

Matthew H Mecklenburg

List of Publications by Year in descending order

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citing authors

#	ARTICLE	IF	CITATIONS
1	Imaging Dielectric Breakdown in Valence Change Memory. <i>Advanced Functional Materials</i> , 2022, 32, 2102313.	7.8	10
2	Utilizing nanoscale particulate matter from the combustion of diesel fuels as a carbonaceous anode electrode for Li-ion batteries. <i>Resources, Conservation and Recycling</i> , 2022, 177, 105972.	5.3	6
3	Imaging Dielectric Breakdown in Valence Change Memory (Adv. Funct. Mater. 2/2022). <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	0
4	Crystal Structure of Colloidally Prepared Metastable Ag ₂ Se Nanocrystals. <i>Nano Letters</i> , 2021, 21, 5881-5887.	4.5	16
5	In Situ STEM Observations of Elemental Segregation in Phase Change Material GST Under Electrical and Thermal Stress. <i>Microscopy and Microanalysis</i> , 2021, 27, 168-169.	0.2	0
6	Modern STEM EBIC: Emerging Modes and Methods. <i>Microscopy and Microanalysis</i> , 2021, 27, 2350-2352.	0.2	0
7	Technique and Computational Improvements in 4D STEM and Cross-Correlation Analysis. <i>Microscopy and Microanalysis</i> , 2021, 27, 1540-1541.	0.2	0
8	Mean Angular Deviation Minimization To Determine Lattice Parameters in Transmission Kikuchi Diffraction. <i>Microscopy and Microanalysis</i> , 2021, 27, 1608-1609.	0.2	1
9	Imaging Soft and Hard Dielectric Breakdown in Resistive Switching. <i>Microscopy and Microanalysis</i> , 2021, 27, 2354-2355.	0.2	0
10	Determining Lattice Parameters by Curve-Fitting Transmission Kikuchi Diffraction Patterns. <i>Microscopy and Microanalysis</i> , 2021, 27, 2020-2021.	0.2	0
11	In Situ Visualization of the Electron Wind Force in the Elastic Regime. <i>Microscopy and Microanalysis</i> , 2021, 27, 106-107.	0.2	0
12	Chemical Shift Detection with Energy Dispersive Spectroscopy (EDS). <i>Microscopy and Microanalysis</i> , 2021, 27, 2068-2069.	0.2	0
13	Discovery of a Wurtzite-like Cu ₂ FeSnSe ₄ Semiconductor Nanocrystal Polymorph and Implications for Related CuFeSe ₂ Materials. <i>ACS Nano</i> , 2021, 15, 13463-13474.	7.3	10
14	Nanoscale TiO ₂ Protection Layer Enhances the Built-In Field and Charge Separation Performance of GaP Photoelectrodes. <i>Nano Letters</i> , 2021, 21, 8017-8024.	4.5	6
15	Mapping Charge Recombination and the Effect of Point-Defect Insertion in GaAs Nanowire Heterojunctions. <i>Physical Review Applied</i> , 2021, 16, .	1.5	1
16	Vibrational Sum Frequency Generation Spectroscopy of Surface Hydroxyls on Nickel Phyllosilicate Nanoscrolls. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 10366-10371.	2.1	4
17	Visualizing the Electron Wind Force in the Elastic Regime. <i>Nano Letters</i> , 2021, 21, 10172-10177.	4.5	8
18	Gold-vapor-assisted chemical vapor deposition of aligned monolayer WSe ₂ with large domain size and fast growth rate. <i>Nano Research</i> , 2020, 13, 2625-2631.	5.8	15

