Sergei V. Kalinin

List of Publications by Year in Descending Order

Source: https://exaly.com/author-pdf/169541/sergei-v-kalinin-publications-by-year.pdf
Version: 2024-04-27

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.
The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

790 papers	32,877 citations	89 h-index	144 g-index
823 ext. papers	36,411 ext. citations	8.2 avg, IF	7.4 L-index

#	Paper	IF	Citations
790	Physics makes the difference: Bayesian optimization and active learning via augmented Gaussian process. *Machine Learning: Science and Technology*, **2022**, 3, 015022	5.1	2
789	Building an Integrated Ecosystem of Computational and Observational Facilities to Accelerate Scientific Discovery. *Communications in Computer and Information Science*, **2022**, 58-75	0.3	1
788	Machine learning in scanning transmission electron microscopy. *Nature Reviews Methods Primers*, **2022**, 2,		5
787	Hypothesis learning in automated experiment: application to combinatorial materials libraries.. *Advanced Materials*, **2022**, e2201345	24	3
786	Tunable Microwave Conductance of Nanodomains in Ferroelectric PbZr 0.2 Ti 0.8 O 3 Thin Film. *Advanced Electronic Materials*, **2022**, 8, 2100952	6.4	0
785	Automated Experiment in 4D-STEM: Exploring Emergent Physics and Structural Behaviors.. *ACS Nano*, **2022**,	16.7	3
784	Exploring leakage in dielectric films via automated experiments in scanning probe microscopy. *Applied Physics Letters*, **2022**, 120, 182903	3.4	1
783	Highly enhanced ferroelectricity in HfO-based ferroelectric thin film by light ion bombardment.. *Science*, **2022**, 376, 731-738	33.3	6
782	Defect detection in atomic-resolution images via unsupervised learning with translational invariance. *Npj Computational Materials*, **2021**, 7,	10.9	3
781	Tracking atomic structure evolution during directed electron beam induced Si-atom motion in graphene via deep machine learning. *Nanotechnology*, **2021**, 32, 035703	3.4	4
780	Multi-objective Bayesian optimization of ferroelectric materials with interfacial control for memory and energy storage applications. *Journal of Applied Physics*, **2021**, 130, 204102	2.5	0
779	High-Throughput Study of Antisolvents on the Stability of Multicomponent Metal Halide Perovskites through Robotics-Based Synthesis and Machine Learning Approaches. *Journal of the American Chemical Society*, **2021**, 143, 19945-19955	16.4	4
778	Sculpting the Plasmonic Responses of Nanoparticles by Directed Electron Beam Irradiation. *Small*, **2021**, e2105099	11	1
777	Deep Bayesian local crystallography. *Npj Computational Materials*, **2021**, 7,	10.9	5
776	Oxygen Vacancy Injection as a Pathway to Enhancing Electromechanical Response in Ferroelectrics. *Advanced Materials*, **2021**, e2106426	24	1
775	Disentangling ferroelectric domain wall geometries and pathways in dynamic piezoresponse force microscopy via unsupervised machine learning. *Nanotechnology*, **2021**, 33,	3.4	5
774	Machine learning for high-throughput experimental exploration of metal halide perovskites. *Joule*, **2021**,	27.8	7

773	Exploring the physics of cesium lead halide perovskite quantum dots via Bayesian inference of the photoluminescence spectra in automated experiment. *Nanophotonics*, **2021**, 10, 1977-1989	6.3	5
772	Effect of Surface Ionic Screening on Polarization Reversal and Phase Diagrams in Thin Antiferroelectric Films for Information and Energy Storage. *Physical Review Applied*, **2021**, 16,	4.3	1
771	Thermodynamics of order and randomness in dopant distributions inferred from atomically resolved imaging. *Npj Computational Materials*, **2021**, 7,	10.9	1
770	Investigating phase transitions from local crystallographic analysis based on statistical learning of atomic environments in 2D MoS2-ReS2. *Applied Physics Reviews*, **2021**, 8, 011409	17.3	1
769	Exploring order parameters and dynamic processes in disordered systems via variational autoencoders. *Science Advances*, **2021**, 7,	14.3	11
768	Disentangling Rotational Dynamics and Ordering Transitions in a System of Self-Organizing Protein Nanorods Rotationally Invariant Latent Representations. *ACS Nano*, **2021**, 15, 6471-6480	16.7	7
767	Separating Physically Distinct Mechanisms in Complex Infrared Plasmonic Nanostructures via Machine Learning Enhanced Electron Energy Loss Spectroscopy. *Advanced Optical Materials*, **2021**, 9, 2001808	8.1	7
766	Predictability of Localized Plasmonic Responses in Nanoparticle Assemblies. *Small*, **2021**, 17, e2100181	11	7
765	Correlation Between Corrugation-Induced Flexoelectric Polarization and Conductivity of Low-Dimensional Transition Metal Dichalcogenides. *Physical Review Applied*, **2021**, 15,	4.3	1
764	Role of Decomposition Product Ions in Hysteretic Behavior of Metal Halide Perovskite. *ACS Nano*, **2021**, 15, 9017-9026	16.7	3
763	Ferroelectric and Charge Transport Properties in Strain-Engineered Two-Dimensional Lead Iodide Perovskites. *Chemistry of Materials*, **2021**, 33, 4077-4088	9.6	2
762	Probing atomic-scale symmetry breaking by rotationally invariant machine learning of multidimensional electron scattering. *Npj Computational Materials*, **2021**, 7,	10.9	6
761	Exploring Responses of Contact Kelvin Probe Force Microscopy in Triple-Cation Double-Halide Perovskites. *Journal of Physical Chemistry C*, **2021**, 125, 12355-12365	3.8	0
760	Revealing the Chemical Bonding in Adatom Arrays via Machine Learning of Hyperspectral Scanning Tunneling Spectroscopy Data. *ACS Nano*, **2021**,	16.7	4
759	Bayesian Learning of Adatom Interactions from Atomically Resolved Imaging Data. *ACS Nano*, **2021**, 15, 9649-9657	16.7	2
758	Ferroic Halide Perovskite Optoelectronics. *Advanced Functional Materials*, **2021**, 31, 2102793	15.6	6
757	Exploring Transport Behavior in Hybrid Perovskites Solar Cells via Machine Learning Analysis of Environmental-Dependent Impedance Spectroscopy. *Advanced Science*, **2021**, 8, e2002510	13.6	7
756	Electron beam modification of plasmonic responses of nanoparticles. *Microscopy and Microanalysis*, **2021**, 27, 3066-3068	0.5	

755	Automated Experiment in SPM: Bayesian Optimization for efficient searching of parameter space to maximize functional response. *Microscopy and Microanalysis*, **2021**, 27, 470-471	0.5	1
754	Building an edge computing infrastructure for rapid multi-dimensional electron microscopy. *Microscopy and Microanalysis*, **2021**, 27, 56-57	0.5	0
753	Ensemble learning-iterative training machine learning for uncertainty quantification and automated experiment in atom-resolved microscopy. *Npj Computational Materials*, **2021**, 7,	10.9	4
752	Atomic-scale Feedback-controlled Electron Beam Fabrication of 2D Materials. *Microscopy and Microanalysis*, **2021**, 27, 3072-3073	0.5	
751	Autonomous Experiments in Scanning Probe Microscopy and Spectroscopy: Choosing Where to Explore Polarization Dynamics in Ferroelectrics. *ACS Nano*, **2021**,	16.7	8
750	Automated and Autonomous Experiments in Electron and Scanning Probe Microscopy. *ACS Nano*, **2021**,	16.7	11
749	Automatic detection of crystallographic defects in STEM images by unsupervised learning with translational invariance. *Microscopy and Microanalysis*, **2021**, 27, 1460-1462	0.5	1
748	Ferroelastic Nanodomain-mediated Mechanical Switching of Ferroelectricity in Thick Epitaxial Films. *Nano Letters*, **2021**, 21, 445-452	11.5	2
747	Probing potential energy landscapes via electron-beam-induced single atom dynamics. *Acta Materialia*, **2021**, 203, 116508	8.4	2
746	Direct Observation of Photoinduced Ion Migration in Lead Halide Perovskites. *Advanced Functional Materials*, **2021**, 31, 2008777	15.6	17
745	Quantifying the Dynamics of Protein Self-Organization Using Deep Learning Analysis of Atomic Force Microscopy Data. *Nano Letters*, **2021**, 21, 158-165	11.5	7
744	Towards data-driven next-generation transmission electron microscopy. *Nature Materials*, **2021**, 20, 274-279	27	48
743	Alignment of Au nanorods along designed protein nanofibers studied with automated image analysis. *Soft Matter*, **2021**, 17, 6109-6115	3.6	3
742	Toward Decoding the Relationship between Domain Structure and Functionality in Ferroelectrics via Hidden Latent Variables. *ACS Applied Materials & Interfaces*, **2021**, 13, 1693-1703	9.5	14
741	Off-the-shelf deep learning is not enough, and requires parsimony, Bayesianity, and causality. *Npj Computational Materials*, **2021**, 7,	10.9	4
740	Reducing Time to Discovery: Materials and Molecular Modeling, Imaging, Informatics, and Integration. *ACS Nano*, **2021**, 15, 3971-3995	16.7	11
739	Computational scanning tunneling microscope image database. *Scientific Data*, **2021**, 8, 57	8.2	4
738	Predictability as a probe of manifest and latent physics: The case of atomic scale structural, chemical, and polarization behaviors in multiferroic Sm-doped BiFeO3. *Applied Physics Reviews*, **2021**, 8, 011403	17.3	2

737	A combined theoretical and experimental study of the phase coexistence and morphotropic boundaries in ferroelectric-antiferroelectric-antiferrodistortive multiferroics. *Acta Materialia*, **2021**, 213, 116939	8.4	1
736	Propagation of priors for more accurate and efficient spectroscopic functional fits and their application to ferroelectric hysteresis. *Machine Learning: Science and Technology*, **2021**, 2, 045002	5.1	0
735	Direct mapping of polarization fields from STEM images: A Deep Learning based exploration of ferroelectrics. *Microscopy and Microanalysis*, **2021**, 27, 2990-2992	0.5	
734	Electron Beam Control of Dopants in 2D and 3D Materials. *Microscopy and Microanalysis*, **2021**, 27, 2150-2153	0.5	
733	Stress-induced phase transitions in nanoscale CuInP2S6. *Physical Review B*, **2021**, 104,	3.3	1
732	Deep learning ferroelectric polarization distributions from STEM data via with and without atom finding. *Npj Computational Materials*, **2021**, 7,	10.9	1
731	Disentangling Ferroelectric Wall Dynamics and Identification of Pinning Mechanisms via Deep Learning. *Advanced Materials*, **2021**, 33, e2103680	24	7
730	Gaussian process analysis of electron energy loss spectroscopy data: multivariate reconstruction and kernel control. *Npj Computational Materials*, **2021**, 7,	10.9	2
729	Probing polarization dynamics at specific domain configurations: Computer-vision based automated experiment in piezoresponse force microscopy. *Applied Physics Letters*, **2021**, 119, 132902	3.4	3
728	Probing Metastable Domain Dynamics Automated Experimentation in Piezoresponse Force Microscopy. *ACS Nano*, **2021**, 15, 15096-15103	16.7	2
727	Identification and correction of temporal and spatial distortions in scanning transmission electron microscopy. *Ultramicroscopy*, **2021**, 229, 113337	3.1	2
726	Unraveling the hysteretic behavior at double cations-double halides perovskite - electrode interfaces. *Nano Energy*, **2021**, 89, 106428	17.1	3
725	Distilling nanoscale heterogeneity of amorphous silicon using tip-enhanced Raman spectroscopy (TERS) via multiresolution manifold learning. *Nature Communications*, **2021**, 12, 578	17.4	7
724	Piezoresponse amplitude and phase quantified for electromechanical characterization. *Journal of Applied Physics*, **2020**, 128, 171105	2.5	10
723	Phenomenological description of bright domain walls in ferroelectric-antiferroelectric layered chalcogenides. *Physical Review B*, **2020**, 102,	3.3	5
722	Accurately Imaging, Tracking and Moving Single Atoms. *Microscopy and Microanalysis*, **2020**, 26, 2556-2557	0.5	
721	Phase diagrams of single-layer two-dimensional transition metal dichalcogenides: Landau theory. *Physical Review B*, **2020**, 101,	3.3	5
720	Room temperature multiferroicity and magnetodielectric coupling in 0-3 composite thin films. *Journal of Applied Physics*, **2020**, 127, 194104	2.5	10

719	Reconstruction of the interatomic forces from dynamic scanning transmission electron microscopy data. *Journal of Applied Physics*, **2020**, 127, 224301	2.5	1
718	Direct matter disassembly via electron beam control: electron-beam-mediated catalytic etching of graphene by nanoparticles. *Nanotechnology*, **2020**, 31, 245303	3.4	3
717	Correlation of Spatiotemporal Dynamics of Polarization and Charge Transport in Blended Hybrid Organic-Inorganic Perovskites on Macro- and Nanoscales. *ACS Applied Materials & Interfaces*, **2020**, 12, 15380-15388	9.5	4
716	Alignment of Polarization against an Electric Field in van der Waals Ferroelectrics. *Physical Review Applied*, **2020**, 13,	4.3	15
715	Ordering with a twist. *Nature Nanotechnology*, **2020**, 15, 515-516	28.7	2
714	Guided search for desired functional responses via Bayesian optimization of generative model: Hysteresis loop shape engineering in ferroelectrics. *Journal of Applied Physics*, **2020**, 128, 024102	2.5	4
713	Reconstruction of effective potential from statistical analysis of dynamic trajectories. *AIP Advances*, **2020**, 10, 065034	1.5	2
712	Strain-polarization coupling mechanism of enhanced conductivity at the grain boundaries in BiFeO3thin films. *Applied Materials Today*, **2020**, 20, 100740	6.6	4
711	Exploration of Electrochemical Reactions at Organic□Inorganic Halide Perovskite Interfaces via Machine Learning in In Situ Time-of-Flight Secondary Ion Mass Spectrometry. *Advanced Functional Materials*, **2020**, 30, 2001995	15.6	15
710	Machine learning-based multidomain processing for texture-based image segmentation and analysis. *Applied Physics Letters*, **2020**, 116, 044103	3.4	12
709	High-Pressure, High-Temperature Synthesis and Characterization of Polar and Magnetic LuCrWO. *Inorganic Chemistry*, **2020**, 59, 3579-3584	5.1	3
708	Strain□Chemical Gradient and Polarization in Metal Halide Perovskites. *Advanced Electronic Materials*, **2020**, 6, 1901235	6.4	14
707	Electron-beam introduction of heteroatomic Pt□Si structures in graphene. *Carbon*, **2020**, 161, 750-757	10.4	13
706	Variable voltage electron microscopy: Toward atom-by-atom fabrication in 2D materials. *Ultramicroscopy*, **2020**, 211, 112949	3.1	11
705	Imaging mechanism for hyperspectral scanning probe microscopy via Gaussian process modelling. *Npj Computational Materials*, **2020**, 6,	10.9	9
704	Estimating Preisach Density via Subset Selection. *IEEE Access*, **2020**, 8, 61767-61774	3.5	1
703	Mesoscopic structure of mixed type domain walls in multiaxial ferroelectrics. *Physical Review Materials*, **2020**, 4,	3.2	2
702	Detection of defects in atomic-resolution images of materials using cycle analysis. *Advanced Structural and Chemical Imaging*, **2020**, 6,	3.9	10

