected scanning transmission electron microscopy. Microscopy (Oxford,) Tj ETQq1 1 0.784314 rgBT /Overlo	1.5	156
12	Probe integrated scattering cross sections in the analysis of atomic resolution HAADF STEM images. Ultramicroscopy, 2013, 133, 109-119.	1.9	132
13	Efficient phase contrast imaging in STEM using a pixelated detector. Part II: Optimisation of imaging conditions. Ultramicroscopy, 2015, 151, 232-239.	1.9	128
14	Rapid Estimation of Catalyst Nanoparticle Morphology and Atomic-Coordination by High-Resolution Z-Contrast Electron Microscopy. Nano Letters, 2014, 14, 6336-6341.	9.1	103
15	Accurate structure determination from image reconstruction in ADF STEM. Journal of Microscopy, 1998, 190, 159-170.	1.8	95
16	Confocal operation of a transmission electron microscope with two aberration correctors. Applied Physics Letters, 2006, 89, 124105.	3.3	92
17	Electron ptychographic microscopy for three-dimensional imaging. Nature Communications, 2017, 8, 163.	12.8	89
18	HAADF-STEM imaging with sub-angstrom probes: a full Bloch wave analysis. Journal of Electron Microscopy, 2004, 53, 257-266.	0.9	73

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19	Low-dose phase retrieval of biological specimens using cryo-electron ptychography. Nature Communications, 2020, 11, 2773.	12.8	72
20	High Angle Dark Field STEM for Advanced Materials. Journal of Electron Microscopy, 1996, 45, 36-43.	0.9	71
21	Three-dimensional imaging by optical sectioning in the aberration-corrected scanning transmission electron microscope. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 3825-3844.	3.4	67
22	Electron ptychographic phase imaging of light elements in crystalline materials using Wigner distribution deconvolution. Ultramicroscopy, 2017, 180, 173-179.	1.9	67
23	Three-dimensional imaging in double aberration-corrected scanning confocal electron microscopy, Part I:. Ultramicroscopy, 2008, 108, 1558-1566.	1.9	60
24	Imaging screw dislocations at atomic resolution by aberration-corrected electron optical sectioning. Nature Communications, 2015, 6, 7266.	12.8	60
25	A Bloch wave analysis of optical sectioning in aberration-corrected STEM. Ultramicroscopy, 2007, 107, 626-634.	1.9	58
26	Low-Dose Aberration-Free Imaging of Li-Rich Cathode Materials at Various States of Charge Using Electron Ptychography. Nano Letters, 2018, 18, 6850-6855.	9.1	53
27	Three-dimensional imaging in double aberration-corrected scanning confocal electron microscopy, Part II: Inelastic scattering. Ultramicroscopy, 2008, 108, 1567-1578.	1.9	47
28	Dose limited reliability of quantitative annular dark field scanning transmission electron microscopy for nano-particle atom-counting. Ultramicroscopy, 2015, 151, 56-61.	1.9	47
29	Predicting the Oxygen-Binding Properties of Platinum Nanoparticle Ensembles by Combining High-Precision Electron Microscopy and Density Functional Theory. Nano Letters, 2017, 17, 4003-4012.	9.1	47
30	Imaging Modes for Scanning Confocal Electron Microscopy in a Double Aberration-Corrected Transmission Electron Microscope. Microscopy and Microanalysis, 2008, 14, 82-88.	0.4	46
31	Nanoscale Energy-Filtered Scanning Confocal Electron Microscopy Using a Double-Aberration-Corrected Transmission Electron Microscope. Physical Review Letters, 2010, 104, 200801.	7.8	46
32	The development of a 200kV monochromated field emission electron source. Ultramicroscopy, 2014, 140, 37-43.	1.9	46
33	Optimising multi-frame ADF-STEM for high-precision atomic-resolution strain mapping. Ultramicroscopy, 2017, 179, 57-62.	1.9	46
34	Unscrambling Mixed Elements using High Angle Annular Dark Field Scanning Transmission Electron Microscopy. Physical Review Letters, 2016, 116, 246101.	7.8	45
35	Three-dimensional atomic models from a single projection using Z-contrast imaging: verification by electron tomography and opportunities. Nanoscale, 2017, 9, 8791-8798.	5.6	44
36	Interstitial Boron Atoms in the Palladium Lattice of an Industrial Type of Nanocatalyst: Properties and Structural Modifications. Journal of the American Chemical Society, 2019, 141, 19616-19624.	13.7	43

