

Sergei V Kalinin

List of Publications by Year in descending order

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269
papers

15,962
citations

12303

69
h-index

20307

116
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270
all docs

270
docs citations

270
times ranked

11561
citing authors

#	ARTICLE	IF	CITATIONS
1	Imaging mechanism of piezoresponse force microscopy of ferroelectric surfaces. <i>Physical Review B</i> , 2002, 65, .	1.1	446
2	Polarization Control of Electron Tunneling into Ferroelectric Surfaces. <i>Science</i> , 2009, 324, 1421-1425.	6.0	441
3	Dual-frequency resonance-tracking atomic force microscopy. <i>Nanotechnology</i> , 2007, 18, 475504.	1.3	428
4	The band excitation method in scanning probe microscopy for rapid mapping of energy dissipation on the nanoscale. <i>Nanotechnology</i> , 2007, 18, 435503.	1.3	413
5	Local potential and polarization screening on ferroelectric surfaces. <i>Physical Review B</i> , 2001, 63, .	1.1	334
6	Enhanced electric conductivity at ferroelectric vortex cores in BiFeO ₃ . <i>Nature Physics</i> , 2012, 8, 81-88.	6.5	324
7	Electromechanical Imaging and Spectroscopy of Ferroelectric and Piezoelectric Materials: State of the Art and Prospects for the Future. <i>Journal of the American Ceramic Society</i> , 2009, 92, 1629-1647.	1.9	287
8	Probing oxygen vacancy concentration and homogeneity in solid-oxide fuel-cell cathode materials on the subunit-cell level. <i>Nature Materials</i> , 2012, 11, 888-894.	13.3	282
9	Big data in imaging for guiding materials design. <i>Nature Materials</i> , 2015, 14, 973-980.	13.3	281
10	Direct imaging of the spatial and energy distribution of nucleation centres in ferroelectric materials. <i>Nature Materials</i> , 2008, 7, 209-215.	13.3	250
11	Ferroelectric or non-ferroelectric: Why so many materials exhibit ferroelectricity on the nanoscale. <i>Applied Physics Reviews</i> , 2017, 4, .	5.5	240
12	Measuring oxygen reduction/evolution reactions on the nanoscale. <i>Nature Chemistry</i> , 2011, 3, 707-713.	6.6	233
13	Differentiating Ferroelectric and Nonferroelectric Electromechanical Effects with Scanning Probe Microscopy. <i>ACS Nano</i> , 2015, 9, 6484-6492.	7.3	231
14	Nanoelectromechanics of piezoresponse force microscopy. <i>Physical Review B</i> , 2004, 70, .	1.1	230
15	Vector Piezoresponse Force Microscopy. <i>Microscopy and Microanalysis</i> , 2006, 12, 206-220.	0.2	228
16	Functional Ion Defects in Transition Metal Oxides. <i>Science</i> , 2013, 341, 858-859.	6.0	227
17	Dynamic Conductivity of Ferroelectric Domain Walls in BiFeO ₃ . <i>Nano Letters</i> , 2011, 11, 1906-1912.	4.5	223
18	Switching of ferroelectric polarization in epitaxial BaTiO ₃ films on silicon without a conducting bottom electrode. <i>Nature Nanotechnology</i> , 2013, 8, 748-754.	15.6	218