701	Bayesian Microscopy: Model Selection for Extracting Weak Nonlinearities from Scanning Probe Microscopy Data. *Microscopy and Microanalysis*, **2020**, 26, 2126-2127	0.5	
700	Mesoscopic theory of defect ordering-disordering transitions in thin oxide films. *Scientific Reports*, **2020**, 10, 22377	4.9	
699	Exploration of lattice Hamiltonians for functional and structural discovery via Gaussian process-based exploration‐exploitation. *Journal of Applied Physics*, **2020**, 128, 164304	2.5	4
698	Reconstruction and uncertainty quantification of lattice Hamiltonian model parameters from observations of microscopic degrees of freedom. *Journal of Applied Physics*, **2020**, 128, 214103	2.5	1
697	Deep learning of interface structures from simulated 4D STEM data: cation intermixing vs. roughening. *Machine Learning: Science and Technology*, **2020**, 1, 04LT01	5.1	3
696	Possible electrochemical origin of ferroelectricity in HfO2 thin films. *Journal of Alloys and Compounds*, **2020**, 830, 153628	5.7	36
695	Tunable quadruple-well ferroelectric van der Waals crystals. *Nature Materials*, **2020**, 19, 43-48	27	61
694	Statistical learning of governing equations of dynamics from in-situ electron microscopy imaging data. *Materials and Design*, **2020**, 195, 108973	8.1	5
693	Chemical Robotics Enabled Exploration of Stability in Multicomponent Lead Halide Perovskites via Machine Learning. *ACS Energy Letters*, **2020**, 5, 3426-3436	20.1	24
692	Piezoelectric domain walls in van der Waals antiferroelectric CuInPSe. *Nature Communications*, **2020**, 11, 3623	17.4	20
691	The joint automated repository for various integrated simulations (JARVIS) for data-driven materials design. *Npj Computational Materials*, **2020**, 6,	10.9	51
690	Dynamic Manipulation in Piezoresponse Force Microscopy: Creating Nonequilibrium Phases with Large Electromechanical Response. *ACS Nano*, **2020**, 14, 10569-10577	16.7	7
689	Fast Scanning Probe Microscopy via Machine Learning: Non-Rectangular Scans with Compressed Sensing and Gaussian Process Optimization. *Small*, **2020**, 16, e2002878	11	19
688	Super-resolution and signal separation in contact Kelvin probe force microscopy of electrochemically active ferroelectric materials. *Journal of Applied Physics*, **2020**, 128, 055101	2.5	3
687	Exploring phase transitions and magnetoelectric coupling of epitaxial asymmetric multilayer heterostructures. *Journal of Materials Chemistry C*, **2020**, 8, 12113-12122	7.1	4
686	Melting of spatially modulated phases at domain wall/surface junctions in antiferrodistortive multiferroics. *Physical Review B*, **2020**, 102,	3.3	5
685	Tensor factorization for elucidating mechanisms of piezoresponse relaxation via dynamic Piezoresponse Force Spectroscopy. *Npj Computational Materials*, **2020**, 6,	10.9	1
684	Causal analysis of competing atomistic mechanisms in ferroelectric materials from high-resolution scanning transmission electron microscopy data. *Npj Computational Materials*, **2020**, 6,	10.9	10

683	Flexoinduced ferroelectricity in low-dimensional transition metal dichalcogenides. *Physical Review B*, **2020**, 102,	3.3	5
682	Induced ferroelectric phases in SrTiO by a nanocomposite approach. *Nanoscale*, **2020**, 12, 18193-18199	7.7	6
681	Hysteretic Ion Migration and Remanent Field in Metal Halide Perovskites. *Advanced Science*, **2020**, 7, 2001176	13.6	14
680	Bayesian inference in band excitation scanning probe microscopy for optimal dynamic model selection in imaging. *Journal of Applied Physics*, **2020**, 128, 054105	2.5	4
679	Operando Imaging of Ion Migration in Metal Halide Perovskites. *Microscopy and Microanalysis*, **2020**, 26, 2046-2048	0.5	
678	Exploring physics of ferroelectric domain walls via Bayesian analysis of atomically resolved STEM data. *Nature Communications*, **2020**, 11, 6361	17.4	7
677	Self-Assembled Room Temperature Multiferroic BiFeO3-LiFe5O8 Nanocomposites. *Advanced Functional Materials*, **2020**, 30, 1906849	15.6	10
676	Light-Ferroic Interaction in Hybrid OrganicInorganic Perovskites. *Advanced Optical Materials*, **2019**, 7, 1901451	8.1	20
675	A self-driving microscope and the Atomic Forge. *MRS Bulletin*, **2019**, 44, 669-670	3.2	9
674	Unsupervised Machine Learning to Distill Structural-Property Insights from 4D-STEM. *Microscopy and Microanalysis*, **2019**, 25, 12-13	0.5	
673	Structure retrieval from four-dimensional scanning transmission electron microscopy: Statistical analysis of potential pitfalls in high-dimensional data. *Physical Review E*, **2019**, 100, 023308	2.4	1
672	Competing phases in epitaxial vanadium dioxide at nanoscale. *APL Materials*, **2019**, 7, 081127	5.7	3
671	Building and exploring libraries of atomic defects in graphene: Scanning transmission electron and scanning tunneling microscopy study. *Science Advances*, **2019**, 5, eaaw8989	14.3	41
670	Towards Atomic Scale Quantum Structure Fabrication in 2D Materials. *Microscopy and Microanalysis*, **2019**, 25, 940-941	0.5	
669	Ferroelectric domain engineering of lithium niobate single crystal confined in glass. *MRS Communications*, **2019**, 9, 334-339	2.7	5
668	Materials informatics: From the atomic-level to the continuum. *Acta Materialia*, **2019**, 168, 473-510	8.4	64
667	Intrinsic structural instabilities of domain walls driven by gradient coupling: Meandering antiferrodistortive-ferroelectric domain walls in BiFeO3. *Physical Review B*, **2019**, 99,	3.3	18
666	Deep learning analysis of defect and phase evolution during electron beam-induced transformations in WS2. *Npj Computational Materials*, **2019**, 5,	10.9	74

665	Atom-by-atom fabrication with electron beams. *Nature Reviews Materials*, **2019**, 4, 497-507	73.3	42
664	Building a free-energy functional from atomically resolved imaging: Atomic-scale phenomena in La-doped BiFeO3. *Physical Review B*, **2019**, 99,	3.3	9
663	Application of pan-sharpening algorithm for correlative multimodal imaging using AFM-IR. *Npj Computational Materials*, **2019**, 5,	10.9	3
662	Deconvolving distribution of relaxation times, resistances and inductance from electrochemical impedance spectroscopy via statistical model selection: Exploiting structural-sparsity regularization and data-driven parameter tuning. *Electrochimica Acta*, **2019**, 313, 570-583	6.7	36
661	Polarization-dependent local conductivity and activation energy in KTiOPO4. *Applied Physics Letters* , **2019**, 114, 192901	3.4	3
660	Exact, approximate and asymptotic solutions of the Klein‐Gordon integral equation. *Journal of Engineering Mathematics*, **2019**, 115, 141-156	1.2	2
659	Deep neural networks for understanding noisy data applied to physical property extraction in scanning probe microscopy. *Npj Computational Materials*, **2019**, 5,	10.9	28
658	Environmental Gating and Galvanic Effects in Single Crystals of Organic-Inorganic Halide Perovskites. *ACS Applied Materials & Interfaces*, **2019**, 11, 14722-14733	9.5	10
657	Time-Resolved Electrical Scanning Probe Microscopy of Layered Perovskites Reveals Spatial Variations in Photoinduced Ionic and Electronic Carrier Motion. *ACS Nano*, **2019**, 13, 2812-2821	16.7	30
656	Spectral Map Reconstruction Using Pan-Sharpening Algorithm: Enhancing Chemical Imaging with AFM-IR. *Microscopy and Microanalysis*, **2019**, 25, 1024-1025	0.5	0
655	Multi-Model Imaging of Local Chemistry and Ferroic Properties of Hybrid Organic-Inorganic Perovskites. *Microscopy and Microanalysis*, **2019**, 25, 2076-2077	0.5	3
654	A STEM-based Path Towards Atomic-scale Silicon-based Devices. *Microscopy and Microanalysis*, **2019** , 25, 2290-2291	0.5	
653	Toward Electrochemical Studies on the Nanometer and Atomic Scales: Progress, Challenges, and Opportunities. *ACS Nano*, **2019**, 13, 9735-9780	16.7	18
652	Building ferroelectric from the bottom up: The machine learning analysis of the atomic-scale ferroelectric distortions. *Applied Physics Letters*, **2019**, 115, 052902	3.4	13
651	Statistical Physics-based Framework and Bayesian Inference for Model Selection and Uncertainty Quantification. *Microscopy and Microanalysis*, **2019**, 25, 130-131	0.5	2
650	Non-conventional mechanism of ferroelectric fatigue via cation migration. *Nature Communications*, **2019**, 10, 3064	17.4	16
649	Lab on a beam‐Big data and artificial intelligence in scanning transmission electron microscopy. *MRS Bulletin*, **2019**, 44, 565-575	3.2	15
648	Materials Science in the AI age: high-throughput library generation, machine learning and a pathway from correlations to the underpinning physics. *MRS Communications*, **2019**, 9, 821	2.7	56

647	Ferromagnetic-like behavior of BiLaFeO-KBr nanocomposites. *Scientific Reports*, **2019**, 9, 10417	4.9	7
646	Revealing ferroelectric switching character using deep recurrent neural networks. *Nature Communications*, **2019**, 10, 4809	17.4	21
645	Spatially Resolved Carrier Dynamics at MAPbBr Single Crystal-Electrode Interface. *ACS Applied Materials & Interfaces*, **2019**, 11, 41551-41560	9.5	13
644	Ferroic twin domains in metal halide perovskites. *MRS Advances*, **2019**, 4, 2817-2830	0.7	5
643	From Control of the Electron Beam to Control of Single Atoms. *Microscopy and Microanalysis*, **2019**, 25, 1678-1679	0.5	
642	The ORNL Lectures on Scanning Probe Microscopy, Part 1: Piezoresponse Force Microscopy and Spectroscopy of Ferroelectrics, Energy Materials, and Biological Systems. *Microscopy Today*, **2019**, 27, 12-16	0.4	
641	The ORNL Lectures on Scanning Probe Microscopy, Part 2: The Force Dimension: Electronic and Ionic Transport Measurements via Kelvin Probe Force Microscopy. *Microscopy Today*, **2019**, 27, 18-23	0.4	
640	Giant negative electrostriction and dielectric tunability in a van der Waals layered ferroelectric. *Physical Review Materials*, **2019**, 3,	3.2	25
639	Atomic Mechanisms for the Si Atom Dynamics in Graphene: Chemical Transformations at the Edge and in the Bulk. *Advanced Functional Materials*, **2019**, 29, 1904480	15.6	17
638	Reply to: On the ferroelectricity of CHNHPbI perovskites. *Nature Materials*, **2019**, 18, 1051-1053	27	21
637	Learning from Imperfections: Predicting Structure and Thermodynamics from Atomic Imaging of Fluctuations. *ACS Nano*, **2019**, 13, 718-727	16.7	19
636	Manifold learning of four-dimensional scanning transmission electron microscopy. *Npj Computational Materials*, **2019**, 5,	10.9	19
635	Nanoscale Transport Imaging of Active Lateral Devices: Static and Frequency Dependent Modes. *Springer Series in Surface Sciences*, **2018**, 251-329	0.4	3
634	Direct atomic fabrication and dopant positioning in Si using electron beams with active real-time image-based feedback. *Nanotechnology*, **2018**, 29, 255303	3.4	31
633	Reconstructing phase diagrams from local measurements via Gaussian processes: mapping the temperature-composition space to confidence. *Npj Computational Materials*, **2018**, 4,	10.9	11
632	Dynamic mechanical control of local vacancies in NiO thin films. *Nanotechnology*, **2018**, 29, 275709	3.4	7
631	Subtractive fabrication of ferroelectric thin films with precisely controlled thickness. *Nanotechnology*, **2018**, 29, 155302	3.4	6
630	Ultrafast current imaging by Bayesian inversion. *Nature Communications*, **2018**, 9, 513	17.4	13