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37	Aberration measurement using the Ronchigram contrast transfer function. Ultramicroscopy, 2010, 110, 891-898.	1.9	42
38	Managing dose-, damage- and data-rates in multi-frame spectrum-imaging. Microscopy (Oxford,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 7	1.5	42
39	High dose efficiency atomic resolution imaging via electron ptychography. Ultramicroscopy, 2019, 196, 131-135.	1.9	40
40	Quantitative Energy-Dispersive X-Ray Analysis of Catalyst Nanoparticles Using a Partial Cross Section Approach. Microscopy and Microanalysis, 2016, 22, 71-81.	0.4	36
41	The Principles of STEM Imaging. , 2011, , 91-115.		35
42	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
43	Phase reconstruction using fast binary 4D STEM data. Applied Physics Letters, 2020, 116, .	3.3	34
44	Subsampled STEM-ptychography. Applied Physics Letters, 2018, 113, .	3.3	31
45	Optimal ADF STEM imaging parameters for tilt-robust image quantification. Ultramicroscopy, 2015, 156, 1-8.	1.9	30
46	Hybrid statistics-simulations based method for atom-counting from ADF STEM images. Ultramicroscopy, 2017, 177, 69-77.	1.9	30
47	Single Atom Detection from Low Contrast-to-Noise Ratio Electron Microscopy Images. Physical Review Letters, 2018, 121, 056101.	7.8	30
48	Contrast transfer and noise considerations in focused-probe electron ptychography. Ultramicroscopy, 2021, 221, 113189.	1.9	28
49	Atomic scale dynamics of a solid state chemical reaction directly determined by annular dark-field electron microscopy. Scientific Reports, 2014, 4, 7555.	3.3	26
50	Quantitative STEM normalisation: The importance of the electron flux. Ultramicroscopy, 2015, 159, 46-58.	1.9	26
51	Direct Observation of Depth-Dependent Atomic Displacements Associated with Dislocations in Gallium Nitride. Physical Review Letters, 2014, 113, 135503.	7.8	25
52	Optical Sectioning and Confocal Imaging and Analysis in the Transmission Electron Microscope. Annual Review of Materials Research, 2012, 42, 125-143.	9.3	21
53	Measuring Dynamic Structural Changes of Nanoparticles at the Atomic Scale Using Scanning Transmission Electron Microscopy. Physical Review Letters, 2020, 124, 106105.	7.8	20
54	Determining EDS and EELS partial cross-sections from multiple calibration standards to accurately quantify bi-metallic nanoparticles using STEM. Micron, 2018, 113, 69-82.	2.2	19

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55	Bright-field scanning confocal electron microscopy using a double aberration-corrected transmission electron microscope. Ultramicroscopy, 2011, 111, 877-886.	1.9	18
56	High-Resolution TEM and the Application of Direct and Indirect Aberration Correction. Microscopy and Microanalysis, 2008, 14, 60-67.	0.4	15
57	Strain effects in coreâ€“shell PtCo nanoparticles: a comparison of experimental observations and computational modelling. Physical Chemistry Chemical Physics, 2020, 22, 24784-24795.	2.8	15
58	Increasing Spatial Fidelity and SNR of 4D-STEM Using Multi-Frame Data Fusion. Microscopy and Microanalysis, 2022, 28, 1417-1427.	0.4	15
59	Three-dimensional elemental mapping of hollow Fe2O3@SiO2 mesoporous spheres using scanning confocal electron microscopy. Applied Physics Letters, 2012, 100, .	3.3	14
60	Control of Knock-On Damage for 3D Atomic Scale Quantification of Nanostructures: Making Every Electron Count in Scanning Transmission Electron Microscopy. Physical Review Letters, 2019, 122, 066101.	7.8	14
61	Direct imaging of oxygen shifts associated with the oxygen redox of Li-rich layered oxides. Joule, 2022, 6, 1049-1065.	24.0	13
62	Three-dimensional analysis of nanoparticles on carbon support using aberration-corrected scanning confocal electron microscopy. Applied Physics Letters, 2012, 101, .	3.3	12
63	Use of a hybrid silicon pixel (Medipix) detector as a STEM detector. Microscopy and Microanalysis, 2015, 21, 1595-1596.	0.4	12
64	The atomic lensing model: New opportunities for atom-by-atom metrology of heterogeneous nanomaterials. Ultramicroscopy, 2019, 203, 155-162.	1.9	12
65	Compositional quantification of PtCo acid-leached fuel cell catalysts using EDX partial cross sections. Materials Science and Technology, 2016, 32, 248-253.	1.6	11
66	Electron-optical sectioning for three-dimensional imaging of crystal defect structures. Materials Science in Semiconductor Processing, 2017, 65, 18-23.	4.0	11
67	Thickness dependence of scattering cross-sections in quantitative scanning transmission electron microscopy. Ultramicroscopy, 2018, 187, 84-92.	1.9	11
68	Contrast in atomically resolved EF-SCEM imaging. Ultramicroscopy, 2013, 134, 185-192.	1.9	10
69	Atomically Resolved Scanning Confocal Electron Microscopy Using a Double Aberration-corrected Transmission Electron Microscope. Microscopy and Microanalysis, 2014, 20, 376-377.	0.4	10
70	Quantifying a Heterogeneous Ru Catalyst on Carbon Black Using ADF STEM. Particle and Particle Systems Characterization, 2016, 33, 438-444.	2.3	9
71	Scanning Transmission Electron Microscopy. Springer Handbooks, 2019, , 49-99.	0.6	9
72	Selection rules for Bloch wave scattering for HREM imaging of imperfect crystals along symmetry axes. Philosophical Magazine, 2008, 88, 135-143.	1.6	8