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19	Direct observation of ferroelectric field effect and vacancy-controlled screening at the BiFeO ₃ /La _x Sr _{1-x} MnO ₃ interface. <i>Nature Materials</i> , 2014, 13, 1019-1025.	13.3	218
20	Nanoscale Electromechanics of Ferroelectric and Biological Systems: A New Dimension in Scanning Probe Microscopy. <i>Annual Review of Materials Research</i> , 2007, 37, 189-238.	4.3	204
21	Quantitative mapping of switching behavior in piezoresponse force microscopy. <i>Review of Scientific Instruments</i> , 2006, 77, 073702.	0.6	193
22	Large Resistive Switching in Ferroelectric BiFeO ₃ Nanoisland Based Switchable Diodes. <i>Advanced Materials</i> , 2013, 25, 2339-2343.	11.1	192
23	Chemical nature of ferroelastic twin domains in CH ₃ NH ₃ PbI ₃ perovskite. <i>Nature Materials</i> , 2018, 17, 1013-1019.	13.3	183
24	A decade of piezoresponse force microscopy: progress, challenges, and opportunities. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2006, 53, 2226-2252.	1.7	170
25	Tunable Metallic Conductance in Ferroelectric Nanodomains. <i>Nano Letters</i> , 2012, 12, 209-213.	4.5	153
26	Mapping Octahedral Tilts and Polarization Across a Domain Wall in BiFeO ₃ from Z-Contrast Scanning Transmission Electron Microscopy Image Atomic Column Shape Analysis. <i>ACS Nano</i> , 2010, 4, 6071-6079.	7.3	150
27	Band excitation in scanning probe microscopy: sines of change. <i>Journal Physics D: Applied Physics</i> , 2011, 44, 464006.	1.3	150
28	Nanoscale Switching Characteristics of Nearly Tetragonal BiFeO ₃ Thin Films. <i>Nano Letters</i> , 2010, 10, 2555-2561.	4.5	149
29	Domain polarity and temperature induced potential inversion on the BaTiO ₃ (100) surface. <i>Journal of Applied Physics</i> , 2002, 91, 3816-3823.	1.1	133
30	Surface-screening mechanisms in ferroelectric thin films and their effect on polarization dynamics and domain structures. <i>Reports on Progress in Physics</i> , 2018, 81, 036502.	8.1	129
31	Thermotropic phase boundaries in classic ferroelectrics. <i>Nature Communications</i> , 2014, 5, 3172.	5.8	123
32	Exploring Local Electrostatic Effects with Scanning Probe Microscopy: Implications for Piezoresponse Force Microscopy and Triboelectricity. <i>ACS Nano</i> , 2014, 8, 10229-10236.	7.3	123
33	Nanoscale Ferroelectricity in Crystalline L-Glycine. <i>Advanced Functional Materials</i> , 2012, 22, 2996-3003.	7.8	119
34	Resonance enhancement in piezoresponse force microscopy: Mapping electromechanical activity, contact stiffness, and Q factor. <i>Applied Physics Letters</i> , 2006, 89, 022906.	1.5	117
35	Nanoscale Elastic Changes in 2D Ti ₃ C ₂ T _x (MXene) Pseudocapacitive Electrodes. <i>Advanced Energy Materials</i> , 2016, 6, 1502290.	10.2	117
36	Tunneling Electroresistance Induced by Interfacial Phase Transitions in Ultrathin Oxide Heterostructures. <i>Nano Letters</i> , 2013, 13, 5837-5843.	4.5	115

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37	Surface Domain Structures and Mesoscopic Phase Transition in Relaxor Ferroelectrics. <i>Advanced Functional Materials</i> , 2011, 21, 1977-1987.	7.8	113
38	Domain Wall Conduction and Polarization-Mediated Transport in Ferroelectrics. <i>Advanced Functional Materials</i> , 2013, 23, 2592-2616.	7.8	113
39	Principal component and spatial correlation analysis of spectroscopic-imaging data in scanning probe microscopy. <i>Nanotechnology</i> , 2009, 20, 085714.	1.3	112
40	The Role of Electrochemical Phenomena in Scanning Probe Microscopy of Ferroelectric Thin Films. <i>ACS Nano</i> , 2011, 5, 5683-5691.	7.3	109
41	Dynamic behaviour in piezoresponse force microscopy. <i>Nanotechnology</i> , 2006, 17, 1615-1628.	1.3	108
42	Big, Deep, and Smart Data in Scanning Probe Microscopy. <i>ACS Nano</i> , 2016, 10, 9068-9086.	7.3	103
43	Interplay of Octahedral Tilts and Polar Order in BiFeO ₃ Films. <i>Advanced Materials</i> , 2013, 25, 2497-2504.	11.1	101
44	Directing Matter: Toward Atomic-Scale 3D Nanofabrication. <i>ACS Nano</i> , 2016, 10, 5600-5618.	7.3	99
45	Mixed electrochemical ferroelectric states in nanoscale ferroelectrics. <i>Nature Physics</i> , 2017, 13, 812-818.	6.5	98
46	Temperature dependence of polarization and charge dynamics on the BaTiO ₃ (100) surface by scanning probe microscopy. <i>Applied Physics Letters</i> , 2001, 78, 1116-1118.	1.5	97
47	Decoupling Electrochemical Reaction and Diffusion Processes in Ionically-Conductive Solids on the Nanometer Scale. <i>ACS Nano</i> , 2010, 4, 7349-7357.	7.3	96
48	Domain wall conduction in multiaxial ferroelectrics. <i>Physical Review B</i> , 2012, 85, .	1.1	95
49	Electromechanical imaging of biological systems with sub-10nm resolution. <i>Applied Physics Letters</i> , 2005, 87, 053901.	1.5	93
50	Resolution-function theory in piezoresponse force microscopy: Wall imaging, spectroscopy, and lateral resolution. <i>Physical Review B</i> , 2007, 75, .	1.1	93
51	Quantification of surface displacements and electromechanical phenomena via dynamic atomic force microscopy. <i>Nanotechnology</i> , 2016, 27, 425707.	1.3	92
52	A review of molecular beam epitaxy of ferroelectric BaTiO ₃ films on Si, Ge and GaAs substrates and their applications. <i>Science and Technology of Advanced Materials</i> , 2015, 16, 036005.	2.8	89
53	<i>In Situ</i> Observation of Oxygen Vacancy Dynamics and Ordering in the Epitaxial LaCoO ₃ System. <i>ACS Nano</i> , 2017, 11, 6942-6949.	7.3	89
54	Beyond Condensed Matter Physics on the Nanoscale: The Role of Ionic and Electrochemical Phenomena in the Physical Functionalities of Oxide Materials. <i>ACS Nano</i> , 2012, 6, 10423-10437.	7.3	88