629	Chemical Phenomena of Atomic Force Microscopy Scanning. *Analytical Chemistry*, **2018**, 90, 3475-3481	7.8	16
628	Photothermoelastic contrast in nanoscale infrared spectroscopy. *Applied Physics Letters*, **2018**, 112, 033105	3.4	6
627	Exploring Anomalous Polarization Dynamics in Organometallic Halide Perovskites. *Advanced Materials*, **2018**, 30, 1705298	24	38
626	Surface-screening mechanisms in ferroelectric thin films and their effect on polarization dynamics and domain structures. *Reports on Progress in Physics*, **2018**, 81, 036502	14.4	93
625	Mitigating e-beam-induced hydrocarbon deposition on graphene for atomic-scale scanning transmission electron microscopy studies. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2018**, 36, 011801	1.3	20
624	Defect-driven flexochemical coupling in thin ferroelectric films. *Physical Review B*, **2018**, 97,	3.3	31
623	YCrWO6: Polar and Magnetic Oxide with CaTa2O6-Related Structure. *Chemistry of Materials*, **2018**, 30, 1045-1054	9.6	14
622	Feature extraction via similarity search: application to atom finding and denoising in electron and scanning probe microscopy imaging. *Advanced Structural and Chemical Imaging*, **2018**, 4, 3	3.9	22
621	Nontrivial temperature behavior of the carrier concentration in graphene on ferroelectric substrate with domain walls. *Acta Materialia*, **2018**, 155, 302-317	8.4	12
620	Machine learning-enabled identification of material phase transitions based on experimental data: Exploring collective dynamics in ferroelectric relaxors. *Science Advances*, **2018**, 4, eaap8672	14.3	37
619	Data mining for better material synthesis: The case of pulsed laser deposition of complex oxides. *Journal of Applied Physics*, **2018**, 123, 115303	2.5	18
618	Dynamic Modes in Kelvin Probe Force Microscopy: Band Excitation and G-Mode. *Springer Series in Surface Sciences*, **2018**, 49-99	0.4	3
617	Surface Chemistry Controls Anomalous Ferroelectric Behavior in Lithium Niobate. *ACS Applied Materials & Interfaces*, **2018**, 10, 29153-29160	9.5	13
616	Labyrinthine domains in ferroelectric nanoparticles: Manifestation of a gradient-induced morphological transition. *Physical Review B*, **2018**, 98,	3.3	24
615	Locally Controlled Cu-Ion Transport in Layered Ferroelectric CuInPS. *ACS Applied Materials & Interfaces*, **2018**, 10, 27188-27194	9.5	35
614	Towards nanoscale electrical measurements in liquid by advanced KPFM techniques: a review. *Reports on Progress in Physics*, **2018**, 81, 086101	14.4	45
613	E-beam manipulation of Si atoms on graphene edges with an aberration-corrected scanning transmission electron microscope. *Nano Research*, **2018**, 11, 6217-6226	10	17
612	Deep data analysis via physically constrained linear unmixing: universal framework, domain examples, and a community-wide platform. *Advanced Structural and Chemical Imaging*, **2018**, 4, 6	3.9	27

611	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	0.5	
610	Automated Atom-by-Atom Assembly of Structures in Graphene: The Rise of STEM for Atomic Scale Control. *Microscopy and Microanalysis*, **2018**, 24, 1594-1595	0.5	
609	Theory-assisted determination of nano-rippling and impurities in atomic resolution images of angle-mismatched bilayer graphene. *2D Materials*, **2018**, 5, 041008	5.9	3
608	Building Structures Atom by Atom via Electron Beam Manipulation. *Small*, **2018**, 14, e1801771	11	55
607	Chemical nature of ferroelastic twin domains in CHNHPbI perovskite. *Nature Materials*, **2018**, 17, 1013-1019	27	114
606	Dynamic behavior of CH3NH3PbI3 perovskite twin domains. *Applied Physics Letters*, **2018**, 113, 072102	3.4	26
605	Time resolved surface photovoltage measurements using a big data capture approach to KPFM. *Nanotechnology*, **2018**, 29, 445703	3.4	26
604	Nanoscale Control of Oxygen Defects and Metal-Insulator Transition in Epitaxial Vanadium Dioxides. *ACS Nano*, **2018**, 12, 7159-7166	16.7	31
603	Graphene milling dynamics during helium ion beam irradiation. *Carbon*, **2018**, 138, 277-282	10.4	13
602	Feel the dielectric force. *Science*, **2018**, 360, 1302	33.3	11
601	Giant thermally-enhanced electrostriction and polar surface phase in La2Mo2O9 oxygen ion conductors. *Physical Review Materials*, **2018**, 2,	3.2	6
600	Electronic switching by metastable polarization states in BiFeO3 thin films. *Physical Review Materials*, **2018**, 2,	3.2	4
599	Surface reconstructions and modified surface states in La1-xCaxMnO3. *Physical Review Materials*, **2018**, 2,	3.2	7
598	Interaction between a punch and an arbitrary crack or inclusion in a transversely isotropic half-space. *Zeitschrift Fur Angewandte Mathematik Und Physik*, **2018**, 69, 1	1.6	3
597	Direct Probing of Polarization Charge at Nanoscale Level. *Advanced Materials*, **2018**, 30, 1703675	24	18
596	Graphene Defect Editing, Deposition, and Growth via E-Beam-Induced Organic Reactions in Aberration Corrected STEM. *Microscopy and Microanalysis*, **2018**, 24, 1994-1995	0.5	1
595	Multimodal Chemical and Functional Imaging of Nanoscale Transformations Away from Equilibrium. *Microscopy and Microanalysis*, **2018**, 24, 1042-1043	0.5	
594	167-PFlops Deep Learning for Electron Microscopy: From Learning Physics to Atomic Manipulation **2018**,		15

593	Understanding Electric Double-Layer Gating Based on Ionic Liquids: from Nanoscale to Macroscale. *ACS Applied Materials & Interfaces*, **2018**, 10, 43211-43218	9.5	16
592	Correlated Materials Characterization via Multimodal Chemical and Functional Imaging. *ACS Nano*, **2018**, 12, 11798-11818	16.7	19
591	Exploring the Magnetoelectric Coupling at the Composite Interfaces of FE/FM/FE Heterostructures. *Scientific Reports*, **2018**, 8, 17381	4.9	17
590	Decoupling Mesoscale Functional Response in PLZT across the Ferroelectric-Relaxor Phase Transition with Contact Kelvin Probe Force Microscopy and Machine Learning. *ACS Applied Materials & Interfaces*, **2018**, 10, 42674-42680	9.5	6
589	Towards Atomic-Scale Fabrication in Silicon. *Microscopy and Microanalysis*, **2018**, 24, 158-159	0.5	
588	Compressed Sensing of Scanning Transmission Electron Microscopy (STEM) With Nonrectangular Scans. *Microscopy and Microanalysis*, **2018**, 24, 623-633	0.5	22
587	Deep Data Analytics in Structural and Functional Imaging of Nanoscale Materials. *Springer Series in Materials Science*, **2018**, 103-128	0.9	3
586	Nanoscale Electrochemical Phenomena of Polarization Switching in Ferroelectrics. *ACS Applied Materials & Interfaces*, **2018**, 10, 38217-38222	9.5	12
585	Ferroelectricity induced by oxygen vacancies in relaxors with perovskite structure. *Physical Review B*, **2018**, 98,	3.3	24
584	Giant resistive switching in mixed phase BiFeOvia phase population control. *Nanoscale*, **2018**, 10, 17629-17637	7.7	11
583	Control of polarization reversal temperature behavior by surface screening in thin ferroelectric films. *Acta Materialia*, **2018**, 160, 57-71	8.4	13
582	Elasticity Modulation Due to Polarization Reversal and Ionic Motion in the Ferroelectric Superionic Conductor KTiOPO. *ACS Applied Materials & Interfaces*, **2018**, 10, 32298-32303	9.5	8
581	Machine Detection of Enhanced Electromechanical Energy Conversion in PbZr Ti O Thin Films. *Advanced Materials*, **2018**, 30, e1800701	24	14
580	High-veracity functional imaging in scanning probe microscopy via Graph-Bootstrapping. *Nature Communications*, **2018**, 9, 2428	17.4	11
579	Mapping mesoscopic phase evolution during E-beam induced transformations via deep learning of atomically resolved images. *Npj Computational Materials*, **2018**, 4,	10.9	24
578	Localised nanoscale resistive switching in GaP thin films with low power consumption. *Journal of Materials Chemistry C*, **2017**, 5, 2153-2159	7.1	5
577	Effects of Dopant Ionic Radius on Cerium Reduction in Epitaxial Cerium Oxide Thin Films. *Journal of Physical Chemistry C*, **2017**, 121, 8841-8849	3.8	36
576	Improved spatial resolution for spot sampling in thermal desorption atomic force microscopy - mass spectrometry via rapid heating functions. *Nanoscale*, **2017**, 9, 5708-5717	7.7	9

575	Mixed electrochemical–ferroelectric states in nanoscale ferroelectrics. *Nature Physics*, **2017**, 13, 812-818	16.2	72
574	Ferroelectric or non-ferroelectric: Why so many materials exhibit "ferroelectricity" on the nanoscale. *Applied Physics Reviews*, **2017**, 4, 021302	17.3	195
573	Piezoresponse of ferroelectric films in ferroionic states: Time and voltage dynamics. *Applied Physics Letters*, **2017**, 110, 182907	3.4	13
572	Emergent Low-Symmetry Phases and Large Property Enhancements in Ferroelectric KNbO Bulk Crystals. *Advanced Materials*, **2017**, 29, 1700530	24	21
571	Spatially Resolved Large Magnetization in Ultrathin BiFeO. *Advanced Materials*, **2017**, 29, 1700790	24	22
570	Semiconducting polymers: Probing the solid-liquid interface. *Nature Materials*, **2017**, 16, 704-705	27	2
569	Role of flexoelectric coupling in polarization rotations at the a-c domain walls in ferroelectric perovskites. *Applied Physics Letters*, **2017**, 110, 202903	3.4	8
568	Enhancing Ion Migration in Grain Boundaries of Hybrid Organic–Inorganic Perovskites by Chlorine. *Advanced Functional Materials*, **2017**, 27, 1700749	15.6	51
567	In Situ Observation of Oxygen Vacancy Dynamics and Ordering in the Epitaxial LaCoO System. *ACS Nano*, **2017**, 11, 6942-6949	16.7	70
566	Exploring Electro-Chemo-Mechanical Phenomena on the Nanoscale Using Scanning Probe Microscopy. *Kluwer International Series in Electronic Materials: Science and Technology*, **2017**, 137-160		
565	Direct Imaging of the Relaxation of Individual Ferroelectric Interfaces in a Tensile-Strained Film. *Advanced Electronic Materials*, **2017**, 3, 1600508	6.4	7
564	Precision controlled atomic resolution scanning transmission electron microscopy using spiral scan pathways. *Scientific Reports*, **2017**, 7, 43585	4.9	16
563	Quantification of in-contact probe-sample electrostatic forces with dynamic atomic force microscopy. *Nanotechnology*, **2017**, 28, 065704	3.4	37
562	Role of Electrical Double Layer Structure in Ionic Liquid Gated Devices. *ACS Applied Materials & Interfaces*, **2017**, 9, 40949-40958	9.5	20
561	Knowledge Extraction from Atomically Resolved Images. *ACS Nano*, **2017**, 11, 10313-10320	16.7	24
560	Electronic-Reconstruction-Enhanced Tunneling Conductance at Terrace Edges of Ultrathin Oxide Films. *Advanced Materials*, **2017**, 29, 1702001	24	6
559	A Framework to Learn Physics from Atomically Resolved Images. *Microscopy and Microanalysis*, **2017**, 23, 104-105	0.5	
558	p–n Junction Dynamics Induced in a Graphene Channel by Ferroelectric-Domain Motion in the Substrate. *Physical Review Applied*, **2017**, 8,	4.3	19

557	Placing single atoms in graphene with a scanning transmission electron microscope. *Applied Physics Letters*, **2017**, 111, 113104	3.4	87
556	Atom-by-atom fabrication by electron beam via induced phase transformations. *MRS Bulletin*, **2017**, 42, 653-659	3.2	16
555	Single-atom fabrication with electron and ion beams: From surfaces and two-dimensional materials toward three-dimensional atom-by-atom assembly. *MRS Bulletin*, **2017**, 42, 637-643	3.2	22
554	Consistent Integration of Experimental and Ab Initio Data into Effective Physical Models. *Journal of Chemical Theory and Computation*, **2017**, 13, 5179-5194	6.4	13
553	Controlled manipulation of oxygen vacancies using nanoscale flexoelectricity. *Nature Communications*, **2017**, 8, 615	17.4	70
552	Studies on dielectric, optical, magnetic, magnetic domain structure, and resistance switching characteristics of highly c-axis oriented NZFO thin films. *Journal of Applied Physics*, **2017**, 122, 033902	2.5	12
551	Full Information Acquisition in Scanning Probe Microscopy. *Microscopy Today*, **2017**, 25, 34-45	0.4	3
550	Nanoscale Probing of Elastic-Electronic Response to Vacancy Motion in NiO Nanocrystals. *ACS Nano* , **2017**, 11, 8387-8394	16.7	7
549	Improving superconductivity in BaFeAs-based crystals by cobalt clustering and electronic uniformity. *Scientific Reports*, **2017**, 7, 949	4.9	10
548	Tuning the polar states of ferroelectric films via surface charges and flexoelectricity. *Acta Materialia*, **2017**, 137, 85-92	8.4	40
547	Three-State Ferroelastic Switching and Large Electromechanical Responses in PbTiO Thin Films. *Advanced Materials*, **2017**, 29, 1702069	24	53
546	Learning surface molecular structures via machine vision. *Npj Computational Materials*, **2017**, 3,	10.9	60
545	Breaking the Time Barrier in Kelvin Probe Force Microscopy: Fast Free Force Reconstruction Using the G-Mode Platform. *ACS Nano*, **2017**, 11, 8717-8729	16.7	50
544	Breaking the Time Barrier in Kelvin Probe Force Microscopy: Fast Free Force Reconstruction Using the G-Mode Platform. *Microscopy and Microanalysis*, **2017**, 23, 2080-2081	0.5	
543	Automated Interpretation and Extraction of Topographic Information from Time of Flight Secondary Ion Mass Spectrometry Data. *Scientific Reports*, **2017**, 7, 17099	4.9	18
542	Magnetostriction-polarization coupling in multiferroic MnMnWO. *Nature Communications*, **2017**, 8, 2037	17.4	25
541	Multimodal Chemical and Functional Imaging of Nanoscale Transformations in Ferroelectric Thin Films. *Microscopy and Microanalysis*, **2017**, 23, 1620-1621	0.5	
540	Deep Learning of Atomically Resolved Scanning Transmission Electron Microscopy Images: Chemical Identification and Tracking Local Transformations. *ACS Nano*, **2017**, 11, 12742-12752	16.7	183