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19	Determination of Long-Range Internal Stresses in Cyclically Deformed Copper Single Crystals Using Convergent Beam Electron Diffraction. <i>Crystals</i> , 2020, 10, 1071.	1.0	0
20	Electron-Transparent Thermoelectric Coolers Demonstrated with Nanoparticle and Condensation Thermometry. <i>ACS Nano</i> , 2020, 14, 11510-11517.	7.3	11
21	Correlation of Joule Heating and Electromigration-induced Mass Transport within Nanoscale Co Interconnects by In Situ STEM. <i>Microscopy and Microanalysis</i> , 2020, 26, 152-154.	0.2	0
22	Electrical Isolation Preserved by Plasma Focused Ion Beam TEM Sample Preparation and Verified with STEM SEEBIC Imaging. <i>Microscopy and Microanalysis</i> , 2020, 26, 194-195.	0.2	0
23	Fingerprinting the Phases of Thin Film Ge ₂ Sb ₂ Te ₅ with EELS. <i>Microscopy and Microanalysis</i> , 2020, 26, 904-905.	0.2	0
24	Decoration of suspended single-walled carbon nanotubes with soft-landed size-selected metal nanoparticles. <i>Thin Solid Films</i> , 2020, 699, 137907.	0.8	1
25	STEM EBIC Thermometry Calibration with PEET on Al Nanoparticles. <i>Microscopy and Microanalysis</i> , 2020, 26, 3124-3125.	0.2	1
26	Surface Modification and Functionalization of Boron Nitride Nanotubes via Condensation with Saturated and Unsaturated Alcohols for High Performance Polymer Composites. <i>ACS Applied Nano Materials</i> , 2019, 2, 4053-4060.	2.4	22
27	Secondary-Electron Electron-Beam-Induced Current Measurements at Lattice Resolution. <i>Microscopy and Microanalysis</i> , 2019, 25, 1656-1657.	0.2	1
28	Mapping Electronic State Changes with STEM EBIC. <i>Microscopy and Microanalysis</i> , 2019, 25, 1396-1397.	0.2	0
29	Adjusting the STEM Sample Holder Potential for Improved EBIC Contrast. <i>Microscopy and Microanalysis</i> , 2019, 25, 2354-2355.	0.2	2
30	Measuring nanoscale thermal gradients in suspended MoS ₂ with STEM-EELS. <i>Applied Physics Letters</i> , 2019, 115, .	1.5	9
31	STEM of a Single Crystal Lithium Ion Battery Anode during Electrochemical Cycling. <i>Microscopy and Microanalysis</i> , 2019, 25, 2060-2061.	0.2	2
32	Electron beam-induced current imaging with two-angstrom resolution. <i>Ultramicroscopy</i> , 2019, 207, 112852.	0.8	23
33	Tunable Thermal Energy Transport across Diamond Membranes and Diamond-Si Interfaces by Nanoscale Graphoepitaxy. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 18517-18527.	4.0	49
34	Thermometry of Silicon Nanoparticles. <i>Physical Review Applied</i> , 2018, 9, .	1.5	14
35	Mapping Nanoscale Thermal Gradients in MoS ₂ using Plasmon Energy Shifts. <i>Microscopy and Microanalysis</i> , 2018, 24, 1870-1871.	0.2	0
36	Electromigration of Copper in Lithographically-Defined Aluminum Nanowires. <i>Microscopy and Microanalysis</i> , 2018, 24, 2190-2191.	0.2	0