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55	Electrochemical strain microscopy: Probing ionic and electrochemical phenomena in solids at the nanometer level. MRS Bulletin, 2012, 37, 651-658.	1.7	83
56	Direct Observation of Capacitor Switching Using Planar Electrodes. Advanced Functional Materials, 2010, 20, 3466-3475.	7.8	81
57	Microwave a.c. conductivity of domain walls in ferroelectric thin films. Nature Communications, 2016, 7, 11630.	5.8	81
58	High Resolution Electromechanical Imaging of Ferroelectric Materials in a Liquid Environment by Piezoresponse Force Microscopy. Physical Review Letters, 2006, 96, 237602.	2.9	80
59	Electromechanical detection in scanning probe microscopy: Tip models and materials contrast. Journal of Applied Physics, 2007, 102, .	1.1	80
60	Atomically Resolved Mapping of Polarization and Electric Fields Across Ferroelectric/Oxide Interfaces by Zr-contrast Imaging. Advanced Materials, 2011, 23, 2474-2479.	11.1	79
61	Nanoscale Control of Phase Variants in Strain-Engineered BiFeO ₃ . Nano Letters, 2011, 11, 3346-3354.	4.5	76
62	Imaging physical phenomena with local probes: From electrons to photons. Reviews of Modern Physics, 2012, 84, 1343-1381.	16.4	76
63	Ionically-Mediated Electromechanical Hysteresis in Transition Metal Oxides. ACS Nano, 2012, 6, 7026-7033.	7.3	75
64	Carrier density modulation in a germanium heterostructure by ferroelectric switching. Nature Communications, 2015, 6, 6067.	5.8	75
65	Conductivity of twin-domain-wall/surface junctions in ferroelastics: Interplay of deformation potential, octahedral rotations, improper ferroelectricity, and flexoelectric coupling. Physical Review B, 2012, 86, .	1.1	74
66	Piezoresponse force spectroscopy of ferroelectric-semiconductor materials. Journal of Applied Physics, 2007, 102, 114108.	1.1	73
67	Rapid multidimensional data acquisition in scanning probe microscopy applied to local polarization dynamics and voltage dependent contact mechanics. Applied Physics Letters, 2008, 93, .	1.5	73
68	Deep Data Analysis of Conductive Phenomena on Complex Oxide Interfaces: Physics from Data Mining. ACS Nano, 2014, 8, 6449-6457.	7.3	73
69	Materials contrast in piezoresponse force microscopy. Applied Physics Letters, 2006, 88, 232904.	1.5	71
70	Mapping Irreversible Electrochemical Processes on the Nanoscale: Ionic Phenomena in Li Ion Conductive Glass Ceramics. Nano Letters, 2011, 11, 4161-4167.	4.5	70
71	Towards nanoscale electrical measurements in liquid by advanced KPFM techniques: a review. Reports on Progress in Physics, 2018, 81, 086101.	8.1	70
72	Nonlinear Phenomena in Multiferroic Nanocapacitors: Joule Heating and Electromechanical Effects. ACS Nano, 2011, 5, 9104-9112.	7.3	69