539	Effect of surface ionic screening on the polarization reversal scenario in ferroelectric thin films: Crossover from ferroionic to antiferroionic states. *Physical Review B*, **2017**, 96,	3.3	20
538	Pressure-induced switching in ferroelectrics: Phase-field modeling, electrochemistry, flexoelectric effect, and bulk vacancy dynamics. *Physical Review B*, **2017**, 96,	3.3	34
537	Decoding Apparent Ferroelectricity in Perovskite Nanofibers. *ACS Applied Materials & Interfaces*, **2017**, 9, 42131-42138	9.5	5
536	Quantification of flexoelectricity in PbTiO/SrTiO superlattice polar vortices using machine learning and phase-field modeling. *Nature Communications*, **2017**, 8, 1468	17.4	60
535	Field enhancement of electronic conductance at ferroelectric domain walls. *Nature Communications* , **2017**, 8, 1318	17.4	22
534	Lost surface waves in nonpiezoelectric solids. *Physical Review B*, **2017**, 96,	3.3	18
533	Ferroionic states in ferroelectric thin films. *Physical Review B*, **2017**, 95,	3.3	41
532	ToF-SIMS Investigations of Tip-Surface Chemical Interactions in Atomic Force Microscopy on a Combined AFM/ToF-SIMS Platform. *Microscopy and Microanalysis*, **2017**, 23, 2082-2083	0.5	
531	G-mode - Full Information Capture Applied to Scanning Probe Microscopy. *Microscopy and Microanalysis*, **2017**, 23, 184-185	0.5	
530	Flexoelectric Effect Impact on the Hysteretic Dynamics of the Local Electromechanical Response of Mixed Ionic-Electronic Conductors. *Ukrainian Journal of Physics*, **2017**, 62, 326-334	0.4	1
529	Dynamic scan control in STEM: spiral scans. *Advanced Structural and Chemical Imaging*, **2016**, 2,	3.9	41
528	Exploring Polarization Rotation Instabilities in Super-Tetragonal BiFeO3 Epitaxial Thin Films and Their Technological Implications. *Advanced Electronic Materials*, **2016**, 2, 1600307	6.4	9
527	Enhancing interfacial magnetization with a ferroelectric. *Physical Review B*, **2016**, 94,	3.3	29
526	Self-consistent theory of nanodomain formation on nonpolar surfaces of ferroelectrics. *Physical Review B*, **2016**, 93,	3.3	10
525	Electrochemical reactivity and proton transport mechanisms in nanostructured ceria. *Nanotechnology*, **2016**, 27, 345401	3.4	7
524	Fundamental aspects of electric double layer force-distance measurements at liquid-solid interfaces using atomic force microscopy. *Scientific Reports*, **2016**, 6, 32389	4.9	40
523	Full data acquisition in Kelvin Probe Force Microscopy: Mapping dynamic electric phenomena in real space. *Scientific Reports*, **2016**, 6, 30557	4.9	39
522	Data mining graphene: correlative analysis of structure and electronic degrees of freedom in graphenic monolayers with defects. *Nanotechnology*, **2016**, 27, 495703	3.4	13

521	Contradictory nature of Co doping in ferroelectric BaTiO3. *Physical Review B*, **2016**, 94,	3.3	7
520	Single-domain multiferroic BiFeO3 films. *Nature Communications*, **2016**, 7, 12712	17.4	74
519	Nanoforging Single Layer MoSe2 Through Defect Engineering with Focused Helium Ion Beams. *Scientific Reports*, **2016**, 6, 30481	4.9	55
518	Atomic intercalation to measure adhesion of graphene on graphite. *Nature Communications*, **2016**, 7, 13263	17.4	24
517	Flexocoupling impact on size effects of piezoresponse and conductance in mixed-type ferroelectric semiconductors under applied pressure. *Physical Review B*, **2016**, 94,	3.3	28
516	Combined Scanning Probe Microscopy and Confocal Raman Spectroscopy for Functional Imaging of the Layered Materials. *Microscopy and Microanalysis*, **2016**, 22, 218-219	0.5	1
515	Acoustic Detection of Phase Transitions at the Nanoscale. *Advanced Functional Materials*, **2016**, 26, 478-486	15.6	25
514	Nanoscale Elastic Changes in 2D Ti3C2Tx (MXene) Pseudocapacitive Electrodes. *Advanced Energy Materials*, **2016**, 6, 1502290	21.8	92
513	Growth Mode Transition in Complex Oxide Heteroepitaxy: Atomically Resolved Studies. *Crystal Growth and Design*, **2016**, 16, 2708-2716	3.5	12
512	Nanoparticle Shape Evolution and Proximity Effects During Tip-Induced Electrochemical Processes. *ACS Nano*, **2016**, 10, 663-71	16.7	11
511	Graphene engineering by neon ion beams. *Nanotechnology*, **2016**, 27, 125302	3.4	20
510	Multifrequency spectrum analysis using fully digital G Mode-Kelvin probe force microscopy. *Nanotechnology*, **2016**, 27, 105706	3.4	33
509	Seeing through Walls at the Nanoscale: Microwave Microscopy of Enclosed Objects and Processes in Liquids. *ACS Nano*, **2016**, 10, 3562-70	16.7	39
508	Highly mobile ferroelastic domain walls in compositionally graded ferroelectric thin films. *Nature Materials*, **2016**, 15, 549-56	27	85
507	Topological Defects in Ferroic Materials. *Springer Series in Materials Science*, **2016**, 181-197	0.9	1
506	Nanoscale mapping of heterogeneity of the polarization reversal in lead-free relaxor-ferroelectric ceramic composites. *Nanoscale*, **2016**, 8, 2168-76	7.7	25
505	Fire up the atom forge. *Nature*, **2016**, 539, 485-487	50.4	55
504	Piezoresponse Force Microscopy and Spectroscopy **2016**, 3252-3263		

503	Deep Data Mining in a Real Space: Application to Scanning Probe Microscopy Studies on a Parent State of a High Temperature Superconductor. *Microscopy and Microanalysis*, **2016**, 22, 1418-1419	0.5	
502	Local Crystallography for Quantitative Analysis of Atomically Resolved Images. *Microscopy and Microanalysis*, **2016**, 22, 948-949	0.5	
501	Phase determination from atomically resolved images: physics-constrained deep data analysis through an unmixing approach. *Microscopy and Microanalysis*, **2016**, 22, 1452-1453	0.5	
500	Atomic Level Structure-Property Relationship in a Spin-Orbit Mott insulator: Scanning Transmission Electron and Scanning Tunneling Microscopy Studies. *Microscopy and Microanalysis*, **2016**, 22, 908-909	0.5	
499	Local Probing of Ferroelectric and Ferroelastic Switching through Stress-Mediated Piezoelectric Spectroscopy. *Advanced Materials Interfaces*, **2016**, 3, 1500470	4.6	15
498	Nanosculpting of complex oxides by massive ionic transfer. *Nanotechnology*, **2016**, 27, 505703	3.4	1
497	Local coexistence of VO2 phases revealed by deep data analysis. *Scientific Reports*, **2016**, 6, 29216	4.9	6
496	Big, deep, and smart data from atomically resolved images: exploring the origins of materials functionality. *Microscopy and Microanalysis*, **2016**, 22, 1416-1417	0.5	
495	High Performance Computing Tools for Cross Correlation of Multi-Dimensional Data Sets Across Instrument Platforms. *Microscopy and Microanalysis*, **2016**, 22, 288-289	0.5	
494	Growth and In Situ Characterization of Oxide Epitaxial Heterostructures with Atomic Plane Precision. *Microscopy and Microanalysis*, **2016**, 22, 1504-1505	0.5	
493	Quantification of surface displacements and electromechanical phenomena via dynamic atomic force microscopy. *Nanotechnology*, **2016**, 27, 425707	3.4	80
492	Deep data mining in a real space: separation of intertwined electronic responses in a lightly doped BaFeAs. *Nanotechnology*, **2016**, 27, 475706	3.4	20
491	Analysis of citation networks as a new tool for scientific research. *MRS Bulletin*, **2016**, 41, 1009-1016	3.2	6
490	Piezoelectric response enhancement in the proximity of grain boundaries of relaxor-ferroelectric thin films. *Applied Physics Letters*, **2016**, 108, 242908	3.4	3
489	Atomic-scale observation of structural and electronic orders in the layered compound RuCl. *Nature Communications*, **2016**, 7, 13774	17.4	50
488	Size-effect in layered ferrielectric CuInP2S6. *Applied Physics Letters*, **2016**, 109, 172901	3.4	39
487	Rapid mapping of polarization switching through complete information acquisition. *Nature Communications*, **2016**, 7, 13290	17.4	15
486	Microwave a.c. conductivity of domain walls in ferroelectric thin films. *Nature Communications*, **2016**, 7, 11630	17.4	63

485	Phase-field modeling of chemical control of polarization stability and switching dynamics in ferroelectric thin films. *Physical Review B*, **2016**, 94,	3.3	17
484	Characterization of LiMn2O4 cathodes by electrochemical strain microscopy. *Applied Physics Letters* , **2016**, 108, 113106	3.4	20
483	Decoupling indirect topographic cross-talk in band excitation piezoresponse force microscopy imaging and spectroscopy. *Applied Physics Letters*, **2016**, 108, 252902	3.4	13
482	G-mode magnetic force microscopy: Separating magnetic and electrostatic interactions using big data analytics. *Applied Physics Letters*, **2016**, 108, 193103	3.4	21
481	Big Data Analytics for Scanning Transmission Electron Microscopy Ptychography. *Scientific Reports*, **2016**, 6, 26348	4.9	50
480	Correlation between piezoresponse nonlinearity and hysteresis in ferroelectric crystals at the nanoscale. *Applied Physics Letters*, **2016**, 108, 172905	3.4	2
479	Directing Matter: Toward Atomic-Scale 3D Nanofabrication. *ACS Nano*, **2016**, 10, 5600-18	16.7	76
478	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, 14613-21	9.5	33
477	Polarization Control via He-Ion Beam Induced Nanofabrication in Layered Ferroelectric Semiconductors. *ACS Applied Materials & Interfaces*, **2016**, 8, 7349-55	9.5	17
476	Solid-state electrochemistry on the nanometer and atomic scales: the scanning probe microscopy approach. *Nanoscale*, **2016**, 8, 13838-58	7.7	22
475	Imaging via complete cantilever dynamic detection: general dynamic mode imaging and spectroscopy in scanning probe microscopy. *Nanotechnology*, **2016**, 27, 414003	3.4	12
474	BEAM: A Computational Workflow System for Managing and Modeling Material Characterization Data in HPC Environments. *Procedia Computer Science*, **2016**, 80, 2276-2280	1.6	12
473	Big, Deep, and Smart Data in Scanning Probe Microscopy. *ACS Nano*, **2016**, 10, 9068-9086	16.7	79
472	Impact of Flexoelectric Effect on Electro-mechanics of Moderate Conductors **2016**, 265-283		1
471	Flexoelectricity Impact on the Domain Wall Structure and Polar Properties **2016**, 311-336		2
470	Chemical State Evolution in Ferroelectric Films during Tip-Induced Polarization and Electroresistive Switching. *ACS Applied Materials & Interfaces*, **2016**, 8, 29588-29593	9.5	31
469	Direct-write liquid phase transformations with a scanning transmission electron microscope. *Nanoscale*, **2016**, 8, 15581-8	7.7	21
468	Phases and Interfaces from Real Space Atomically Resolved Data: Physics-Based Deep Data Image Analysis. *Nano Letters*, **2016**, 16, 5574-81	11.5	26

467	Complete information acquisition in dynamic force microscopy. *Nature Communications*, **2015**, 6, 6550	17.4	44
466	Surface Control of Epitaxial Manganite Films via Oxygen Pressure. *ACS Nano*, **2015**, 9, 4316-27	16.7	26
465	Topological defects in electric double layers of ionic liquids at carbon interfaces. *Nano Energy*, **2015** , 15, 737-745	17.1	31
464	Ferroelectric switching by the grounded scanning probe microscopy tip. *Physical Review B*, **2015**, 91,	3.3	15
463	Bias assisted scanning probe microscopy direct write lithography enables local oxygen enrichment of lanthanum cuprates thin films. *Nanotechnology*, **2015**, 26, 325302	3.4	1
462	Identification of phases, symmetries and defects through local crystallography. *Nature Communications*, **2015**, 6, 7801	17.4	51
461	A review of molecular beam epitaxy of ferroelectric BaTiO films on Si, Ge and GaAs substrates and their applications. *Science and Technology of Advanced Materials*, **2015**, 16, 036005	7.1	67
460	Finite size effects in ferroelectric-semiconductor thin films under open-circuit electric boundary conditions. *Journal of Applied Physics*, **2015**, 117, 034102	2.5	24
459	Defective interfaces in yttrium-doped barium zirconate films and consequences on proton conduction. *Nano Letters*, **2015**, 15, 2343-9	11.5	20
458	CuInP□□Room Temperature Layered Ferroelectric. *Nano Letters*, **2015**, 15, 3808-14	11.5	184
457	Domain pinning near a single-grain boundary in tetragonal and rhombohedral lead zirconate titanate films. *Physical Review B*, **2015**, 91,	3.3	25
456	Domain Wall Motion Across Various Grain Boundaries in Ferroelectric Thin Films. *Journal of the American Ceramic Society*, **2015**, 98, 1848-1857	3.8	29
455	Quantitative 3D-KPFM imaging with simultaneous electrostatic force and force gradient detection. *Nanotechnology*, **2015**, 26, 175707	3.4	23
454	Big-deep-smart data in imaging for guiding materials design. *Nature Materials*, **2015**, 14, 973-80	27	219
453	Quantitative Description of Crystal Nucleation and Growth from in Situ Liquid Scanning Transmission Electron Microscopy. *ACS Nano*, **2015**, 9, 11784-91	16.7	36
452	Controlling the actuation properties of MXene paper electrodes upon cation intercalation. *Nano Energy*, **2015**, 17, 27-35	17.1	135
451	Band excitation Kelvin probe force microscopy utilizing photothermal excitation. *Applied Physics Letters*, **2015**, 106, 104102	3.4	14
450	Big data in reciprocal space: Sliding fast Fourier transforms for determining periodicity. *Applied Physics Letters*, **2015**, 106, 091601	3.4	29

