Alexei Belianinov

List of Publications by Year in descending order

92 papers	2,649 citations	186265 28 h-index	197818 49 g-index
93 all docs	93 docs citations	93 times ranked	4362 citing authors

#	Article	IF	Citations
1	Highly enhanced ferroelectricity in HfO ₂ -based ferroelectric thin film by light ion bombardment. Science, 2022, 376, 731-738.	12.6	58
2	Selective patterning of out-of-plane piezoelectricity in MoTe2 via focused ion beam. Nano Energy, 2021, 79, 105451.	16.0	17
3	Understanding Degradation Mechanisms in SrIrO₃ Oxygen Evolution Electrocatalysts: Chemical and Structural Microscopy at the Nanoscale. Advanced Functional Materials, 2021, 31, 2101542.	14.9	16
4	Analyzing carbon fiber structures observed by helium ion microscopy and their mechanical properties. Carbon Trends, 2021, 4, 100055.	3.0	7
5	Nanoscale friction of CVD single-layer MoS2 with controlled defect formation. Surfaces and Interfaces, 2021, 26, 101437.	3.0	5
6	Nanoweb Surfaceâ€Mounted Metalâ€“Organic Framework Films with Tunable Amounts of Acid Sites as Tailored Catalysts. Chemistry - A European Journal, 2020, 26, 691-698.	3.3	11
7	Nonâ€Equilibrium Synthesis of Highly Active Nanostructured, Oxygenâ€Incorporated Amorphous Molybdenum Sulfide HER Electrocatalyst. Small, 2020, 16, e2004047.	10.0	29
8	Highâ€efficiency singleâ€junction pâ€iâ€n GaAs solar cell on rollâ€toâ€roll epiâ€ready flexible metal foils for lowâ€cost photovoltaics. Progress in Photovoltaics: Research and Applications, 2020, 28, 1107-1119.	8.1	10
9	In situ multimodal imaging for nanoscale visualization of tribofilm formation. Journal of Applied Physics, 2020, 127, 154303.	2.5	4
10	Direct Write of 3D Nanoscale Mesh Objects with Platinum Precursor via Focused Helium Ion Beam Induced Deposition. Micromachines, 2020, 11, 527.	2.9	15
11	Twin domains modulate light-matter interactions in metal halide perovskites. APL Materials, 2020, 8, .	5.1	17
12	Strainâ€“Chemical Gradient and Polarization in Metal Halide Perovskites. Advanced Electronic Materials, 2020, 6, 1901235.	5.1	19
13	Perovskites: Strainâ€“Chemical Gradient and Polarization in Metal Halide Perovskites (Adv. Electron.) Tj ETQq1 1 0.784314 rgBT /Over	5.1	0
14	Nanoaperture fabrication in ultra-smooth single-grain gold films with helium ion beam lithography. Nanotechnology, 2020, 31, 465302.	2.6	9
15	Spectral Map Reconstruction Using Pan-Sharpening Algorithm: Enhancing Chemical Imaging with AFM-IR. Microscopy and Microanalysis, 2019, 25, 1024-1025.	0.4	2
16	Multi-Model Imaging of Local Chemistry and Ferroic Properties of Hybrid Organic-Inorganic Perovskites. Microscopy and Microanalysis, 2019, 25, 2076-2077.	0.4	3
17	Ferroic twin domains in metal halide perovskites. MRS Advances, 2019, 4, 2817-2830.	0.9	7
18	Helium Ion Microscopy Imaging of Bottlebrush Copolymers. Microscopy and Microanalysis, 2019, 25, 908-909.	0.4	0