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73	Mesoscopic Metal-Insulator Transition at Ferroelastic Domain Walls in VO ₂ . ACS Nano, 2010, 4, 4412-4419.	7.3	68
74	Locally Controlled Cu-Ion Transport in Layered Ferroelectric CuInP ₂ S ₆ . ACS Applied Materials & Interfaces, 2018, 10, 27188-27194.	4.0	68
75	Bioelectromechanical imaging by scanning probe microscopy: Galvani's experiment at the nanoscale. Ultramicroscopy, 2006, 106, 334-340.	0.8	66
76	Ferroelectric domain wall pinning at a bicrystal grain boundary in bismuth ferrite. Applied Physics Letters, 2008, 93, .	1.5	66
77	Size-effect in layered ferroelectric CuInP ₂ S ₆ . Applied Physics Letters, 2016, 109, .	1.5	66
78	Unraveling Deterministic Mesoscopic Polarization Switching Mechanisms: Spatially Resolved Studies of a Tilt Grain Boundary in Bismuth Ferrite. Advanced Functional Materials, 2009, 19, 2053-2063.	7.8	65
79	Probing Surface and Bulk Electrochemical Processes on the LaAlO ₃ /SrTiO ₃ Interface. ACS Nano, 2012, 6, 3841-3852.	7.3	65
80	Anisotropic conductivity of uncharged domain walls in BiFeO ₃ . Physical Review B, 2012, 86, .	1.1	64
81	Thermodynamics of nanodomain formation and breakdown in scanning probe microscopy: Landau-Ginzburg-Devonshire approach. Physical Review B, 2009, 80, .	1.1	63
82	Identification of phases, symmetries and defects through local crystallography. Nature Communications, 2015, 6, 7801.	5.8	63
83	Defect-Mediated Polarization Switching in Ferroelectrics and Related Materials: From Mesoscopic Mechanisms to Atomistic Control. Advanced Materials, 2010, 22, 314-322.	11.1	62
84	Direct Mapping of Ionic Transport in a Si Anode on the Nanoscale: Time Domain Electrochemical Strain Spectroscopy Study. ACS Nano, 2011, 5, 9682-9695.	7.3	61
85	Current and surface charge modified hysteresis loops in ferroelectric thin films. Journal of Applied Physics, 2015, 118, .	1.1	60
86	Surface effect on domain wall width in ferroelectrics. Journal of Applied Physics, 2009, 106, .	1.1	59
87	Local Detection of Activation Energy for Ionic Transport in Lithium Cobalt Oxide. Nano Letters, 2012, 12, 3399-3403.	4.5	58
88	Highly enhanced ferroelectricity in HfO ₂ -based ferroelectric thin film by light ion bombardment. Science, 2022, 376, 731-738.	6.0	58
89	Switching spectroscopy piezoresponse force microscopy of polycrystalline capacitor structures. Applied Physics Letters, 2009, 94, .	1.5	57
90	Watching domains grow: <i>in-situ</i> studies of polarization switching by combined scanning probe and scanning transmission electron microscopy. Journal of Applied Physics, 2011, 110, .	1.1	57

