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	Towards automating structural discovery in scanning transmission electron microscopy [*]. Machine Learning: Science and Technology, 2022, 3, 015024.	5.0	11
2	Mapping Conductance and Switching Behavior of Graphene Devices In Situ. Small Methods, 2022, 6, e2101245.	8.6	7
3	Bridging microscopy with molecular dynamics and quantum simulations: an atomAI based pipeline. Npj Computational Materials, 2022, 8, .	8.7	10
4	Automated Experiment in 4D-STEM: Exploring Emergent Physics and Structural Behaviors. ACS Nano, 2022, 16, 7605-7614.	14.6	23
5	Strain-Induced asymmetry and on-site dynamics of silicon defects in graphene. Carbon Trends, 2022, 9, 100189.	3.0	0
6	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
7	Probing potential energy landscapes via electron-beam-induced single atom dynamics. Acta Materialia, 2021, 203, 116508.	7.9	5
8	Imaging Secondary Electron Emission from a Single Atomic Layer. Small Methods, 2021, 5, 2000950.	8.6	5
9	Exploring order parameters and dynamic processes in disordered systems via variational autoencoders. Science Advances, 2021, 7, .	10.3	38
10	Probing atomic-scale symmetry breaking by rotationally invariant machine learning of multidimensional electron scattering. Npj Computational Materials, 2021, 7, .	8.7	15
11	Ensemble learning-iterative training machine learning for uncertainty quantification and automated experiment in atom-resolved microscopy. Npj Computational Materials, 2021, 7, .	8.7	26
12	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
13	Electron Beam Control of Dopants in 2D and 3D Materials. Microscopy and Microanalysis, 2021, 27, 2150-2153.	0.4	0
14	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
15	Statistical learning of governing equations of dynamics from in-situ electron microscopy imaging data. Materials and Design, 2020, 195, 108973.	7.0	8
16	Imaging Conductivity in a Single Atomic Layer. Microscopy and Microanalysis, 2020, 26, 1704-1705.	0.4	1
17	Super-Graphene: The Role of Temperature on Radiation Resistance. Microscopy and Microanalysis, 2020, 26, 2360-2361.	0.4	0
18	Accurately Imaging, Tracking and Moving Single Atoms. Microscopy and Microanalysis, 2020, 26, 2556-2557.	0.4	0

#	Article	IF	Citations
19	Reconstruction of the interatomic forces from dynamic scanning transmission electron microscopy data. Journal of Applied Physics, 2020, 127, 224301.	2.5	2
20	Direct matter disassembly via electron beam control: electron-beam-mediated catalytic etching of graphene by nanoparticles. Nanotechnology, 2020, 31, 245303.	2.6	4
21	Reconstruction of effective potential from statistical analysis of dynamic trajectories. AIP Advances, 2020, 10, .	1.3	4
22	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
23	Electron-beam introduction of heteroatomic Ptâ€“Si structures in graphene. Carbon, 2020, 161, 750-757.	10.3	34
24	Variable voltage electron microscopy: Toward atom-by-atom fabrication in 2D materials. Ultramicroscopy, 2020, 211, 112949.	1.9	14
25	Electronâ€Beamâ€Related Studies of Halide Perovskites: Challenges and Opportunities. Advanced Energy Materials, 2020, 10, 1903191.	19.5	53
26	Doping of Cr in Graphene Using Electron Beam Manipulation for Functional Defect Engineering. ACS Applied Nano Materials, 2020, 3, 10855-10863.	5.0	24
27	Compressive Sensing on Diverse STEM Scans: Real-time Feedback, Low-dose and Dynamic Range. Microscopy and Microanalysis, 2019, 25, 1688-1689.	0.4	3
28	Toward Electrochemical Studies on the Nanometer and Atomic Scales: Progress, Challenges, and Opportunities. ACS Nano, 2019, 13, 9735-9780.	14.6	32
29	Lab on a beamâ€"Big data and artificial intelligence in scanning transmission electron microscopy. MRS Bulletin, 2019, 44, 565-575.	3.5	24
30	From Control of the Electron Beam to Control of Single Atoms. Microscopy and Microanalysis, 2019, 25, 1678-1679.	0.4	0
31	Pulsed Laser-Assisted Helium Ion Nanomachining of Monolayer Grapheneâ€"Direct-Write Kirigami Patterns. Nanomaterials, 2019, 9, 1394.	4.1	10
32	A self-driving microscope and the Atomic Forge. MRS Bulletin, 2019, 44, 669-670.	3.5	17
33	Unsupervised Machine Learning to Distill Structural-Property Insights from 4D-STEM. Microscopy and Microanalysis, 2019, 25, 12-13.	0.4	0
34	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
35	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
36	Towards Atomic Scale Quantum Structure Fabrication in 2D Materials. Microscopy and Microanalysis, 2019, 25, 940-941.	0.4	0