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37	STEM Imaging with Beam-Induced Hole and Secondary Electron Currents. <i>Physical Review Applied</i> , 2018, 10, .	1.5	29
38	Secondary Electron Contrast in STEM Electron Beam-Induced Current (EBIC): a Path Towards Mapping Electronic Structure. <i>Microscopy and Microanalysis</i> , 2018, 24, 1846-1847.	0.2	3
39	Confined Liquid-Phase Growth of Crystalline Compound Semiconductors on Any Substrate. <i>ACS Nano</i> , 2018, 12, 5158-5167.	7.3	19
40	Low Thermal Boundary Resistance Interfaces for GaN-on-Diamond Devices. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 24302-24309.	4.0	98
41	Local In Situ Temperature Measurements from Aluminum Nanoparticles. <i>Microscopy and Microanalysis</i> , 2018, 24, 1924-1925.	0.2	3
42	Hierarchical Carbon-Coated Ball-Milled Silicon: Synthesis and Applications in Free-Standing Electrodes and High-Voltage Full Lithium-Ion Batteries. <i>ACS Nano</i> , 2018, 12, 6280-6291.	7.3	99
43	Giant optical anisotropy in a quasi-one-dimensional crystal. <i>Nature Photonics</i> , 2018, 12, 392-396.	15.6	269
44	Atomic Insights into the Enhanced Surface Stability in High Voltage Cathode Materials by Ultrathin Coating. <i>Advanced Functional Materials</i> , 2017, 27, 1602873.	7.8	37
45	Plasmon Energy Mapping in Aluminum and Indium with Sub-Nanometer Resolution. <i>Microscopy and Microanalysis</i> , 2017, 23, 378-379.	0.2	0
46	Temperature-dependent signals in STEM Electron Beam-Induced Current (EBIC) Imaging. <i>Microscopy and Microanalysis</i> , 2017, 23, 1506-1507.	0.2	0
47	STEM EBIC Mapping of the Metal-Insulator Transition in Thin-film NbO ₂ . <i>Microscopy and Microanalysis</i> , 2017, 23, 1428-1429.	0.2	1
48	Detailed In Situ Observations of Electromigration in Aluminum Wires. <i>Microscopy and Microanalysis</i> , 2017, 23, 1450-1451.	0.2	0
49	In Situ Observation of Cooling in a Bismuth Telluride and Bismuth-Antimony Telluride Nanoscale Heterojunction. <i>Microscopy and Microanalysis</i> , 2017, 23, 1996-1997.	0.2	0
50	Aluminum Nanoparticles as Fiducials for Nanoscale Temperature Measurements. <i>Microscopy and Microanalysis</i> , 2016, 22, 830-831.	0.2	1
51	Nanoscale Mapping of Interfacial Electrical Transport in Graphene-MoS ₂ Heterostructures with STEM-EBIC. <i>Microscopy and Microanalysis</i> , 2016, 22, 1552-1553.	0.2	0
52	Aloof Beam Plasmons in Silver Nanoparticles. <i>Microscopy and Microanalysis</i> , 2016, 22, 1642-1643.	0.2	1
53	Temperature Dependence of the Silicon Nitride Volume Plasmon. <i>Microscopy and Microanalysis</i> , 2016, 22, 1574-1575.	0.2	1
54	Temperature Dependence of the Volume Plasmon in Silicon Nanoparticles. <i>Microscopy and Microanalysis</i> , 2016, 22, 296-297.	0.2	0