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91	Ferroionic states in ferroelectric thin films. <i>Physical Review B</i> , 2017, 95, .	1.1	57
92	Imaging mechanism of piezoresponse force microscopy in capacitor structures. <i>Applied Physics Letters</i> , 2008, 92, .	1.5	56
93	Interface dipole between two metallic oxides caused by localized oxygen vacancies. <i>Physical Review B</i> , 2012, 86, .	1.1	56
94	Probing Local Ionic Dynamics in Functional Oxides at the Nanoscale. <i>Nano Letters</i> , 2013, 13, 3455-3462.	4.5	55
95	Mechanical Control of Electroresistive Switching. <i>Nano Letters</i> , 2013, 13, 4068-4074.	4.5	55
96	The piezoresponse force microscopy of surface layers and thin films: Effective response and resolution function. <i>Journal of Applied Physics</i> , 2007, 102, 074105.	1.1	51
97	First-Order Reversal Curve Probing of Spatially Resolved Polarization Switching Dynamics in Ferroelectric Nanocapacitors. <i>ACS Nano</i> , 2012, 6, 491-500.	7.3	50
98	Dual harmonic Kelvin probe force microscopy at the graphene-liquid interface. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	50
99	Local bias-induced phase transitions. <i>Materials Today</i> , 2008, 11, 16-27.	8.3	49
100	Intrinsic Nucleation Mechanism and Disorder Effects in Polarization Switching on Ferroelectric Surfaces. <i>Physical Review Letters</i> , 2009, 102, 017601.	2.9	49
101	Structural phase transitions and electronic phenomena at 180-degree domain walls in rhombohedral BaTiO ₃ . <i>Physical Review B</i> , 2013, 87, .	1.1	49
102	Direct Probing of Charge Injection and Polarization-Controlled Ionic Mobility on Ferroelectric LiNbO ₃ Surfaces. <i>Advanced Materials</i> , 2014, 26, 958-963.	11.1	49
103	Automated and Autonomous Experiments in Electron and Scanning Probe Microscopy. <i>ACS Nano</i> , 2021, 15, 12604-12627.	7.3	49
104	Space- and Time-Resolved Mapping of Ionic Dynamic and Electroresistive Phenomena in Lateral Devices. <i>ACS Nano</i> , 2013, 7, 6806-6815.	7.3	48
105	A bridge for accelerating materials by design. <i>Npj Computational Materials</i> , 2015, 1, .	3.5	47
106	Giant negative electrostriction and dielectric tunability in a van der Waals layered ferroelectric. <i>Physical Review Materials</i> , 2019, 3, .	0.9	47
107	Oxygen-Induced Surface Reconstruction of SrRuO ₃ and Its Effect on the BaTiO ₃ Interface. <i>ACS Nano</i> , 2010, 4, 4190-4196.	7.3	44
108	Pressure-induced switching in ferroelectrics: Phase-field modeling, electrochemistry, flexoelectric effect, and bulk vacancy dynamics. <i>Physical Review B</i> , 2017, 96, .	1.1	44

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109	Nanoscale polarization profile across a 180° ferroelectric domain wall extracted by quantitative piezoelectric force microscopy. <i>Journal of Applied Physics</i> , 2008, 104, 074110.	1.1	43
110	Interaction of a 180° ferroelectric domain wall with a biased scanning probe microscopy tip: Effective wall geometry and thermodynamics in Ginzburg-Landau-Devonshire theory. <i>Physical Review B</i> , 2008, 78, .	1.1	43
111	Electromechanics on the Nanometer Scale: Emerging Phenomena, Devices, and Applications. <i>MRS Bulletin</i> , 2009, 34, 634-642.	1.7	43
112	Quantification of in-contact probe-sample electrostatic forces with dynamic atomic force microscopy. <i>Nanotechnology</i> , 2017, 28, 065704.	1.3	43
113	Deep neural networks for understanding noisy data applied to physical property extraction in scanning probe microscopy. <i>Npj Computational Materials</i> , 2019, 5, .	3.5	43
114	Domain Wall Motion Across Various Grain Boundaries in Ferroelectric Thin Films. <i>Journal of the American Ceramic Society</i> , 2015, 98, 1848-1857.	1.9	42
115	Extrinsic size effect in piezoresponse force microscopy of thin films. <i>Physical Review B</i> , 2007, 76, .	1.1	40
116	Electrical Modulation of the Local Conduction at Oxide Tubular Interfaces. <i>ACS Nano</i> , 2013, 7, 8627-8633.	7.3	40
117	Magnetostriction-polarization coupling in multiferroic Mn ₂ MnWO ₆ . <i>Nature Communications</i> , 2017, 8, 2037.	5.8	40
118	Defect-driven flexochemical coupling in thin ferroelectric films. <i>Physical Review B</i> , 2018, 97, .	1.1	39
119	Defect-induced asymmetry of local hysteresis loops on BiFeO ₃ surfaces. <i>Journal of Materials Science</i> , 2009, 44, 5095-5101.	1.7	38
120	Time-Resolved Electrical Scanning Probe Microscopy of Layered Perovskites Reveals Spatial Variations in Photoinduced Ionic and Electronic Carrier Motion. <i>ACS Nano</i> , 2019, 13, 2812-2821.	7.3	38
121	Probing Local Bias-Induced Transitions Using Photothermal Excitation Contact Resonance Atomic Force Microscopy and Voltage Spectroscopy. <i>ACS Nano</i> , 2015, 9, 1848-1857.	7.3	37
122	Fast Scanning Probe Microscopy via Machine Learning: Non-Rectangular Scans with Compressed Sensing and Gaussian Process Optimization. <i>Small</i> , 2020, 16, e2002878.	5.2	37
123	Experimental discovery of structure-property relationships in ferroelectric materials via active learning. <i>Nature Machine Intelligence</i> , 2022, 4, 341-350.	8.3	37
124	Multifrequency spectrum analysis using fully digital G Mode-Kelvin probe force microscopy. <i>Nanotechnology</i> , 2016, 27, 105706.	1.3	36
125	Reducing Time to Discovery: Materials and Molecular Modeling, Imaging, Informatics, and Integration. <i>ACS Nano</i> , 2021, 15, 3971-3995.	7.3	36
126	Paving the way to nanoionics: atomic origin of barriers for ionic transport through interfaces. <i>Scientific Reports</i> , 2015, 5, 17229.	1.6	35