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19	Lightâ€Ferroic Interaction in Hybrid Organicâ€“Inorganic Perovskites. Advanced Optical Materials, 2019, 7, 1901451.	7.3	24
20	Surface Analysis of Polymers using Helium Ion Microscopy Coupled with Secondary Ion Mass Spectrometry (HIM-SIMS). Microscopy and Microanalysis, 2019, 25, 868-869.	0.4	1
21	High Resolution Multimodal Chemical Imaging Platform for Organics and Inorganics. Analytical Chemistry, 2019, 91, 12142-12148.	6.5	16
22	Multimodal Chemical Imaging for Linking Adhesion with Local Chemistry in Agrochemical Multicomponent Polymeric Coatings. Analytical Chemistry, 2019, 91, 2791-2796.	6.5	8
23	Deep data analytics for genetic engineering of diatoms linking genotype to phenotype via machine learning. Npj Computational Materials, 2019, 5, .	8.7	16
24	Application of pan-sharpening algorithm for correlative multimodal imaging using AFM-IR. Npj Computational Materials, 2019, 5, .	8.7	9
25	Lightâ€“Ferroic Interaction: Lightâ€Ferroic Interaction in Hybrid Organicâ€“Inorganic Perovskites (Advanced Optical Materials 23/2019). Advanced Optical Materials, 2019, 7, 1970090.	7.3	1
26	Reply to: On the ferroelectricity of CH3NH3PbI3 perovskites. Nature Materials, 2019, 18, 1051-1053.	27.5	21
27	Multi-purposed Ar gas cluster ion beam processing for graphene engineering. Carbon, 2018, 131, 142-148.	10.3	18
28	Memristive Ion Channel-Doped Biomembranes as Synaptic Mimics. ACS Nano, 2018, 12, 4702-4711.	14.6	107
29	Helium Ion Microscopy for Imaging and Quantifying Porosity at the Nanoscale. Analytical Chemistry, 2018, 90, 1370-1375.	6.5	17
30	A Soft-Matter Biomolecular Memristor Synapse for Neuromorphic Systems. , 2018, , .		6
31	Response of a Memristive Biomembrane and Demonstration of Potential Use in Online Learning. , 2018, , .		4
32	Biomimetic, Soft-Material Synapse for Neuromorphic Computing: from Device to Network. , 2018, , .		14
33	Liquid Cell Crystallization and In-situ Imaging of Thiamethoxam by Helium Ion Microscopy. Microscopy and Microanalysis, 2018, 24, 330-331.	0.4	0
34	Correlated Materials Characterization via Multimodal Chemical and Functional Imaging. ACS Nano, 2018, 12, 11798-11818.	14.6	28
35	In situ liquid cell crystallization and imaging of thiamethoxam by helium ion microscopy. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2018, 36, .	1.2	3
36	Nanoscale Electrochemical Phenomena of Polarization Switching in Ferroelectrics. ACS Applied Materials & Interfaces, 2018, 10, 38217-38222.	8.0	18

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37	Molecular reorganization in bulk bottlebrush polymers: direct observation via nanoscale imaging. Nanoscale, 2018, 10, 18001-18009.	5.6	14
38	3D Nanostructures Grown via Focused Helium Ion Beam Induced Deposition. Microscopy and Microanalysis, 2018, 24, 332-333.	0.4	1
39	Chemical nature of ferroelastic twin domains in CH3NH3PbI3 perovskite. Nature Materials, 2018, 17, 1013-1019.	27.5	183
40	Dynamic behavior of CH3NH3PbI3 perovskite twin domains. Applied Physics Letters, 2018, 113, .	3.3	27
41	Graphene milling dynamics during helium ion beam irradiation. Carbon, 2018, 138, 277-282.	10.3	18
42	Enhancing Ion Migration in Grain Boundaries of Hybrid Organicâ€“Inorganic Perovskites by Chlorine. Advanced Functional Materials, 2017, 27, 1700749.	14.9	74
43	Building with ions: towards direct write of platinum nanostructures using in situ liquid cell helium ion microscopy. Nanoscale, 2017, 9, 12949-12956.	5.6	8
44	Tutorial: Processing of Atomic Resolution Images and Multispectral Data. Microscopy and Microanalysis, 2017, 23, 1394-1395.	0.4	0
45	Noble gas ion beams in materials science for future applications and devices. MRS Bulletin, 2017, 42, 660-666.	3.5	23
46	Ion Beam Induced Current Measurements of Solar Cells with Helium Ion Microscopy. Microscopy and Microanalysis, 2017, 23, 2084-2085.	0.4	0
47	High Conduction Hopping Behavior Induced in Transition Metal Dichalcogenides by Percolating Defect Networks: Toward Atomically Thin Circuits. Advanced Functional Materials, 2017, 27, 1702829.	14.9	52
48	Automated Interpretation and Extraction of Topographic Information from Time of Flight Secondary Ion Mass Spectrometry Data. Scientific Reports, 2017, 7, 17099.	3.3	21
49	Chemical Changes in Layered Ferroelectric Semiconductors Induced by Helium Ion Beam. Scientific Reports, 2017, 7, 16619.	3.3	3
50	Engineering the thermal conductivity along an individual silicon nanowire by selective helium ion irradiation. Nature Communications, 2017, 8, 15919.	12.8	65
51	Nanofabrication Limits in Layered Ferroelectric Semiconductors via He-ion Beam. Microscopy and Microanalysis, 2017, 23, 262-263.	0.4	0
52	Rapid Screening of Nanoporous Structures in SiO2 Catalyst Particles via Helium Ion Microscopy. Microscopy and Microanalysis, 2017, 23, 264-265.	0.4	0
53	Multi-Modal Processing of Graphene Towards Precisely Controlled Fabrication of a Nanoelectronic Device Using the Helium Ion Microscope and the TOF SIMS. Microscopy and Microanalysis, 2017, 23, 1720-1721.	0.4	0
54	Building with Ions: Development of In-situ Liquid Cell Microscopy for the Helium Ion Microscope.. Microscopy and Microanalysis, 2016, 22, 754-755.	0.4	0