449	Mesoscopic harmonic mapping of electromechanical response in a relaxor ferroelectric. *Applied Physics Letters*, **2015**, 106, 222901	3.4	8
448	Antisite defects in layered multiferroic CuCr(0.9)In(0.1)P2S6. *Nanoscale*, **2015**, 7, 18579-83	7.7	6
447	Strongly enhanced oxygen ion transport through samarium-doped CeO2 nanopillars in nanocomposite films. *Nature Communications*, **2015**, 6, 8588	17.4	116
446	Constraining Data Mining with Physical Models: Voltage- and Oxygen Pressure-Dependent Transport in Multiferroic Nanostructures. *Nano Letters*, **2015**, 15, 6650-7	11.5	23
445	Multiferroics: Focusing light on flexoelectricity. *Nature Nanotechnology*, **2015**, 10, 916-7	28.7	48
444	Giant elastic tunability in strained BiFeO3 near an electrically induced phase transition. *Nature Communications*, **2015**, 6, 8985	17.4	35
443	Quantitative Analysis of the Local Phase Transitions Induced by Laser Heating. *ACS Nano*, **2015**, 9, 12442-50	16.7	18
442	Symmetry breaking and electrical frustration during tip-induced polarization switching in the nonpolar cut of lithium niobate single crystals. *ACS Nano*, **2015**, 9, 769-77	16.7	50
441	Ion transport and softening in a polymerized ionic liquid. *Nanoscale*, **2015**, 7, 947-55	7.7	14
440	Patterning: Atomic-Level Sculpting of Crystalline Oxides: Toward Bulk Nanofabrication with Single Atomic Plane Precision (Small 44/2015). *Small*, **2015**, 11, 5854-5854	11	2
439	Flexocoupling impact on the generalized susceptibility and soft phonon modes in the ordered phase of ferroics. *Physical Review B*, **2015**, 92,	3.3	23
438	Paving the way to nanoionics: atomic origin of barriers for ionic transport through interfaces. *Scientific Reports*, **2015**, 5, 17229	4.9	31
437	Electroelastic fields in artificially created vortex cores in epitaxial BiFeO3 thin films. *Applied Physics Letters*, **2015**, 107, 052903	3.4	23
436	Intrinsic space charge layers and field enhancement in ferroelectric nanojunctions. *Applied Physics Letters*, **2015**, 107, 022903	3.4	3
435	Self-consistent modelling of electrochemical strain microscopy in mixed ionic-electronic conductors: Nonlinear and dynamic regimes. *Journal of Applied Physics*, **2015**, 118, 072015	2.5	13
434	Full information acquisition in piezoresponse force microscopy. *Applied Physics Letters*, **2015**, 107, 263102	3.4	26
433	Point force and point electric charge applied to the boundary of three-dimensional anisotropic piezoelectric solid. *Journal of Applied Physics*, **2015**, 118, 072009	2.5	2
432	A bridge for accelerating materials by design. *Npj Computational Materials*, **2015**, 1,	10.9	33

431	Current and surface charge modified hysteresis loops in ferroelectric thin films. *Journal of Applied Physics*, **2015**, 118, 072013	2.5	49
430	Multidimensional dynamic piezoresponse measurements: Unraveling local relaxation behavior in relaxor-ferroelectrics via big data. *Journal of Applied Physics*, **2015**, 118, 072003	2.5	15
429	Moving atomic-resolution imaging into the age of deep data. *Microscopy and Microanalysis*, **2015**, 21, 1607-1608	0.5	
428	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	0.5	
427	Coupling of electrical and mechanical switching in nanoscale ferroelectrics. *Applied Physics Letters*, **2015**, 107, 202905	3.4	18
426	Sub-nA spatially resolved conductivity profiling of surface and interface defects in ceria films. *APL Materials*, **2015**, 3, 036106	5.7	3
425	Thickness, humidity, and polarization dependent ferroelectric switching and conductivity in Mg doped lithium niobate. *Journal of Applied Physics*, **2015**, 118, 244103	2.5	16
424	Atomic-Level Sculpting of Crystalline Oxides: Toward Bulk Nanofabrication with Single Atomic Plane Precision. *Small*, **2015**, 11, 5895-900	11	53
423	Controlled Nanopatterning of a Polymerized Ionic Liquid in a Strong Electric Field. *Advanced Functional Materials*, **2015**, 25, 805-811	15.6	11
422	Quantitative Nanometer-Scale Mapping of Dielectric Tunability. *Advanced Materials Interfaces*, **2015**, 2, 1500088	4.6	6
421	Kelvin probe force microscopy in liquid using electrochemical force microscopy. *Beilstein Journal of Nanotechnology*, **2015**, 6, 201-14	3	28
420	Local Crystallography: Phases, Symmetries, and Defects from Bottom Up. *Microscopy and Microanalysis*, **2015**, 21, 2203-2204	0.5	1
419	Role of chalcogen vapor annealing in inducing bulk superconductivity in Fe1+yTe1⊠Sex. *Physical Review B*, **2015**, 91,	3.3	8
418	Data encoding based on the shape of the ferroelectric domains produced by using a scanning probe microscope tip. *Nanoscale*, **2015**, 7, 11040-7	7.7	11
417	Spatially Resolved Probing of Electrochemical Reactions via Energy Discovery Platforms. *Nano Letters*, **2015**, 15, 3669-76	11.5	22
416	Differentiating Ferroelectric and Nonferroelectric Electromechanical Effects with Scanning Probe Microscopy. *ACS Nano*, **2015**, 9, 6484-92	16.7	191
415	Atomic-scale electrochemistry on the surface of a manganite by scanning tunneling microscopy. *Applied Physics Letters*, **2015**, 106, 143107	3.4	12
414	Tip-induced domain growth on the non-polar cuts of lithium niobate single-crystals. *Applied Physics Letters*, **2015**, 106, 182902	3.4	32

413	Nanoscale lubrication of ionic surfaces controlled via a strong electric field. *Scientific Reports*, **2015**, 5, 8049	4.9	16
412	A-site stoichiometry and piezoelectric response in thin film PbZr1⊠TixO3. *Journal of Applied Physics*, **2015**, 117, 204104	2.5	12
411	Finite-size effects of hysteretic dynamics in multilayer graphene on a ferroelectric. *Physical Review B*, **2015**, 91,	3.3	17
410	Big data and deep data in scanning and electron microscopies: deriving functionality from multidimensional data sets. *Advanced Structural and Chemical Imaging*, **2015**, 1, 6	3.9	63
409	The Ehrlich-Schwoebel barrier on an oxide surface: a combined Monte-Carlo and in situ scanning tunneling microscopy approach. *Nanotechnology*, **2015**, 26, 455705	3.4	5
408	Electrocatalysis-induced elasticity modulation in a superionic proton conductor probed by band-excitation atomic force microscopy. *Nanoscale*, **2015**, 7, 20089-94	7.7	5
407	Composition- and pressure-induced ferroelectric to antiferroelectric phase transitions in Sm-doped BiFeO3 system. *Applied Physics Letters*, **2015**, 106, 012903	3.4	43
406	Probing local bias-induced transitions using photothermal excitation contact resonance atomic force microscopy and voltage spectroscopy. *ACS Nano*, **2015**, 9, 1848-57	16.7	35
405	Humidity effect on nanoscale electrochemistry in solid silver ion conductors and the dual nature of its locality. *Nano Letters*, **2015**, 15, 1062-9	11.5	24
404	Carrier density modulation in a germanium heterostructure by ferroelectric switching. *Nature Communications*, **2015**, 6, 6067	17.4	64
403	In situ examination of oxygen non-stoichiometry in La0.80Sr0.20CoO3⊡thin films at intermediate and low temperatures by x-ray diffraction. *Applied Physics Letters*, **2014**, 104, 161910	3.4	17
402	Electronic properties of isosymmetric phase boundaries in highly strained Ca-Doped BiFeO⊡ *Advanced Materials*, **2014**, 26, 4376-80	24	60
401	Probing charge screening dynamics and electrochemical processes at the solid-liquid interface with electrochemical force microscopy. *Nature Communications*, **2014**, 5, 3871	17.4	73
400	Intermittency, quasiperiodicity and chaos in probe-induced ferroelectric domain switching. *Nature Physics*, **2014**, 10, 59-66	16.2	116
399	Thermotropic phase boundaries in classic ferroelectrics. *Nature Communications*, **2014**, 5, 3172	17.4	105
398	Water-mediated electrochemical nano-writing on thin ceria films. *Nanotechnology*, **2014**, 25, 075701	3.4	11
397	Anomalous Photodeposition of Ag on Ferroelectric Surfaces with Below-Bandgap Excitation. *Advanced Optical Materials*, **2014**, 2, 292-299	8.1	3
396	Ferroelectric domain triggers the charge modulation in semiconductors (invited). *Journal of Applied Physics*, **2014**, 116, 066817	2.5	16

395	Ferroelectricity in Si-doped HfO2 revealed: a binary lead-free ferroelectric. *Advanced Materials*, **2014**, 26, 8198-202	24	126
394	Low temperature dependent ferroelectric resistive switching in epitaxial BiFeO3 films. *Applied Physics Letters*, **2014**, 104, 132904	3.4	24
393	Bond competition and phase evolution on the IrTe2 surface. *Nature Communications*, **2014**, 5, 5358	17.4	31
392	Dual harmonic Kelvin probe force microscopy at the graphene-liquid interface. *Applied Physics Letters*, **2014**, 104, 133103	3.4	42
391	Exploring local electrostatic effects with scanning probe microscopy: implications for piezoresponse force microscopy and triboelectricity. *ACS Nano*, **2014**, 8, 10229-36	16.7	110
390	Self-consistent modeling of electrochemical strain microscopy of solid electrolytes. *Nanotechnology*, **2014**, 25, 445701	3.4	21
389	Big-data reflection high energy electron diffraction analysis for understanding epitaxial film growth processes. *ACS Nano*, **2014**, 8, 10899-908	16.7	22
388	Direct observation of ferroelectric field effect and vacancy-controlled screening at the BiFeO3/LaxSr1-xMnO3 interface. *Nature Materials*, **2014**, 13, 1019-25	27	195
387	Ionic field effect and memristive phenomena in single-point ferroelectric domain switching. *Nature Communications*, **2014**, 5, 4545	17.4	41
386	Breaking the limits of structural and mechanical imaging of the heterogeneous structure of coal macerals. *Nanotechnology*, **2014**, 25, 435402	3.4	12
385	Deterministic arbitrary switching of polarization in a ferroelectric thin film. *Nature Communications*, **2014**, 5, 4971	17.4	31
384	Direct probing of charge injection and polarization-controlled ionic mobility on ferroelectric LiNbO(3) surfaces. *Advanced Materials*, **2014**, 26, 958-63	24	44
383	Band excitation in scanning probe microscopy: recognition and functional imaging. *Annual Review of Physical Chemistry*, **2014**, 65, 519-36	15.7	88
382	Deep data analysis of conductive phenomena on complex oxide interfaces: physics from data mining. *ACS Nano*, **2014**, 8, 6449-57	16.7	63
381	Mapping internal structure of coal by confocal micro-Raman spectroscopy and scanning microwave microscopy. *Fuel*, **2014**, 126, 32-37	7.1	30
380	Strain-Based In Situ Study of Anion and Cation Insertion into Porous Carbon Electrodes with Different Pore Sizes. *Advanced Energy Materials*, **2014**, 4, 1300683	21.8	31
379	Influence of a Single Grain Boundary on Domain Wall Motion in Ferroelectrics. *Advanced Functional Materials*, **2014**, 24, 1409-1417	15.6	57
378	Defect thermodynamics and kinetics in thin strained ferroelectric films: The interplay of possible mechanisms. *Physical Review B*, **2014**, 89,	3.3	25

377	Electrochemical strain microscopy of local electrochemical processes in solids: mechanism of imaging and spectroscopy in the diffusion limit. *Journal of Electroceramics*, **2014**, 32, 51-59	1.5	20
376	Electrochemistry at the Nanoscale: The Force Dimension. *Electrochemical Society Interface*, **2014**, 23, 53-59	3.6	7
375	Spatially-resolved mapping of history-dependent coupled electrochemical and electronical behaviors of electroresistive NiO. *Scientific Reports*, **2014**, 4, 6725	4.9	10
374	Research Update: Spatially resolved mapping of electronic structure on atomic level by multivariate statistical analysis. *APL Materials*, **2014**, 2, 120701	5.7	10
373	Microscopy: Hasten high resolution. *Nature*, **2014**, 515, 487-8	50.4	17
372	Effect of doping on surface reactivity and conduction mechanism in samarium-doped ceria thin films. *ACS Nano*, **2014**, 8, 12494-501	16.7	29
371	Chemically induced Jahn-Teller ordering on manganite surfaces. *Nature Communications*, **2014**, 5, 4528	17.4	22
370	Impact of different dopants on the switching properties of ferroelectric hafniumoxide. *Japanese Journal of Applied Physics*, **2014**, 53, 08LE02	1.4	240
369	Humidity effects on tip-induced polarization switching in lithium niobate. *Applied Physics Letters*, **2014**, 104, 092908	3.4	58
368	Second harmonic detection in the electrochemical strain microscopy of Ag-ion conducting glass. *Applied Physics Letters*, **2014**, 105, 193106	3.4	9
367	Reply to Comment on Origin of piezoelectric response under a biased scanning probe microscopy tip across a 180 ferroelectric domain wall *Physical Review B*, **2014**, 89,	3.3	3
366	Electrostrictive and electrostatic responses in contact mode voltage modulated scanning probe microscopies. *Applied Physics Letters*, **2014**, 104, 232901	3.4	37
365	Controlled mechnical modification of manganite surface with nanoscale resolution. *Nanotechnology*, **2014**, 25, 475302	3.4	8
364	Preface to Special Topic: Piezoresponse force microscopy and nanoscale phenomena in polar materials. *Journal of Applied Physics*, **2014**, 116, 066701	2.5	1
363	Extracting physics through deep data analysis. *Materials Today*, **2014**, 17, 416-417	21.8	3
362	Nonlinear space charge dynamics in mixed ionic-electronic conductors: Resistive switching and ferroelectric-like hysteresis of electromechanical response. *Journal of Applied Physics*, **2014**, 116, 066808	2.5	24
361	Effect of silver doping on the surface of La5/8Ca3/8MnO3 epitaxial films. *Applied Physics Letters*, **2014**, 105, 101602	3.4	6
360	Tuning Susceptibility via Misfit Strain in Relaxed Morphotropic Phase Boundary PbZr1-xTixO3 Epitaxial Thin Films. *Advanced Materials Interfaces*, **2014**, 1, 1400098	4.6	11

