Ondrej Dyck

List of Publications by Year
in descending order

82	2,350	236925 25	214800 47
papers	citations	h-index	g-index
84	84	84	3967
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Deep Learning of Atomically Resolved Scanning Transmission Electron Microscopy Images: Chemical Identification and Tracking Local Transformations. ACS Nano, 2017, 11, 12742-12752.	14.6	282
2	Perovskite Solar Cells with Near 100% Internal Quantum Efficiency Based on Large Single Crystalline Grains and Vertical Bulk Heterojunctions. Journal of the American Chemical Society, 2015, 137, 9210-9213.	13.7	246
3	Synthesis of Millimeter-Size Hexagon-Shaped Graphene Single Crystals on Resolidified Copper. ACS Nano, 2013, 7, 8924-8931.	14.6	178
4	Universal Formation of Compositionally Graded Bulk Heterojunction for Efficiency Enhancement in Organic Photovoltaics. Advanced Materials, 2014, 26, 3068-3075.	21.0	139
5	Placing single atoms in graphene with a scanning transmission electron microscope. Applied Physics Letters, 2017, 111, .	3.3	119
6	Deep learning analysis of defect and phase evolution during electron beam-induced transformations in WS2. Npj Computational Materials, 2019, 5, .	8.7	113
7	Building Structures Atom by Atom via Electron Beam Manipulation. Small, 2018, 14, e1801771.	10.0	81
8	3D Analysis of Fuel Cell Electrocatalyst Degradation on Alternate Carbon Supports. ACS Applied Materials & Interfaces, 2017, 9, 29839-29848.	8.0	76
9	Atom-by-atom fabrication with electron beams. Nature Reviews Materials, 2019, 4, 497-507.	48.7	73
10	Building and exploring libraries of atomic defects in graphene: Scanning transmission electron and scanning tunneling microscopy study. Science Advances, 2019, 5, eaaw8989.	10.3	70
11	Guided crystallization of P3HT in ternary blend solar cell based on P3HT:PCPDTBT:PCBM. Energy and Environmental Science, 2014, 7, 3782-3790.	30.8	60
12	Correlating high power conversion efficiency of PTB7:PC₇₁BM inverted organic solar cells with nanoscale structures. Nanoscale, 2015, 7, 15576-15583.	5.6	54
13	Observation of Nanoscale Morphological and Structural Degradation in Perovskite Solar Cells by in Situ TEM. ACS Applied Materials & Interfaces, 2016, 8, 32333-32340.	8.0	54
14	Electronâ€Beamâ€Related Studies of Halide Perovskites: Challenges and Opportunities. Advanced Energy Materials, 2020, 10, 1903191.	19.5	53
15	Controllable Growth of Perovskite Films by Roomâ€Temperature Air Exposure for Efficient Planar Heterojunction Photovoltaic Cells. Angewandte Chemie - International Edition, 2015, 54, 14862-14865.	13.8	41
16	Exploring order parameters and dynamic processes in disordered systems via variational autoencoders. Science Advances, 2021, 7, .	10.3	38
17	Doping transition-metal atoms in graphene for atomic-scale tailoring of electronic, magnetic, and quantum topological properties. Carbon, 2021, 173, 205-214.	10.3	35
18	Supportless, Bismuth-Modified Palladium Nanotubes with Improved Activity and Stability for Formic Acid Oxidation. ACS Catalysis, 2015, 5, 5154-5163.	11.2	34