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55	Local coexistence of VO2 phases revealed by deep data analysis. Scientific Reports, 2016, 6, 29216.	3.3	8
56	High Performance Computing Tools for Cross Correlation of Multi-Dimensional Data Sets Across Instrument Platforms. Microscopy and Microanalysis, 2016, 22, 288-289.	0.4	0
57	Using Multivariate Analysis of Scanning-Rochigram Data to Reveal Material Functionality. Microscopy and Microanalysis, 2016, 22, 292-293.	0.4	2
58	Rapid mapping of polarization switching through complete information acquisition. Nature Communications, 2016, 7, 13290.	12.8	21
59	G-mode magnetic force microscopy: Separating magnetic and electrostatic interactions using big data analytics. Applied Physics Letters, 2016, 108, .	3.3	24
60	Directing Matter: Toward Atomic-Scale 3D Nanofabrication. ACS Nano, 2016, 10, 5600-5618.	14.6	99
61	Role of Associated Defects in Oxygen Ion Conduction and Surface Exchange Reaction for Epitaxial Samaria-Doped Ceria Thin Films as Catalytic Coatings. ACS Applied Materials & Interfaces, 2016, 8, 14613-14621.	8.0	39
62	Unraveling the Mechanism of Nanoscale Mechanical Reinforcement in Glassy Polymer Nanocomposites. Nano Letters, 2016, 16, 3630-3637.	9.1	142
63	Polarization Control via He-Ion Beam Induced Nanofabrication in Layered Ferroelectric Semiconductors. ACS Applied Materials & Interfaces, 2016, 8, 7349-7355.	8.0	19
64	Big, Deep, and Smart Data in Scanning Probe Microscopy. ACS Nano, 2016, 10, 9068-9086.	14.6	103
65	Atomistic-Scale Simulations of Defect Formation in Graphene under Noble Gas Ion Irradiation. ACS Nano, 2016, 10, 8376-8384.	14.6	113
66	Focused helium-ion beam irradiation effects on electrical transport properties of few-layer WSe2: enabling nanoscale direct write homo-junctions. Scientific Reports, 2016, 6, 27276.	3.3	99
67	Full data acquisition in Kelvin Probe Force Microscopy: Mapping dynamic electric phenomena in real space. Scientific Reports, 2016, 6, 30557.	3.3	47
68	Nanoforging Single Layer MoSe2 Through Defect Engineering with Focused Helium Ion Beams. Scientific Reports, 2016, 6, 30481.	3.3	82
69	Deciphering Halogen Competition in Organometallic Halide Perovskite Growth. Journal of the American Chemical Society, 2016, 138, 5028-5035.	13.7	92
70	Graphene engineering by neon ion beams. Nanotechnology, 2016, 27, 125302.	2.6	21
71	Multifrequency spectrum analysis using fully digital G Mode-Kelvin probe force microscopy. Nanotechnology, 2016, 27, 105706.	2.6	36
72	Full information acquisition in piezoresponse force microscopy. Applied Physics Letters, 2015, 107, 263102.	3.3	28