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127	Labyrinthine domains in ferroelectric nanoparticles: Manifestation of a gradient-induced morphological transition. <i>Physical Review B</i> , 2018, 98, .	1.1	35
128	Effect of Doping on Surface Reactivity and Conduction Mechanism in Samarium-Doped Ceria Thin Films. <i>ACS Nano</i> , 2014, 8, 12494-12501.	7.3	34
129	Chemical State Evolution in Ferroelectric Films during Tip-Induced Polarization and Electroresistive Switching. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 29588-29593.	4.0	33
130	Quantitative determination of tip parameters in piezoresponse force microscopy. <i>Applied Physics Letters</i> , 2007, 90, 212905.	1.5	32
131	Local polarization switching in the presence of surface-charged defects: Microscopic mechanisms and piezoresponse force spectroscopy observations. <i>Physical Review B</i> , 2008, 78, .	1.1	32
132	Open-loop band excitation Kelvin probe force microscopy. <i>Nanotechnology</i> , 2012, 23, 125704.	1.3	32
133	Field enhancement of electronic conductance at ferroelectric domain walls. <i>Nature Communications</i> , 2017, 8, 1318.	5.8	32
134	Mitigating e-beam-induced hydrocarbon deposition on graphene for atomic-scale scanning transmission electron microscopy studies. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2018, 36, .	0.6	32
135	Toward Electrochemical Studies on the Nanometer and Atomic Scales: Progress, Challenges, and Opportunities. <i>ACS Nano</i> , 2019, 13, 9735-9780.	7.3	32
136	Mapping mesoscopic phase evolution during E-beam induced transformations via deep learning of atomically resolved images. <i>Npj Computational Materials</i> , 2018, 4, .	3.5	31
137	Piezoresponse amplitude and phase quantified for electromechanical characterization. <i>Journal of Applied Physics</i> , 2020, 128, .	1.1	31
138	Knowledge Extraction from Atomically Resolved Images. <i>ACS Nano</i> , 2017, 11, 10313-10320.	7.3	30
139	Hypothesis Learning in Automated Experiment: Application to Combinatorial Materials Libraries. <i>Advanced Materials</i> , 2022, 34, e2201345.	11.1	30
140	Finite size effects in ferroelectric-semiconductor thin films under open-circuit electric boundary conditions. <i>Journal of Applied Physics</i> , 2015, 117, .	1.1	29
141	Domain dynamics in piezoresponse force spectroscopy: Quantitative deconvolution and hysteresis loop fine structure. <i>Applied Physics Letters</i> , 2008, 92, 182909.	1.5	28
142	Intermittent contact mode piezoresponse force microscopy in a liquid environment. <i>Nanotechnology</i> , 2009, 20, 195701.	1.3	28
143	Full information acquisition in piezoresponse force microscopy. <i>Applied Physics Letters</i> , 2015, 107, 263102.	1.5	28
144	Acoustic Detection of Phase Transitions at the Nanoscale. <i>Advanced Functional Materials</i> , 2016, 26, 478-486.	7.8	28