359	Fundamental limitation to the magnitude of piezoelectric response of <001>pc textured K0.5Na0.5NbO3 ceramic. *Applied Physics Letters*, **2014**, 104, 172902	3.4	24
358	Interrelation between Structure Magnetic Properties in La0.5Sr0.5CoO3. *Advanced Materials Interfaces*, **2014**, 1, 1400203	4.6	18
357	Space- and time-resolved mapping of ionic dynamic and electroresistive phenomena in lateral devices. *ACS Nano*, **2013**, 7, 6806-15	16.7	38
356	Probing local ionic dynamics in functional oxides at the nanoscale. *Nano Letters*, **2013**, 13, 3455-62	11.5	49
355	Toward quantitative electrochemical measurements on the nanoscale by scanning probe microscopy: environmental and current spreading effects. *ACS Nano*, **2013**, 7, 8175-82	16.7	18
354	Oxygen control of atomic structure and physical properties of SrRuO3 surfaces. *ACS Nano*, **2013**, 7, 4403-13	16.7	18
353	Domain Wall Conduction and Polarization-Mediated Transport in Ferroelectrics. *Advanced Functional Materials*, **2013**, 23, 2592-2616	15.6	96
352	Mechanical control of electroresistive switching. *Nano Letters*, **2013**, 13, 4068-74	11.5	48
351	Nanoscale Probing of Voltage Activated Oxygen Reduction/Evolution Reactions in Nanopatterned (LaxSr1-x)CoO3- Cathodes. *Advanced Energy Materials*, **2013**, 3, 788-797	21.8	18
350	Switching of ferroelectric polarization in epitaxial BaTiO Films on silicon without a conducting bottom electrode. *Nature Nanotechnology*, **2013**, 8, 748-54	28.7	184
349	Open loop Kelvin probe force microscopy with single and multi-frequency excitation. *Nanotechnology*, **2013**, 24, 475702	3.4	53
348	Nanometer-scale mapping of irreversible electrochemical nucleation processes on solid Li-ion electrolytes. *Scientific Reports*, **2013**, 3, 1621	4.9	28
347	Universal emergence of spatially modulated structures induced by flexoantiferrodistortive coupling in multiferroics. *Physical Review B*, **2013**, 88,	3.3	32
346	Local crystallography analysis for atomically resolved scanning tunneling microscopy images. *Nanotechnology*, **2013**, 24, 415707	3.4	12
345	Frequency spectroscopy of irreversible electrochemical nucleation kinetics on the nanoscale. *Nanoscale*, **2013**, 5, 11964-70	7.7	11
344	Probing Bias-Dependent Electrochemical Gas Solid Reactions in (LaxSr1)CoO3 Cathode Materials. *Advanced Functional Materials*, **2013**, 23, 5027-5036	15.6	9
343	Effective piezoelectric response of twin walls in ferroelectrics. *Journal of Applied Physics*, **2013**, 113, 187202	2.2	16
342	Ferroelectric hafnium oxide: A CMOS-compatible and highly scalable approach to future ferroelectric memories **2013**,		185

341	Electrical modulation of the local conduction at oxide tubular interfaces. *ACS Nano*, **2013**, 7, 8627-33	16.7	39
340	Spatially resolved mapping of oxygen reduction/evolution reaction on solid-oxide fuel cell cathodes with sub-10 nm resolution. *ACS Nano*, **2013**, 7, 3808-14	16.7	24
339	Materials science. Functional ion defects in transition metal oxides. *Science*, **2013**, 341, 858-9	33.3	199
338	Towards the limit of ferroelectric nanostructures: switchable sub-10 nm nanoisland arrays. *Journal of Materials Chemistry C*, **2013**, 1, 5299	7.1	15
337	Epitaxial Bi5Ti3FeO15-CoFe2O4 pillar-matrix multiferroic nanostructures. *ACS Nano*, **2013**, 7, 11079-86	16.7	52
336	In situ tracking of the nanoscale expansion of porous carbon electrodes. *Energy and Environmental Science*, **2013**, 6, 225-231	35.4	57
335	Bias-dependent molecular-level structure of electrical double layer in ionic liquid on graphite. *Nano Letters*, **2013**, 13, 5954-60	11.5	117
334	Direct probe of interplay between local structure and superconductivity in FeTe□Se□. *ACS Nano*, **2013**, 7, 2634-41	16.7	23
333	Structural phase transitions and electronic phenomena at 180-degree domain walls in rhombohedral BaTiO3. *Physical Review B*, **2013**, 87,	3.3	43
332	Local probing of electrochemically induced negative differential resistance in TiO2 memristive materials. *Nanotechnology*, **2013**, 24, 085702	3.4	17
331	Interplay of octahedral tilts and polar order in BiFeO3 films. *Advanced Materials*, **2013**, 25, 2497-504	24	94
330	In Situ Observations and Tuning of Physical and Chemical Phenomena on the Surfaces of Strongly Correlated Oxides. *Advanced Functional Materials*, **2013**, 23, 2477-2489	15.6	10
329	Polarization Dynamics in Ferroelectric Capacitors: Local Perspective on Emergent Collective Behavior and Memory Effects. *Advanced Functional Materials*, **2013**, 23, 2490-2508	15.6	21
328	Variable temperature electrochemical strain microscopy of Sm-doped ceria. *Nanotechnology*, **2013**, 24, 145401	3.4	17
327	Universality of Polarization Switching Dynamics in Ferroelectric Capacitors Revealed by 5D Piezoresponse Force Microscopy. *Advanced Functional Materials*, **2013**, 23, 3971-3979	15.6	20
326	Mesoscopic mechanism of the domain wall interaction with elastic defects in uniaxial ferroelectrics. *Journal of Applied Physics*, **2013**, 113, 187203	2.5	7
325	Scanning Probe Microscopy for Energy Research. *World Scientific Series in Nanoscience and Nanotechnology*, **2013**,	0.1	11
324	Large resistive switching in ferroelectric BiFeO□nano-island based switchable diodes. *Advanced Materials*, **2013**, 25, 2339-43	24	163

323	Tunneling electroresistance induced by interfacial phase transitions in ultrathin oxide heterostructures. *Nano Letters*, **2013**, 13, 5837-43	11.5	106
322	Nanoscale Origins of Nonlinear Behavior in Ferroic Thin Films. *Advanced Functional Materials*, **2013**, 23, 81-90	15.6	18
321	Surface deformations as a necessary requirement for resistance switching at the surface of SrTiO3:N. *Nanotechnology*, **2013**, 24, 475701	3.4	3
320	Near-field microwave microscopy of high-κ oxides grown on graphene with an organic seeding layer. *Applied Physics Letters*, **2013**, 103, 243105	3.4	11
319	Higher order harmonic detection for exploring nonlinear interactions with nanoscale resolution. *Scientific Reports*, **2013**, 3, 2677	4.9	15
318	Scanning Near-Field Microwave Microscopy of VO2 and Chemical Vapor Deposition Graphene. *Advanced Functional Materials*, **2013**, 23, 2635-2645	15.6	20
317	Unraveling the origins of electromechanical response in mixed-phase bismuth ferrite. *Physical Review B*, **2013**, 88,	3.3	28
316	Influence of the interfacing with an electrically inhomogeneous bottom electrode on the ferroelectric properties of epitaxial PbTiO3. *Applied Physics Letters*, **2013**, 103, 192901	3.4	3
315	Preface to Special Topic: Selected Papers from the Piezoresponse Force Microscopy Workshop Series: Part of the Joint ISAF-ECAPD-PFM 2012 Conference. *Journal of Applied Physics*, **2013**, 113, 187101	2.5	2
314	Indentation of a punch with chemical or heat distribution at its base into transversely isotropic half-space: Application to local thermal and electrochemical probes. *Journal of Applied Physics*, **2013**, 113, 187201	2.5	11
313	Giant energy density in [001]-textured Pb(Mg1/3Nb2/3)O3-PbZrO3-PbTiO3 piezoelectric ceramics. *Applied Physics Letters*, **2013**, 102, 042903	3.4	71
312	In Situ Formation of Micron-Scale Li-Metal Anodes with High Cyclability. *ECS Electrochemistry Letters*, **2013**, 3, A4-A7		2
311	Correlative multimodal probing of ionically-mediated electromechanical phenomena in simple oxides. *Scientific Reports*, **2013**, 3, 2924	4.9	32
310	LOCAL PROBES IN THE NEXT DECADE OF ENERGY RESEARCH: BRIDGING MACROSCOPIC AND ATOMIC WORLDS. *World Scientific Series in Nanoscience and Nanotechnology*, **2013**, 3-35	0.1	1
309	Scanning Probe Microscopy in US Department of Energy Nanoscale Science Research Centers: Status, Perspectives, and Opportunities. *Advanced Functional Materials*, **2013**, 23, 2468-2476	15.6	2
308	Nanoscale mapping of oxygen vacancy kinetics in nanocrystalline Samarium doped ceria thin films. *Applied Physics Letters*, **2013**, 103, 171605	3.4	21
307	ELECTROCHEMICAL STRAIN MICROSCOPY OF LI-ION AND LI-AIR BATTERY MATERIALS. *World Scientific Series in Nanoscience and Nanotechnology*, **2013**, 393-454	0.1	2
306	Free-standing ferroelectric nanotubes processed via soft-template infiltration. *Advanced Materials*, **2012**, 24, 1160-5	24	36

305	Domain wall geometry controls conduction in ferroelectrics. *Nano Letters*, **2012**, 12, 5524-31	11.5	103
304	Impact of Free Charges on Polarization and Pyroelectricity in Antiferrodistortive Structures and Surfaces Induced by a Flexoelectric Effect. *Ferroelectrics*, **2012**, 438, 32-44	0.6	8
303	Beyond condensed matter physics on the nanoscale: the role of ionic and electrochemical phenomena in the physical functionalities of oxide materials. *ACS Nano*, **2012**, 6, 10423-37	16.7	83
302	Electrochemical strain microscopy: Probing ionic and electrochemical phenomena in solids at the nanometer level. *MRS Bulletin*, **2012**, 37, 651-658	3.2	77
301	Probing surface and bulk electrochemical processes on the LaAlO3-SrTiO3 interface. *ACS Nano*, **2012**, 6, 3841-52	16.7	62
300	Domain wall conduction in multiaxial ferroelectrics. *Physical Review B*, **2012**, 85,	3.3	85
299	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,	3.3	63
298	Roto-flexoelectric coupling impact on the phase diagrams and pyroelectricity of thin SrTiO3 films. *Journal of Applied Physics*, **2012**, 112, 064111	2.5	17
297	Ionically-mediated electromechanical hysteresis in transition metal oxides. *ACS Nano*, **2012**, 6, 7026-33	16.7	72
296	Local detection of activation energy for ionic transport in lithium cobalt oxide. *Nano Letters*, **2012**, 12, 3399-403	11.5	50
295	Tunable metallic conductance in ferroelectric nanodomains. *Nano Letters*, **2012**, 12, 209-13	11.5	131
294	First-order reversal curve probing of spatially resolved polarization switching dynamics in ferroelectric nanocapacitors. *ACS Nano*, **2012**, 6, 491-500	16.7	47
293	Probing local electromechanical effects in highly conductive electrolytes. *ACS Nano*, **2012**, 6, 10139-46	16.7	12
292	KPFM and PFM of Biological Systems. *Springer Series in Surface Sciences*, **2012**, 243-287	0.4	7
291	Effects of lateral and substrate constraint on the piezoresponse of ferroelectric nanostructures. *Applied Physics Letters*, **2012**, 101, 112901	3.4	7
290	Imaging physical phenomena with local probes: From electrons to photons. *Reviews of Modern Physics*, **2012**, 84, 1343-1381	40.5	70
289	Interface dipole between two metallic oxides caused by localized oxygen vacancies. *Physical Review B*, **2012**, 86,	3.3	50
288	Substrate clamping effects on irreversible domain wall dynamics in lead zirconate titanate thin films. *Physical Review Letters*, **2012**, 108, 157604	7.4	92

287	Challenges in Ceramic Science: A Report from the Workshop on Emerging Research Areas in Ceramic Science. *Journal of the American Ceramic Society*, **2012**, 95, 3699-3712	3.8	51
286	Cold-field switching in PVDF-TrFE ferroelectric polymer nanomesas. *Physical Review Letters*, **2012**, 108, 027603	7.4	15
285	Near-field microwave scanning probe imaging of conductivity inhomogeneities in CVD graphene. *Nanotechnology*, **2012**, 23, 385706	3.4	40
284	Switchable induced polarization in LaAlO3/SrTiO3 heterostructures. *Nano Letters*, **2012**, 12, 1765-71	11.5	159
283	Preface to Special Topic: Piezoresponse Force Microscopy and Nanoscale Phenomena in Polar Materials. *Journal of Applied Physics*, **2012**, 112, 051901	2.5	5
282	Doping-based stabilization of the M2 phase in free-standing VO2 nanostructures at room temperature. *Nano Letters*, **2012**, 12, 6198-205	11.5	120
281	High-frequency electromechanical imaging of ferroelectrics in a liquid environment. *ACS Nano*, **2012**, 6, 5559-65	16.7	15
280	Dynamic piezoresponse force microscopy: Spatially resolved probing of polarization dynamics in time and voltage domains. *Journal of Applied Physics*, **2012**, 112, 052021	2.5	28
279	Electromechanical and elastic probing of bacteria in a cell culture medium. *Nanotechnology*, **2012**, 23, 245705	3.4	9
278	Scanning Probe Microscopy – Forces and Currents in the Nanoscale World **2012**, 539-614		2
277	Probing oxygen vacancy concentration and homogeneity in solid-oxide fuel-cell cathode materials on the subunit-cell level. *Nature Materials*, **2012**, 11, 888-94	27	243
276	Exploring mesoscopic physics of vacancy-ordered systems through atomic scale observations of topological defects. *Physical Review Letters*, **2012**, 109, 065702	7.4	32
275	Controlling magnetoelectric coupling by nanoscale phase transformation in strain engineered bismuth ferrite. *Nanoscale*, **2012**, 4, 3175-83	7.7	34
274	Enhanced electric conductivity at ferroelectric vortex cores in BiFeO3. *Nature Physics*, **2012**, 8, 81-88	16.2	271
273	Temperature-composition phase diagrams for Ba1−xSrxFe2As2 (0≤x≤1) and superconducting Ba0.5Sr0.5(Fe1−yCoy)2As2 (0≤y≤0.141). *Physical Review B*, **2012**, 86,	3.3	8
272	Synthesis and electroplating of high resolution insulated carbon nanotube scanning probes for imaging in liquid solutions. *Nanotechnology*, **2012**, 23, 145301	3.4	10
271	Multifrequency imaging in the intermittent contact mode of atomic force microscopy: beyond phase imaging. *Small*, **2012**, 8, 1264-9	11	21
270	Open-loop band excitation Kelvin probe force microscopy. *Nanotechnology*, **2012**, 23, 125704	3.4	28