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73	Deep Data Analysis of Atomic Level Structure-Property Relationship in an Iron Superconductor Fe 105 Te 075 Se 025. Microscopy and Microanalysis, 2015, 21, 2345-2346.	0.4	0
74	STEM in 4 Dimensions: Using Multivariate Analysis of Ptychographic Data to Reveal Material Functionality. Microscopy and Microanalysis, 2015, 21, 1863-1864.	0.4	0
75	Local Crystallography: Phases, Symmetries, and Defects from Bottom Up. Microscopy and Microanalysis, 2015, 21, 2203-2204.	0.4	1
76	Big data and deep data in scanning and electron microscopies: deriving functionality from multidimensional data sets. Advanced Structural and Chemical Imaging, 2015, 1, 6.	4.0	74
77	High-T_c Layered Ferrielectric Crystals by Coherent Spinodal Decomposition. ACS Nano, 2015, 9, 12365-12373.	14.6	67
78	Complete information acquisition in dynamic force microscopy. Nature Communications, 2015, 6, 6550.	12.8	49
79	Identification of phases, symmetries and defects through local crystallography. Nature Communications, 2015, 6, 7801.	12.8	63
80	Co-registered Topographical, Band Excitation Nanomechanical, and Mass Spectral Imaging Using a Combined Atomic Force Microscopy/Mass Spectrometry Platform. ACS Nano, 2015, 9, 4260-4269.	14.6	31
81	Defective Interfaces in Yttrium-Doped Barium Zirconate Films and Consequences on Proton Conduction. Nano Letters, 2015, 15, 2343-2349.	9.1	25
82	Domain Wall Motion Across Various Grain Boundaries in Ferroelectric Thin Films. Journal of the American Ceramic Society, 2015, 98, 1848-1857.	3.8	42
83	Better Catalysts through Microscopy: Mesoscale M1/M2 Intergrowth in Molybdenumâ€“Vanadium Based Complex Oxide Catalysts for Propane Ammoxidation. ACS Nano, 2015, 9, 3470-3478.	14.6	47
84	Antisite defects in layered multiferroic CuCr_{0.9}In_{0.1}P₂S₆. Nanoscale, 2015, 7, 18579-18583.	5.6	8
85	Constraining Data Mining with Physical Models: Voltage- and Oxygen Pressure-Dependent Transport in Multiferroic Nanostructures. Nano Letters, 2015, 15, 6650-6657.	9.1	23
86	Research Update: Spatially resolved mapping of electronic structure on atomic level by multivariate statistical analysis. APL Materials, 2014, 2, .	5.1	14
87	Effect of Doping on Surface Reactivity and Conduction Mechanism in Samarium-Doped Ceria Thin Films. ACS Nano, 2014, 8, 12494-12501.	14.6	34
88	Fundamental limitation to the magnitude of piezoelectric response of âŸ¨001âŸ©pc textured K0.5Na0.5NbO3 ceramic. Applied Physics Letters, 2014, 104, .	3.3	26
89	Deep Data Analysis of Conductive Phenomena on Complex Oxide Interfaces: Physics from Data Mining. ACS Nano, 2014, 8, 6449-6457.	14.6	73
90	Mapping internal structure of coal by confocal micro-Raman spectroscopy and scanning microwave microscopy. Fuel, 2014, 126, 32-37.	6.4	34

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91	Local crystallography analysis for atomically resolved scanning tunneling microscopy images. Nanotechnology, 2013, 24, 415707.	2.6	18
92	Spatially-Resolved Interfacial Electrochemistry: Ohmic Microscopy. Journal of Physical Chemistry C, 2008, 112, 8754-8758.	3.1	14