#	Article	IF	Citations
37	Deep learning analysis of defect and phase evolution during electron beam-induced transformations in WS2. Npj Computational Materials, 2019, 5, .	8.7	113
38	Atom-by-atom fabrication with electron beams. Nature Reviews Materials, 2019, 4, 497-507.	48.7	73
39	Materials and Devices with Probes and Beams: Down to the Atomic Level and Back Up. Advanced Functional Materials, 2019, 29, 1908267.	14.9	3
40	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
41	Measuring the areal density of nanomaterials by electron energy-loss spectroscopy. Ultramicroscopy, 2019, 196, 154-160.	1.9	7
42	Two-level structural sparsity regularization for identifying lattices and defects in noisy images. Annals of Applied Statistics, 2018, 12, .	1.1	3
43	Multi-purposed Ar gas cluster ion beam processing for graphene engineering. Carbon, 2018, 131, 142-148.	10.3	18
44	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
45	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
46	Compressed Sensing of Scanning Transmission Electron Microscopy (STEM) With Nonrectangular Scans. Microscopy and Microanalysis, 2018, 24, 623-633.	0.4	34
47	Mapping mesoscopic phase evolution during E-beam induced transformations via deep learning of atomically resolved images. Npj Computational Materials, 2018, 4, .	8.7	31
48	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
49	Deep Learning for Atomically Resolved Imaging. Microscopy and Microanalysis, 2018, 24, 60-61.	0.4	5
50	Leveraging Single Atom Dynamics to Measure the Electron-Beam-Induced Force and Atomic Potentials. Microscopy and Microanalysis, 2018, 24, 96-97.	0.4	0
51	Deep Convolutional Neural Networks for Symmetry Detection. Microscopy and Microanalysis, 2018, 24, 112-113.	0.4	5
52	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
53	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
54	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

#	Article	IF	Citations
55	Machine Learning for the Dynamic Scanning Transmission Electron Microscopy Experiment on Solid State Transformations. Microscopy and Microanalysis, 2018, 24, 1600-1601.	0.4	0
56	Building Structures Atom by Atom via Electron Beam Manipulation. Small, 2018, 14, e1801771.	10.0	81
57	Graphene milling dynamics during helium ion beam irradiation. Carbon, 2018, 138, 277-282.	10.3	18
58	Accurate Quantification of Si/SiGe Interface Profiles via Atom Probe Tomography. Advanced Materials Interfaces, 2017, 4, 1700622.	3.7	30
59	Placing single atoms in graphene with a scanning transmission electron microscope. Applied Physics Letters, 2017, 111, .	3.3	119
60	3D Analysis of Fuel Cell Electrocatalyst Degradation on Alternate Carbon Supports. ACS Applied Materials & Interfaces, 2017, 9, 29839-29848.	8.0	76
61	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
62	Quantification of Atomic Arrangements at Heterostructure Interfaces. Microscopy and Microanalysis, 2016, 22, 1502-1503.	0.4	0
63	Considerations and Challenges with Characterizing Si/SiGe Interfaces. Microscopy and Microanalysis, 2016, 22, 1450-1451.	0.4	0
64	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
65	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
66	Quantitative Phase Fraction Detection in Organic Photovoltaic Materials through EELS Imaging. Polymers, 2015, 7, 2446-2460.	4.5	16
67	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
68	Correlating high power conversion efficiency of PTB7:PC₇₁BM inverted organic solar cells with nanoscale structures. Nanoscale, 2015, 7, 15576-15583.	5.6	54
69	Supportless, Bismuth-Modified Palladium Nanotubes with Improved Activity and Stability for Formic Acid Oxidation. ACS Catalysis, 2015, 5, 5154-5163.	11.2	34
70	Exciton emission from hybrid organic and plasmonic polytype InP nanowire heterostructures. Materials Research Express, 2015, 2, 045001.	1.6	6
71	Segregated Pt on Pd nanotubes for enhanced oxygen reduction activity in alkaline electrolyte. Chemical Communications, 2015, 51, 16633-16636.	4.1	17
72	DC electric field induced phase array self-assembly of Au nanoparticles. Nanotechnology, 2014, 25, 465301.	2.6	3

#	Article	IF	Citations
73	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
74	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
75	Universal Formation of Compositionally Graded Bulk Heterojunction for Efficiency Enhancement in Organic Photovoltaics. Advanced Materials, 2014, 26, 3068-3075.	21.0	139
76	Electron Energy-Loss Spectroscopic Imaging for Phase Detection in Organic Photovoltaics. Microscopy and Microanalysis, 2014, 20, 538-539.	0.4	0
77	Synthesis of Millimeter-Size Hexagon-Shaped Graphene Single Crystals on Resolidified Copper. ACS Nano, 2013, 7, 8924-8931.	14.6	178
78	Enhanced absorption in ultrathin Si by NiSi₂ nanoparticles. Nanomaterials and Energy, 2013, 2, 11-19.	0.2	7
79	Absorption enhancement by Ni-silicide nanostructures embedded in ultra-thin Si films. Microscopy and Microanalysis, 2012, 18, 1862-1863.	0.4	0
80	Nanocrystalline Solar Cell Materials Characterization. Microscopy and Microanalysis, 2009, 15, 1430-1431.	0.4	0
81	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
82	Contrast Mechanisms in Secondary Electron e-Beam-Induced Current (SEEBIC) Imaging. Microscopy and Microanalysis, 0, , 1-17.	0.4	3