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19	Compressed Sensing of Scanning Transmission Electron Microscopy (STEM) With Nonrectangular Scans. Microscopy and Microanalysis, 2018, 24, 623-633.	0.4	34
20	Electron-beam introduction of heteroatomic Ptâ€“Si structures in graphene. Carbon, 2020, 161, 750-757.	10.3	34
21	Mitigating e-beam-induced hydrocarbon deposition on graphene forâ€‰atomic-scale scanning transmission electron microscopy studies. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2018, 36, .	1.2	32
22	Toward Electrochemical Studies on the Nanometer and Atomic Scales: Progress, Challenges, and Opportunities. ACS Nano, 2019, 13, 9735-9780.	14.6	32
23	Mapping mesoscopic phase evolution during E-beam induced transformations via deep learning of atomically resolved images. Npj Computational Materials, 2018, 4, .	8.7	31
24	Accurate Quantification of Si/SiGe Interface Profiles via Atom Probe Tomography. Advanced Materials Interfaces, 2017, 4, 1700622.	3.7	30
25	Ensemble learning-iterative training machine learning for uncertainty quantification and automated experiment in atom-resolved microscopy. Npj Computational Materials, 2021, 7, .	8.7	26
26	Atomic Mechanisms for the Si Atom Dynamics in Graphene: Chemical Transformations at the Edge and in the Bulk. Advanced Functional Materials, 2019, 29, 1904480.	14.9	25
27	Lab on a beamâ€"Big data and artificial intelligence in scanning transmission electron microscopy. MRS Bulletin, 2019, 44, 565-575.	3.5	24
28	Doping of Cr in Graphene Using Electron Beam Manipulation for Functional Defect Engineering. ACS Applied Nano Materials, 2020, 3, 10855-10863.	5.0	24
29	Automated Experiment in 4D-STEM: Exploring Emergent Physics and Structural Behaviors. ACS Nano, 2022, 16, 7605-7614.	14.6	23
30	E-beam manipulation of Si atoms on graphene edges with an aberration-corrected scanning transmission electron microscope. Nano Research, 2018, 11, 6217-6226.	10.4	21
31	The impact of selective solvents on the evolution of structure and function in solvent annealed organic photovoltaics. RSC Advances, 2014, 4, 27931-27938.	3.6	18
32	Multi-purposed Ar gas cluster ion beam processing for graphene engineering. Carbon, 2018, 131, 142-148.	10.3	18
33	Graphene milling dynamics during helium ion beam irradiation. Carbon, 2018, 138, 277-282.	10.3	18
34	Segregated Pt on Pd nanotubes for enhanced oxygen reduction activity in alkaline electrolyte. Chemical Communications, 2015, 51, 16633-16636.	4.1	17
35	A self-driving microscope and the Atomic Forge. MRS Bulletin, 2019, 44, 669-670.	3.5	17
36	Quantitative Phase Fraction Detection in Organic Photovoltaic Materials through EELS Imaging. Polymers, 2015, 7, 2446-2460.	4.5	16

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37	Probing atomic-scale symmetry breaking by rotationally invariant machine learning of multidimensional electron scattering. Npj Computational Materials, 2021, 7, .	8.7	15
38	Variable voltage electron microscopy: Toward atom-by-atom fabrication in 2D materials. Ultramicroscopy, 2020, 211, 112949.	1.9	14
39	Towards automating structural discovery in scanning transmission electron microscopy [*]. Machine Learning: Science and Technology, 2022, 3, 015024.	5.0	11
40	Pulsed Laser-Assisted Helium Ion Nanomachining of Monolayer Grapheneâ€”Direct-Write Kirigami Patterns. Nanomaterials, 2019, 9, 1394.	4.1	10
41	Tracking atomic structure evolution during directed electron beam induced Si-atom motion in graphene via deep machine learning. Nanotechnology, 2021, 32, 035703.	2.6	10
42	Bridging microscopy with molecular dynamics and quantum simulations: an atomAI based pipeline. Npj Computational Materials, 2022, 8, .	8.7	10
43	Statistical learning of governing equations of dynamics from in-situ electron microscopy imaging data. Materials and Design, 2020, 195, 108973.	7.0	8
44	Enhanced absorption in ultrathin Si by NiSi₂ nanoparticles. Nanomaterials and Energy, 2013, 2, 11-19.	0.2	7
45	Measuring the areal density of nanomaterials by electron energy-loss spectroscopy. Ultramicroscopy, 2019, 196, 154-160.	1.9	7
46	Mapping Conductance and Switching Behavior of Graphene Devices In Situ. Small Methods, 2022, 6, e2101245.	8.6	7
47	Exciton emission from hybrid organic and plasmonic polytype InP nanowire heterostructures. Materials Research Express, 2015, 2, 045001.	1.6	6
48	Deep Learning for Atomically Resolved Imaging. Microscopy and Microanalysis, 2018, 24, 60-61.	0.4	5
49	Deep Convolutional Neural Networks for Symmetry Detection. Microscopy and Microanalysis, 2018, 24, 112-113.	0.4	5
50	Probing potential energy landscapes via electron-beam-induced single atom dynamics. Acta Materialia, 2021, 203, 116508.	7.9	5
51	Imaging Secondary Electron Emission from a Single Atomic Layer. Small Methods, 2021, 5, 2000950.	8.6	5
52	Controlling hydrocarbon transport and electron beam induced deposition on single layer graphene: Toward atomic scale synthesis in the scanning transmission electron microscope. Nano Select, 0, , .	3.7	5
53	Direct matter disassembly via electron beam control: electron-beam-mediated catalytic etching of graphene by nanoparticles. Nanotechnology, 2020, 31, 245303.	2.6	4
54	Reconstruction of effective potential from statistical analysis of dynamic trajectories. AIP Advances, 2020, 10, .	1.3	4