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73	3D elemental mapping with nanometer scale depth resolution via electron optical sectioning. Ultramicroscopy, 2017, 174, 27-34.	1.9	7
74	Threeâ€dimensional optical transfer functions in the aberrationâ€corrected scanning transmission electron microscope. Journal of Microscopy, 2014, 254, 47-64.	1.8	5
75	High-precision atomic-scale strain mapping of nanoparticles from STEM images. Ultramicroscopy, 2022, 239, 113561.	1.9	5
76	Quantification of ADF STEM images of molybdenum chalcogenide nanowires. Journal of Physics: Conference Series, 2006, 26, 280-283.	0.4	3
77	Three-dimensional observation of SiO2 hollow spheres with a double-shell structure using aberration-corrected scanning confocal electron microscopy. Microscopy (Oxford, England), 2012, 61, 159-169.	1.5	3
78	Observation of metal nanoparticles at atomic resolution in Ptâ€based cancer chemotherapeutics. Journal of Microscopy, 2018, 270, 92-97.	1.8	3
79	Three-dimensional Electron Ptychography of Catalyst Nanoparticles using Combined HAADF STEM and Atom Counting. Microscopy and Microanalysis, 2019, 25, 8-9.	0.4	3
80	Three-dimensional imaging using aberration-corrected scanning transmission and confocal electron microscopy. Journal of Physics: Conference Series, 2008, 126, 012036.	0.4	2
81	Observation of depth-dependent atomic displacements related to dislocations in GaN by optical sectioning in the STEM. Journal of Physics: Conference Series, 2014, 522, 012048.	0.4	2
82	Chromatic Confocal Electron Microscopy with a Finite Pinhole Size. Journal of Physics: Conference Series, 2012, 371, 012002.	0.4	1
83	Getting the Best from an Imperfect Detector - an Alternative Normalisation Procedure for Quantitative HAADF STEM. Microscopy and Microanalysis, 2014, 20, 126-127.	0.4	1
84	3D Atomic Scale Quantification of Nanostructures and their Dynamics Using Model-based STEM. Microscopy and Microanalysis, 2020, 26, 2606-2608.	0.4	1
85	Ptychographic Single Particle Analysis for Biological Science. Microscopy and Microanalysis, 2021, 27, 190-192.	0.4	1
86	Direct Imaging of Oxygen Sub-lattice Deformation in Li-rich Cathode Material Using Electron Ptychography. Microscopy and Microanalysis, 2021, 27, 2724-2726.	0.4	1
87	Combining ADF-EDX scattering cross-sections for elemental quantification of nanostructures. Microscopy and Microanalysis, 2021, 27, 600-602.	0.4	1
88	Three-Dimensional Crystal Structure Mapping by Diffractive Scanning Confocal Electron Microscopy (SCEM). Journal of Physics: Conference Series, 2012, 371, 012003.	0.4	0
89	Quantification of a Heterogeneous Ruthenium Catalyst on Carbon-black using ADF Imaging. Journal of Physics: Conference Series, 2015, 644, 012035.	0.4	0
90	Quantitative annular dark field scanning transmission electron microscopy for nanoparticle atom-counting: What are the limits?. Journal of Physics: Conference Series, 2015, 644, 012034.	0.4	0

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91	Quantification of ADF STEM Image Data for Nanoparticle Structure and Strain Measurements. Microscopy and Microanalysis, 2016, 22, 896-897.	0.4	0
92	Quantitative STEM of Catalyst Nanoparticles using ADF Imaging with Simultaneous EDS and EELS Spectroscopy.. Microscopy and Microanalysis, 2017, 23, 1888-1889.	0.4	0
93	Quantification of 3D Atomic Structures and Their Dynamics by Atom-Counting from an ADF STEM Image. Microscopy and Microanalysis, 2019, 25, 1808-1809.	0.4	0
94	Intracellular Elemental Mapping using Simultaneous EELS and EDS: A Combined Approach to Quantifying Na, K and Ca. Microscopy and Microanalysis, 2019, 25, 1078-1079.	0.4	0
95	Microscopy on Drugs: Characterization and Quantification of Pt-based Pharmaceuticals using the STEM.. Microscopy and Microanalysis, 2019, 25, 716-717.	0.4	0
96	Low Dose Electron Ptychography for Cryo-biological Imaging. Microscopy and Microanalysis, 2020, 26, 1488-1490.	0.4	0
97	The atomic-scale microstructure of metal halide perovskite elucidated via low-dose electron microscopy. Microscopy and Microanalysis, 2021, 27, 966-968.	0.4	0
98	Direct Visualization of Substitutional Li Doping in Supported Pt Nanoparticles and Their Ultraâ€selective Catalytic Hydrogenation Performance. Chemistry - A European Journal, 2021, 27, 12041-12046.	3.3	0