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145	Single-atom fabrication with electron and ion beams: From surfaces and two-dimensional materials toward three-dimensional atom-by-atom assembly. <i>MRS Bulletin</i> , 2017, 42, 637-643.	1.7	28
146	Solid-state electrochemistry on the nanometer and atomic scales: the scanning probe microscopy approach. <i>Nanoscale</i> , 2016, 8, 13838-13858.	2.8	27
147	Dynamic behavior of CH ₃ NH ₃ PbI ₃ perovskite twin domains. <i>Applied Physics Letters</i> , 2018, 113, .	1.5	27
148	Energy dissipation measurements in frequency-modulated scanning probe microscopy. <i>Nanotechnology</i> , 2010, 21, 455705.	1.3	26
149	Origin of piezoelectric response under a biased scanning probe microscopy tip across a 180° ferroelectric domain wall. <i>Physical Review B</i> , 2012, 86, .	1.1	26
150	Multifrequency Imaging in the Intermittent Contact Mode of Atomic Force Microscopy: Beyond Phase Imaging. <i>Small</i> , 2012, 8, 1264-1269.	5.2	26
151	Exploring the Magnetoelectric Coupling at the Composite Interfaces of FE/FM/FE Heterostructures. <i>Scientific Reports</i> , 2018, 8, 17381.	1.6	26
152	Ensemble learning-iterative training machine learning for uncertainty quantification and automated experiment in atom-resolved microscopy. <i>Npj Computational Materials</i> , 2021, 7, .	3.5	26
153	Local probing of relaxation time distributions in ferroelectric polymer nanomesas: Time-resolved piezoresponse force spectroscopy and spectroscopic imaging. <i>Applied Physics Letters</i> , 2008, 92, 232903.	1.5	25
154	Atomic Mechanisms for the Si Atom Dynamics in Graphene: Chemical Transformations at the Edge and in the Bulk. <i>Advanced Functional Materials</i> , 2019, 29, 1904480.	7.8	25
155	Scaling and disorder analysis of local V-curves from ferroelectric thin films of lead zirconate titanate. <i>Nanotechnology</i> , 2011, 22, 254031.	1.3	24
156	Direct Probe of Interplay between Local Structure and Superconductivity in FeTe _{0.55} Se _{0.45} . <i>ACS Nano</i> , 2013, 7, 2634-2641.	7.3	24
157	Probing Local and Global Ferroelectric Phase Stability and Polarization Switching in Ordered Macroporous PZT. <i>Advanced Functional Materials</i> , 2011, 21, 941-947.	7.8	23
158	Constraining Data Mining with Physical Models: Voltage- and Oxygen Pressure-Dependent Transport in Multiferroic Nanostructures. <i>Nano Letters</i> , 2015, 15, 6650-6657.	4.5	23
159	Lost surface waves in nonpiezoelectric solids. <i>Physical Review B</i> , 2017, 96, .	1.1	23
160	Direct Probing of Polarization Charge at Nanoscale Level. <i>Advanced Materials</i> , 2018, 30, 1703675.	11.1	23
161	Polarization Dynamics in Ferroelectric Capacitors: Local Perspective on Emergent Collective Behavior and Memory Effects. <i>Advanced Functional Materials</i> , 2013, 23, 2490-2508.	7.8	22
162	Universality of Polarization Switching Dynamics in Ferroelectric Capacitors Revealed by 5D Piezoresponse Force Microscopy. <i>Advanced Functional Materials</i> , 2013, 23, 3971-3979.	7.8	22

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163	YCrWO ₆ : Polar and Magnetic Oxide with CaTa ₂ O ₆ -Related Structure. <i>Chemistry of Materials</i> , 2018, 30, 1045-1054.	3.2	22
164	Intrinsic structural instabilities of domain walls driven by gradient coupling: Meandering antiferrodistortive-ferroelectric domain walls in BiFeO ₃ . <i>Physical Review B</i> , 2019, 99, .	1.1	22
165	Toward Decoding the Relationship between Domain Structure and Functionality in Ferroelectrics via Hidden Latent Variables. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 1693-1703.	4.0	22
166	Effect of the intrinsic width on the piezoelectric force microscopy of a single ferroelectric domain wall. <i>Journal of Applied Physics</i> , 2008, 103, 124110.	1.1	21
167	Coupling of electrical and mechanical switching in nanoscale ferroelectrics. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	21
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