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55	DC electric field induced phase array self-assembly of Au nanoparticles. Nanotechnology, 2014, 25, 465301.	2.6	3
56	Two-level structural sparsity regularization for identifying lattices and defects in noisy images. Annals of Applied Statistics, 2018, 12, .	1.1	3
57	Compressive Sensing on Diverse STEM Scans: Real-time Feedback, Low-dose and Dynamic Range. Microscopy and Microanalysis, 2019, 25, 1688-1689.	0.4	3
58	Materials and Devices with Probes and Beams: Down to the Atomic Level and Back Up. Advanced Functional Materials, 2019, 29, 1908267.	14.9	3
59	Contrast Mechanisms in Secondary Electron e-Beam-Induced Current (SEEBIC) Imaging. Microscopy and Microanalysis, 0, , 1-17.	0.4	3
60	Structure retrieval from four-dimensional scanning transmission electron microscopy: Statistical analysis of potential pitfalls in high-dimensional data. Physical Review E, 2019, 100, 023308.	2.1	2
61	Reconstruction of the interatomic forces from dynamic scanning transmission electron microscopy data. Journal of Applied Physics, 2020, 127, 224301.	2.5	2
62	Graphene Defect Editing, Deposition, and Growth via E-Beam-Induced Organic Reactions in Aberration Corrected STEM. Microscopy and Microanalysis, 2018, 24, 1994-1995.	0.4	1
63	Imaging Conductivity in a Single Atomic Layer. Microscopy and Microanalysis, 2020, 26, 1704-1705.	0.4	1
64	Addendum: Zhang, C., et al. Pulsed Laser-Assisted Helium Ion Nanomachining of Monolayer Grapheneâ€"Direct-Write Kirigami Patterns. Nanomaterials 2019, 9, 1394. Nanomaterials, 2020, 10, 273.	4.1	1
65	Nanocrystalline Solar Cell Materials Characterization. Microscopy and Microanalysis, 2009, 15, 1430-1431.	0.4	0
66	Absorption enhancement by Ni-silicide nanostructures embedded in ultra-thin Si films. Microscopy and Microanalysis, 2012, 18, 1862-1863.	0.4	0
67	Electron Energy-Loss Spectroscopic Imaging for Phase Detection in Organic Photovoltaics. Microscopy and Microanalysis, 2014, 20, 538-539.	0.4	0
68	Quantification of Atomic Arrangements at Heterostructure Interfaces. Microscopy and Microanalysis, 2016, 22, 1502-1503.	0.4	0
69	Considerations and Challenges with Characterizing Si/SiGe Interfaces. Microscopy and Microanalysis, 2016, 22, 1450-1451.	0.4	0
70	Leveraging Single Atom Dynamics to Measure the Electron-Beam-Induced Force and Atomic Potentials. Microscopy and Microanalysis, 2018, 24, 96-97.	0.4	0
71	Atom-by-Atom Assembly in Aberration Corrected STEM and the Role of Chemistry at the Surface of Graphene. Microscopy and Microanalysis, 2018, 24, 326-327.	0.4	0
72	Atomic Manipulation on a Scanning Transmission Electron Microscope Platform using Real-Time Image Processing and Feedback. Microscopy and Microanalysis, 2018, 24, 534-535.	0.4	0

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73	Automated Atom-by-Atom Assembly of Structures in Graphene: The Rise of STEM for Atomic Scale Control. Microscopy and Microanalysis, 2018, 24, 1594-1595.	0.4	0
74	Machine Learning for the Dynamic Scanning Transmission Electron Microscopy Experiment on Solid State Transformations. Microscopy and Microanalysis, 2018, 24, 1600-1601.	0.4	0
75	From Control of the Electron Beam to Control of Single Atoms. Microscopy and Microanalysis, 2019, 25, 1678-1679.	0.4	0
76	Unsupervised Machine Learning to Distill Structural-Property Insights from 4D-STEM. Microscopy and Microanalysis, 2019, 25, 12-13.	0.4	0
77	Towards Atomic Scale Quantum Structure Fabrication in 2D Materials. Microscopy and Microanalysis, 2019, 25, 940-941.	0.4	0
78	Super-Graphene: The Role of Temperature on Radiation Resistance. Microscopy and Microanalysis, 2020, 26, 2360-2361.	0.4	0
79	Accurately Imaging, Tracking and Moving Single Atoms. Microscopy and Microanalysis, 2020, 26, 2556-2557.	0.4	0
80	van der Waals Epitaxy Growth of Bi2Se3 on a Freestanding Monolayer Graphene Membrane: Implications for Layered Materials and Heterostructures. ACS Applied Nano Materials, 2021, 4, 7607-7613.	5.0	0
81	Electron Beam Control of Dopants in 2D and 3D Materials. Microscopy and Microanalysis, 2021, 27, 2150-2153.	0.4	0
82	Strain-Induced asymmetry and on-site dynamics of silicon defects in graphene. Carbon Trends, 2022, 9, 100189.	3.0	0