269	Ultrathin limit and dead-layer effects in local polarization switching of BiFeO3. *Physical Review B*, **2012**, 85,	3.3	60
268	Nanoscale Ferroelectricity in Crystalline Glycine. *Advanced Functional Materials*, **2012**, 22, 2996-3003	15.6	94
267	Nanoscale Insight Into Lead-Free BNT-BT-xKNN. *Advanced Functional Materials*, **2012**, 22, 4208-4215	15.6	198
266	Electrical control of multiferroic orderings in mixed-phase BiFeO films. *Advanced Materials*, **2012**, 24, 3070-5	24	49
265	Atomic-scale evolution of modulated phases at the ferroelectric-antiferroelectric morphotropic phase boundary controlled by flexoelectric interaction. *Nature Communications*, **2012**, 3, 775	17.4	135
264	Spectroscopic imaging in piezoresponse force microscopy: New opportunities for studying polarization dynamics in ferroelectrics and multiferroics. *MRS Communications*, **2012**, 2, 61-73	2.7	34
263	Electrochemical strain microscopy with blocking electrodes: The role of electromigration and diffusion. *Journal of Applied Physics*, **2012**, 111, 014114	2.5	21
262	Half-harmonic Kelvin probe force microscopy with transfer function correction. *Applied Physics Letters*, **2012**, 100, 063118	3.4	18
261	Surface polar states and pyroelectricity in ferroelastics induced by flexo-roto field. *Applied Physics Letters*, **2012**, 100, 142902	3.4	36
260	Anisotropic conductivity of uncharged domain walls in BiFeO3. *Physical Review B*, **2012**, 86,	3.3	53
259	Origin of piezoelectric response under a biased scanning probe microscopy tip across a 180? ferroelectric domain wall. *Physical Review B*, **2012**, 86,	3.3	23
258	Three-dimensional vector electrochemical strain microscopy. *Journal of Applied Physics*, **2012**, 112, 052020	2.5	24
257	Role of measurement voltage on hysteresis loop shape in Piezoresponse Force Microscopy. *Applied Physics Letters*, **2012**, 101, 192902	3.4	48
256	The partially reversible formation of Li-metal particles on a solid Li electrolyte: applications toward nanobatteries. *Nanotechnology*, **2012**, 23, 325402	3.4	27
255	Frequency dependent dynamical electromechanical response of mixed ionic-electronic conductors. *Journal of Applied Physics*, **2012**, 111, 014107	2.5	30
254	Electrochemical Strain Microscopy: Probing Electrochemical Transformations in Nanoscale Volumes. *Microscopy Today*, **2012**, 20, 10-15	0.4	11
253	Dynamic conductivity of ferroelectric domain walls in BiFeO *Nano Letters*, **2011**, 11, 1906-12	11.5	204
252	Band excitation in scanning probe microscopy: sines of change. *Journal Physics D: Applied Physics*, **2011**, 44, 464006	3	141

251	Designing piezoelectric films for micro electromechanical systems. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **2011**, 58, 1782-92	3.2	38
250	Nonlinear phenomena in multiferroic nanocapacitors: joule heating and electromechanical effects. *ACS Nano*, **2011**, 5, 9104-12	16.7	65
249	The role of electrochemical phenomena in scanning probe microscopy of ferroelectric thin films. *ACS Nano*, **2011**, 5, 5683-91	16.7	101
248	Measuring oxygen reduction/evolution reactions on the nanoscale. *Nature Chemistry*, **2011**, 3, 707-13	17.6	220
247	Compositional disorder, polar nanoregions and dipole dynamics in Pb(Mg1/3Nb2/3)O3-based relaxor ferroelectrics. *Zeitschrift F□ Kristallographie*, **2011**, 226, 99-107		42
246	Composition dependence of local piezoelectric nonlinearity in (0.3)Pb(Ni0.33Nb0.67)O3-(0.7)Pb(ZrxTi1□)O3 films. *Journal of Applied Physics*, **2011**, 110, 044109	2.5	9
245	Li-ion dynamics and reactivity on the nanoscale. *Materials Today*, **2011**, 14, 548-558	21.8	68
244	Very large capacitance enhancement in a two-dimensional electron system. *Science*, **2011**, 332, 825-8	33.3	150
243	Probing Local and Global Ferroelectric Phase Stability and Polarization Switching in Ordered Macroporous PZT. *Advanced Functional Materials*, **2011**, 21, 941-947	15.6	23
242	Surface Domain Structures and Mesoscopic Phase Transition in Relaxor Ferroelectrics. *Advanced Functional Materials*, **2011**, 21, 1977-1987	15.6	102
241	Ferroelectric Materials: Probing Local and Global Ferroelectric Phase Stability and Polarization Switching in Ordered Macroporous PZT (Adv. Funct. Mater. 5/2011). *Advanced Functional Materials*, **2011**, 21, 802-802	15.6	1
240	Reduced coercive field in BiFeO□ thin films through domain engineering. *Advanced Materials*, **2011**, 23, 669-72	24	68
239	Atomically resolved mapping of polarization and electric fields across ferroelectric/oxide interfaces by Z-contrast imaging. *Advanced Materials*, **2011**, 23, 2474-9	24	72
238	Mapping irreversible electrochemical processes on the nanoscale: ionic phenomena in li ion conductive glass ceramics. *Nano Letters*, **2011**, 11, 4161-7	11.5	65
237	Temperature-dependent phase transitions in zeptoliter volumes of a complex biological membrane. *Nanotechnology*, **2011**, 22, 055709	3.4	12
236	Scaling and disorder analysis of local I-V curves from ferroelectric thin films of lead zirconate titanate. *Nanotechnology*, **2011**, 22, 254031	3.4	23
235	Structural consequences of ferroelectric nanolithography. *Nano Letters*, **2011**, 11, 3080-4	11.5	21
234	Direct Mapping of Ion Diffusion Times on LiCoO2 Surfaces with Nanometer Resolution. *Journal of the Electrochemical Society*, **2011**, 158, A982	3.9	41

233	Exploring topological defects in epitaxial BiFeO3 thin films. *ACS Nano*, **2011**, 5, 879-87	16.7	102
232	Nanoscale control of phase variants in strain-engineered BiFeO. *Nano Letters*, **2011**, 11, 3346-54	11.5	70
231	Virtual Electrochemical Strain Microscopy of Polycrystalline LiCoO2 Films. *Journal of the Electrochemical Society*, **2011**, 158, A1083	3.9	38
230	Direct mapping of ionic transport in a Si anode on the nanoscale: time domain electrochemical strain spectroscopy study. *ACS Nano*, **2011**, 5, 9682-95	16.7	59
229	Electromechanical actuation and current-induced metastable states in suspended single-crystalline VO nanoplatelets. *Nano Letters*, **2011**, 11, 3065-73	11.5	47
228	Spatially resolved mapping of disorder type and distribution in random systems using artificial neural network recognition. *Physical Review B*, **2011**, 84,	3.3	17
227	Thermodynamics of electromechanically coupled mixed ionic-electronic conductors: Deformation potential, Vegard strains, and flexoelectric effect. *Physical Review B*, **2011**, 83,	3.3	102
226	Preface to special topic: Piezoresponse force microscopy and nanoscale phenomena in polar materials. *Journal of Applied Physics*, **2011**, 110, 051901	2.5	2
225	Landau-Ginzburg-Devonshire theory for electromechanical hysteresis loop formation in piezoresponse force microscopy of thin films. *Journal of Applied Physics*, **2011**, 110, 052011	2.5	20
224	Nanoscale electromechanics of paraelectric materials with mobile charges: Size effects and nonlinearity of electromechanical response of SrTiO3 films. *Physical Review B*, **2011**, 84,	3.3	64
223	Point force and generalized point source on the surface of semi-infinite transversely isotropic material. *Journal of Applied Physics*, **2011**, 110, 052020	2.5	13
222	Watching domains grow: In-situ studies of polarization switching by combined scanning probe and scanning transmission electron microscopy. *Journal of Applied Physics*, **2011**, 110, 052014	2.5	51
221	Mapping piezoelectric nonlinearity in the Rayleigh regime using band excitation piezoresponse force microscopy. *Applied Physics Letters*, **2011**, 98, 212901	3.4	22
220	Lattice-Symmetry-Driven Phase Competition in Vanadium Dioxide. *Materials Research Society Symposia Proceedings*, **2011**, 1292, 67		1
219	Real-space mapping of dynamic phenomena during hysteresis loop measurements: Dynamic switching spectroscopy piezoresponse force microscopy. *Applied Physics Letters*, **2011**, 98, 202903	3.4	21
218	Nanoscale mapping of ion diffusion in a lithium-ion battery cathode. *Nature Nanotechnology*, **2010**, 5, 749-54	28.7	460
217	Local probing of ionic diffusion by electrochemical strain microscopy: Spatial resolution and signal formation mechanisms. *Journal of Applied Physics*, **2010**, 108, 053712	2.5	131
216	Spatially resolved probing of Preisach density in polycrystalline ferroelectric thin films. *Journal of Applied Physics*, **2010**, 108, 084103	2.5	33

215	Preface to Special Topic: Invited Papers from the International Symposium on Piezoresponse Force Microscopy and Nanoscale Phenomena in Polar Materials, Aveiro, Portugal, 2009. *Journal of Applied Physics*, **2010**, 108, 041901	2.5	4
214	Domain wall conductivity in La-doped BiFeO3. *Physical Review Letters*, **2010**, 105, 197603	7.4	319
213	Observation of Dipole Stripes and Domain Structure by Transmission Electron Microscope for BiFeO3 Single Crystals. *Ferroelectrics*, **2010**, 410, 109-117	0.6	
212	Direct evidence of mesoscopic dynamic heterogeneities at the surfaces of ergodic ferroelectric relaxors. *Physical Review B*, **2010**, 81,	3.3	71
211	Correlated polarization switching in the proximity of a 180 domain wall. *Physical Review B*, **2010**, 82,	3.3	58
210	Finite size and intrinsic field effect on the polar-active properties of ferroelectric-semiconductor heterostructures. *Physical Review B*, **2010**, 81,	3.3	55
209	Electromechanical probing of ionic currents in energy storage materials. *Applied Physics Letters*, **2010**, 96, 222906	3.4	63
208	Collective dynamics underpins Rayleigh behavior in disordered polycrystalline ferroelectrics. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 7219-24	11.5	102
207	Mapping Disorder in Polycrystalline Relaxors: A Piezoresponse Force Microscopy Approach. *Materials*, **2010**, 3, 4860-4870	3.5	15
206	Local measurements of Preisach density in polycrystalline ferroelectric capacitors using piezoresponse force spectroscopy. *Applied Physics Letters*, **2010**, 96, 112906	3.4	24
205	Dynamic and Spectroscopic Modes and Multivariate Data Analysis in Piezoresponse Force Microscopy **2010**, 491-528		5
204	Long range interactions in nanoscale science. *Reviews of Modern Physics*, **2010**, 82, 1887-1944	40.5	304
203	Real space mapping of polarization dynamics and hysteresis loop formation in relaxor-ferroelectric PbMg1/3Nb2/3O3PbTiO3 solid solutions. *Journal of Applied Physics*, **2010**, 108, 042006	2.5	43
202	Energy dissipation measurements in frequency-modulated scanning probe microscopy. *Nanotechnology*, **2010**, 21, 455705	3.4	25
201	Scanning Microwave Microscopy Studies of Metal-Insulator Transition at Ferroelastic Domain Walls in VO2. *Microscopy and Microanalysis*, **2010**, 16, 460-461	0.5	1
200	Double-layer mediated electromechanical response of amyloid fibrils in liquid environment. *ACS Nano*, **2010**, 4, 689-98	16.7	32
199	Real space mapping of Li-ion transport in amorphous Si anodes with nanometer resolution. *Nano Letters*, **2010**, 10, 3420-5	11.5	215
198	Control of octahedral tilts and magnetic properties of perovskite oxide heterostructures by substrate symmetry. *Physical Review Letters*, **2010**, 105, 227203	7.4	184

197	Mesoscopic metal-insulator transition at ferroelastic domain walls in VO2. *ACS Nano*, **2010**, 4, 4412-9	16.7	63
196	Decoupling electrochemical reaction and diffusion processes in ionically-conductive solids on the nanometer scale. *ACS Nano*, **2010**, 4, 7349-57	16.7	90
195	Nanoscale switching characteristics of nearly tetragonal BiFeO3 thin films. *Nano Letters*, **2010**, 10, 2555-61	11.5	140
194	Morphology Mapping of Phase-Separated Polymer Films Using Nanothermal Analysis. *Macromolecules*, **2010**, 43, 6724-6730	5.5	30
193	Interplay between ferroelastic and metal-insulator phase transitions in strained quasi-two-dimensional VO2 nanoplatelets. *Nano Letters*, **2010**, 10, 2003-11	11.5	91
192	Suppression of octahedral tilts and associated changes in electronic properties at epitaxial oxide heterostructure interfaces. *Physical Review Letters*, **2010**, 105, 087204	7.4	288
191	Oxygen-induced surface reconstruction of SrRuO3 and its effect on the BaTiO3 interface. *ACS Nano* , **2010**, 4, 4190-6	16.7	43
190	Nanofabrication of insulated scanning probes for electromechanical imaging in liquid solutions. *Nanotechnology*, **2010**, 21, 365302	3.4	16
189	Symmetry relationship and strain-induced transitions between insulating M1 and M2 and metallic R phases of vanadium dioxide. *Nano Letters*, **2010**, 10, 4409-16	11.5	125
188	Mapping octahedral tilts and polarization across a domain wall in BiFeO3 from Z-contrast scanning transmission electron microscopy image atomic column shape analysis. *ACS Nano*, **2010**, 4, 6071-9	16.7	135
187	Ferroelectricity in strain-free SrTiO3 thin films. *Physical Review Letters*, **2010**, 104, 197601	7.4	205
186	Resolution theory, and static and frequency-dependent cross-talk in piezoresponse force microscopy. *Nanotechnology*, **2010**, 21, 405703	3.4	57
185	Band Excitation Scanning Probe Microscopies. *Microscopy Today*, **2010**, 18, 34-40	0.4	11
184	Local polarization dynamics in ferroelectric materials. *Reports on Progress in Physics*, **2010**, 73, 056502	14.4	341
183	Pyroelectric response of ferroelectric nanowires: Size effect and electric energy harvesting. *Journal of Applied Physics*, **2010**, 108, 042009	2.5	60
182	Direct Observation of Capacitor Switching Using Planar Electrodes. *Advanced Functional Materials*, **2010**, 20, 3466-3475	15.6	76
181	Defect-mediated polarization switching in ferroelectrics and related materials: from mesoscopic mechanisms to atomistic control. *Advanced Materials*, **2010**, 22, 314-22	24	52
180	Local electrochemical functionality in energy storage materials and devices by scanning probe microscopies: status and perspectives. *Advanced Materials*, **2010**, 22, E193-209	24	65