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55	Asymmetric Temperature Profiles in Joule-Heated in Aluminum Nanowires. <i>Microscopy and Microanalysis</i> , 2016, 22, 772-773.	0.2	0
56	Sputtered Hf/Ti nanostructures: A segregation and high-temperature stability study. <i>Acta Materialia</i> , 2016, 108, 8-16.	3.8	35
57	Correlation of Ti ³⁺ states with photocatalytic enhancement in TiO ₂ -passivated p-GaAs. <i>Journal of Catalysis</i> , 2016, 337, 133-137.	3.1	25
58	Imaging interfacial electrical transport in graphene/MoS ₂ heterostructures with electron-beam-induced-currents. <i>Applied Physics Letters</i> , 2015, 107, 223104.	1.5	18
59	Time-Resolved Imaging of Electrochemical Switching in Nanoscale Resistive Memory Elements. <i>Microscopy and Microanalysis</i> , 2015, 21, 1911-1912.	0.2	0
60	Applications of Plasmon Energy Expansion Thermometry. <i>Microscopy and Microanalysis</i> , 2015, 21, 663-664.	0.2	0
61	Introduction to Plasmon Energy Expansion Thermometry. <i>Microscopy and Microanalysis</i> , 2015, 21, 1907-1908.	0.2	0
62	Capacity retention behavior and morphology evolution of Si _x Ge _{1-x} nanoparticles as lithium-ion battery anode. <i>Nanotechnology</i> , 2015, 26, 255702.	1.3	13
63	Nanoscale temperature mapping in operating microelectronic devices. <i>Science</i> , 2015, 347, 629-632.	6.0	253
64	Direct Bandgap Transition in Many-Layer MoS ₂ by Plasma-Induced Layer Decoupling. <i>Advanced Materials</i> , 2015, 27, 1573-1578.	11.1	102
65	Controlling the Trap State Landscape of Colloidal CdSe Nanocrystals with Cadmium Halide Ligands. <i>Chemistry of Materials</i> , 2015, 27, 744-756.	3.2	58
66	Reversible Semiconducting-to-Metallic Phase Transition in Chemical Vapor Deposition Grown Monolayer WSe ₂ and Applications for Devices. <i>ACS Nano</i> , 2015, 9, 7383-7391.	7.3	164
67	Nanofilament Formation and Regeneration During Cu/Al ₂ O ₃ Resistive Memory Switching. <i>Nano Letters</i> , 2015, 15, 3983-3987.	4.5	123
68	Microscopic Study of Atomic Layer Deposition of TiO ₂ on GaAs and Its Photocatalytic Application. <i>Chemistry of Materials</i> , 2015, 27, 7977-7981.	3.2	27
69	Two-Dimensional Metal-Organic Surfaces for Efficient Hydrogen Evolution from Water. <i>Journal of the American Chemical Society</i> , 2015, 137, 118-121.	6.6	521
70	Three-Dimensional Imaging of Dislocations and Defects in Materials at Atomic Resolution Using Electron Tomography. <i>Microscopy and Microanalysis</i> , 2014, 20, 1062-1063.	0.2	0
71	Hydrothermal Preparation and Magnetic Properties of NaFeSi ₂ O ₆ : Nanowires vs Bulk Samples. <i>Inorganic Chemistry</i> , 2014, 53, 12396-12401.	1.9	9
72	Large-Scale Fabrication, 3D Tomography, and Lithium-Ion Battery Application of Porous Silicon. <i>Nano Letters</i> , 2014, 14, 261-268.	4.5	213

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73	Aligned Epitaxial SnO ₂ Nanowires on Sapphire: Growth and Device Applications. Nano Letters, 2014, 14, 3014-3022.	4.5	72
74	STEM EBIC to Study 2D Materials. Microscopy and Microanalysis, 2014, 20, 172-173.	0.2	1
75	Improved Temperature Determination from Plasmon Energy Shifts in Aluminum. Microscopy and Microanalysis, 2014, 20, 200-201.	0.2	0
76	Low-Temperature Synthesis of AMoO ₄ (A = Ca, Sr, Ba) Scheelite Nanocrystals. Chemistry of Materials, 2013, 25, 4129-4134.	3.2	34
77	Charged Nanoparticle Dynamics in Water Induced by Scanning Transmission Electron Microscopy. Langmuir, 2012, 28, 3695-3698.	1.6	107
78	Transparent and Flexible Graphene Charge-Trap Memory. ACS Nano, 2012, 6, 7879-7884.	7.3	108
79	<i>In Situ</i> Transmission Electron Microscopy of Lead Dendrites and Lead Ions in Aqueous Solution. ACS Nano, 2012, 6, 6308-6317.	7.3	165
80	Chemical Vapor Deposition of Graphene on Copper from Methane, Ethane and Propane: Evidence for Bilayer Selectivity. Small, 2012, 8, 1415-1422.	5.2	93
81	Electron tomography at 2.4-Ångström resolution. Nature, 2012, 483, 444-447.	13.7	366
82	Morphological and Dimensional Control via Hierarchical Assembly of Doped Oligoaniline Single Crystals. Journal of the American Chemical Society, 2012, 134, 9251-9262.	6.6	99
83	Atomic-Scale Characterization of Graphene Grown on Copper (100) Single Crystals. Journal of the American Chemical Society, 2011, 133, 12536-12543.	6.6	154
84	Spin and the Honeycomb Lattice: Lessons from Graphene. Physical Review Letters, 2011, 106, 116803.	2.9	97
85	Effect of precursor flux on compositional evolution in In _{1-x} Sb _x nanowires grown via self-catalyzed vapor-liquid-solid process. Journal of Crystal Growth, 2011, 336, 14-19.	0.7	18