179	Collective dynamics in nanostructured polycrystalline ferroelectric thin films using local time-resolved measurements and switching spectroscopy. *Acta Materialia*, **2010**, 58, 67-75	8.4	24
178	Ferroelastic domain wall dynamics in ferroelectric bilayers. *Acta Materialia*, **2010**, 58, 5316-5325	8.4	28
177	Spatially resolved spectroscopic mapping of polarization reversal in polycrystalline ferroelectric films: crossing the resolution barrier. *Physical Review Letters*, **2009**, 103, 057601	7.4	27
176	Piezoresponse Force Microscopy: A Window into Electromechanical Behavior at the Nanoscale. *MRS Bulletin*, **2009**, 34, 648-657	3.2	172
175	Mapping bias-induced phase stability and random fields in relaxor ferroelectrics. *Applied Physics Letters*, **2009**, 95, 092904	3.4	27
174	Intrinsic nucleation mechanism and disorder effects in polarization switching on ferroelectric surfaces. *Physical Review Letters*, **2009**, 102, 017601	7.4	46
173	Disorder identification in hysteresis data: recognition analysis of the random-bond-random-field Ising model. *Physical Review Letters*, **2009**, 103, 157203	7.4	30
172	Probing the temperature dependence of the mechanical properties of polymers at the nanoscale with band excitation thermal scanning probe microscopy. *Nanotechnology*, **2009**, 20, 395709	3.4	40
171	Adaptive probe trajectory scanning probe microscopy for multiresolution measurements of interface geometry. *Nanotechnology*, **2009**, 20, 255701	3.4	15
170	Principal component and spatial correlation analysis of spectroscopic-imaging data in scanning probe microscopy. *Nanotechnology*, **2009**, 20, 085714	3.4	94
169	Surface effect on domain wall width in ferroelectrics. *Journal of Applied Physics*, **2009**, 106, 084102	2.5	50
168	Functional recognition imaging using artificial neural networks: applications to rapid cellular identification via broadband electromechanical response. *Nanotechnology*, **2009**, 20, 405708	3.4	27
167	Electromechanics on the Nanometer Scale: Emerging Phenomena, Devices, and Applications. *MRS Bulletin*, **2009**, 34, 634-642	3.2	41
166	Unraveling Deterministic Mesoscopic Polarization Switching Mechanisms: Spatially Resolved Studies of a Tilt Grain Boundary in Bismuth Ferrite. *Advanced Functional Materials*, **2009**, 19, 2053-2063	15.6	58
165	Defect-induced asymmetry of local hysteresis loops on BiFeO3 surfaces. *Journal of Materials Science*, **2009**, 44, 5095-5101	4.3	32
164	Conduction at domain walls in oxide multiferroics. *Nature Materials*, **2009**, 8, 229-34	27	1048
163	Electric modulation of conduction in multiferroic Ca-doped BiFeO3 films. *Nature Materials*, **2009**, 8, 485-93	27	426
162	Deterministic control of ferroelastic switching in multiferroic materials. *Nature Nanotechnology*, **2009**, 4, 868-75	28.7	299

161	Electromechanical Imaging and Spectroscopy of Ferroelectric and Piezoelectric Materials: State of the Art and Prospects for the Future. *Journal of the American Ceramic Society*, **2009**, 92, 1629-1647	3.8	268
160	Piezoelectric indentation of a flat circular punch accompanied by frictional sliding and applications to scanning probe microscopy. *International Journal of Engineering Science*, **2009**, 47, 221-239	5.7	29
159	Stiffness relations for piezoelectric indentation of flat and non-flat punches of arbitrary planform: Applications to probing nanoelectromechanical properties of materials. *Journal of the Mechanics and Physics of Solids*, **2009**, 57, 673-688	5	27
158	Electronic transport through in situ grown ultrathin BaTiO3 films. *Applied Physics Letters*, **2009**, 95, 032903	3.4	6
157	Atomistic screening mechanism of ferroelectric surfaces: an in situ study of the polar phase in ultrathin BaTiO3 films exposed to H2O. *Nano Letters*, **2009**, 9, 3720-5	11.5	67
156	Detection of percolating paths in polyhedral segregated network composites using electrostatic force microscopy and conductive atomic force microscopy. *Applied Physics Letters*, **2009**, 95, 233122	3.4	19
155	Intermittent contact mode piezoresponse force microscopy in a liquid environment. *Nanotechnology*, **2009**, 20, 195701	3.4	27
154	Switching spectroscopy piezoresponse force microscopy of polycrystalline capacitor structures. *Applied Physics Letters*, **2009**, 94, 042906	3.4	50
153	Spatial distribution of relaxation behavior on the surface of a ferroelectric relaxor in the ergodic phase. *Applied Physics Letters*, **2009**, 95, 142902	3.4	33
152	Thermodynamics of nanodomain formation and breakdown in scanning probe microscopy: Landau-Ginzburg-Devonshire approach. *Physical Review B*, **2009**, 80,	3.3	56
151	Polarization control of electron tunneling into ferroelectric surfaces. *Science*, **2009**, 324, 1421-5	33.3	398
150	Using Neural Network Algorithms for Compositional Mapping in STEM EELS. *Microscopy and Microanalysis*, **2009**, 15, 450-451	0.5	0
149	Interfacial Structure in Multiferroic BiFeO3 Thin Films. *Microscopy and Microanalysis*, **2009**, 15, 1028-1029	0.5	
148	Piezoresponse Force Microscopy. *Microscopy Today*, **2009**, 17, 10-15	0.4	5
147	Direct imaging of the spatial and energy distribution of nucleation centres in ferroelectric materials. *Nature Materials*, **2008**, 7, 209-15	27	235
146	Effect of the intrinsic width on the piezoelectric force microscopy of a single ferroelectric domain wall. *Journal of Applied Physics*, **2008**, 103, 124110	2.5	19
145	AFM Investigation of Mechanical Properties of Dentin. *Israel Journal of Chemistry*, **2008**, 48, 65-72	3.4	8
144	Local polarization switching in the presence of surface-charged defects: Microscopic mechanisms and piezoresponse force spectroscopy observations. *Physical Review B*, **2008**, 78,	3.3	31

143	Rapid multidimensional data acquisition in scanning probe microscopy applied to local polarization dynamics and voltage dependent contact mechanics. *Applied Physics Letters*, **2008**, 93, 112903	3.4	71
142	Local probing of relaxation time distributions in ferroelectric polymer nanomesas: Time-resolved piezoresponse force spectroscopy and spectroscopic imaging. *Applied Physics Letters*, **2008**, 92, 232903	3.4	22
141	Local thermomechanical characterization of phase transitions using band excitation atomic force acoustic microscopy with heated probe. *Applied Physics Letters*, **2008**, 93, 073104	3.4	40
140	Electronic flexoelectricity in low-dimensional systems. *Physical Review B*, **2008**, 77,	3.3	135
139	Direct measurement of periodic electric forces in liquids. *Journal of Applied Physics*, **2008**, 103, 014306	2.5	9
138	Resonance frequency analysis for surface-coupled atomic force microscopy cantilever in ambient and liquid environments. *Applied Physics Letters*, **2008**, 92, 083102	3.4	18
137	Ferroelectric domain wall pinning at a bicrystal grain boundary in bismuth ferrite. *Applied Physics Letters*, **2008**, 93, 142901	3.4	57
136	Nanoscale polarization profile across a 180° ferroelectric domain wall extracted by quantitative piezoelectric force microscopy. *Journal of Applied Physics*, **2008**, 104, 074110	2.5	39
135	The influence of 180° ferroelectric domain wall width on the threshold field for wall motion. *Journal of Applied Physics*, **2008**, 104, 084107	2.5	44
134	Polar distortion in ultrathin BaTiO3 films studied by in situ LEED IV. *Physical Review B*, **2008**, 77,	3.3	28
133	Effect of ferroelastic twin walls on local polarization switching: Phase-field modeling. *Applied Physics Letters*, **2008**, 93, 162901	3.4	28
132	Imaging mechanism of piezoresponse force microscopy in capacitor structures. *Applied Physics Letters*, **2008**, 92, 152906	3.4	52
131	Probing the role of single defects on the thermodynamics of electric-field induced phase transitions. *Physical Review Letters*, **2008**, 100, 155703	7.4	76
130	Screening and retardation effects on 180°-domain wall motion in ferroelectrics: Wall velocity and nonlinear dynamics due to polarization-screening charge interactions. *Physical Review B*, **2008**, 78,	3.3	39
129	Domain dynamics in piezoresponse force spectroscopy: Quantitative deconvolution and hysteresis loop fine structure. *Applied Physics Letters*, **2008**, 92, 182909	3.4	21
128	Interaction of a 180° ferroelectric domain wall with a biased scanning probe microscopy tip: Effective wall geometry and thermodynamics in Ginzburg-Landau-Devonshire theory. *Physical Review B*, **2008**, 78,	3.3	38
127	Piezoelectric response of nanoscale PbTiO3 in composite PbTiO3–CoFe2O4 epitaxial films. *Applied Physics Letters*, **2008**, 93, 074101	3.4	17
126	Local polarization dynamics in chemical solution deposited PZT capacitors by switching spectroscopy PFM **2008**,		1

125	Nanoelectromechanics of Inorganic and Biological Systems: From Structural Imaging to Local Functionalities. *Microscopy Today*, **2008**, 16, 28-33	0.4	
124	Local bias-induced phase transitions. *Materials Today*, **2008**, 11, 16-27	21.8	46
123	Spatially Resolved Mapping of Polarization Switching Behavior in Nanoscale Ferroelectrics. *Advanced Materials*, **2008**, 20, 109-114	24	50
122	Piezoresponse force spectroscopy of ferroelectric-semiconductor materials. *Journal of Applied Physics*, **2007**, 102, 114108	2.5	69
121	Relationship between direct and converse piezoelectric effect in a nanoscale electromechanical contact. *Physical Review B*, **2007**, 76,	3.3	21
120	Nanoscale polarization manipulation and imaging of ferroelectric Langmuir-Blodgett polymer films. *Applied Physics Letters*, **2007**, 90, 122904	3.4	78
119	Nanoscale Electromechanics of Ferroelectric and Biological Systems: A New Dimension in Scanning Probe Microscopy. *Annual Review of Materials Research*, **2007**, 37, 189-238	12.8	179
118	Dual-frequency resonance-tracking atomic force microscopy. *Nanotechnology*, **2007**, 18, 475504	3.4	365
117	The band excitation method in scanning probe microscopy for rapid mapping of energy dissipation on the nanoscale. *Nanotechnology*, **2007**, 18, 435503	3.4	383
116	Resolution-function theory in piezoresponse force microscopy: Wall imaging, spectroscopy, and lateral resolution. *Physical Review B*, **2007**, 75,	3.3	89
115	Intrinsic single-domain switching in ferroelectric materials on a nearly ideal surface. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 20204-9	11.5	67
114	Local Polarization Switching in Piezoresponse Force Microscopy. *Ferroelectrics*, **2007**, 354, 198-207	0.6	13
113	Towards local electromechanical probing of cellular and biomolecular systems in a liquid environment. *Nanotechnology*, **2007**, 18, 424020	3.4	33
112	Recent Advances in Electromechanical Imaging on the Nanometer Scale: Polarization Dynamics in Ferroelectrics, Biopolymers, and Liquid Imaging. *Japanese Journal of Applied Physics*, **2007**, 46, 5674-5685	1.4	17
111	Spatially resolved mapping of ferroelectric switching behavior in self-assembled multiferroic nanostructures: strain, size, and interface effects. *Nanotechnology*, **2007**, 18, 405701	3.4	48
110	Quantitative determination of tip parameters in piezoresponse force microscopy. *Applied Physics Letters*, **2007**, 90, 212905	3.4	29
109	Extrinsic size effect in piezoresponse force microscopy of thin films. *Physical Review B*, **2007**, 76,	3.3	39
108	The piezoresponse force microscopy of surface layers and thin films: Effective response and resolution function. *Journal of Applied Physics*, **2007**, 102, 074105	2.5	46

107	Controlling polarization dynamics in a liquid environment: from localized to macroscopic switching in ferroelectrics. *Physical Review Letters*, **2007**, 98, 247603	7.4	43
106	Nonvolatile memory elements based on the intercalation of organic molecules inside carbon nanotubes. *Physical Review Letters*, **2007**, 98, 056401	7.4	23
105	Layer-by-layer and pseudo-two-dimensional growth modes for heteroepitaxial BaTiO3 films by exploiting kinetic limitations. *Applied Physics Letters*, **2007**, 91, 202901	3.4	28
104	Peritubular dentin lacks piezoelectricity. *Journal of Dental Research*, **2007**, 86, 908-11	8.1	35
103	Electromechanical detection in scanning probe microscopy: Tip models and materials contrast. *Journal of Applied Physics*, **2007**, 102, 014109	2.5	71
102	High-resolution imaging of proteins in human teeth by scanning probe microscopy. *Biochemical and Biophysical Research Communications*, **2007**, 352, 142-6	3.4	34
101	Indentation of spherical and conical punches into piezoelectric half-space with frictional sliding: Applications to scanning probe microscopy. *Physical Review B*, **2007**, 76,	3.3	38
100	Fabrication, dynamics, and electrical properties of insulated scanning probe microscopy probes for electrical and electromechanical imaging in liquids. *Applied Physics Letters*, **2007**, 91, 093130	3.4	23
99	High frequency piezoresponse force microscopy in the 1-10MHz regime. *Applied Physics Letters*, **2007**, 91, 232904	3.4	23
98	Electromechanical Behavior in Biological Systems at the Nanoscale **2007**, 615-633		12
97	Frequency-Dependent Transport Imaging by Scanning Probe Microscopy **2007**, 132-172		4
96	Review of Ferroelectric Domain Imaging by Piezoresponse Force Microscopy **2007**, 173-214		64
95	Application of spectromicroscopy tools to explore local origins of sensor activity in quasi-1D oxide nanostructures. *Nanotechnology*, **2006**, 17, 4014-8	3.4	9
94	Piezoelectric nanoindentation. *Journal of Materials Research*, **2006**, 21, 552-556	2.5	43
93	High resolution electromechanical imaging of ferroelectric materials in a liquid environment by piezoresponse force microscopy. *Physical Review Letters*, **2006**, 96, 237602	7.4	74
92	Adsorption, desorption, and dissociation of benzene on TiO2(110) and Pd/TiO2(110): Experimental characterization and first-principles calculations. *Physical Review B*, **2006**, 74,	3.3	16
91	Domain nucleation and hysteresis loop shape in piezoresponse force spectroscopy. *Applied Physics Letters*, **2006**, 89, 192901	3.4	52
90	Scanning frequency mixing microscopy of high-frequency transport behavior at electroactive interfaces. *Applied Physics Letters*, **2006**, 88, 143128	3.4	8

89	Spatial resolution, information limit, and contrast transfer in piezoresponse force microscopy. *Nanotechnology*, **2006**, 17, 3400-11	3.4	67
88	Vector piezoresponse force microscopy. *Microscopy and Microanalysis*, **2006**, 12, 206-20	0.5	204
87	A decade of piezoresponse force microscopy: progress, challenges, and opportunities. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **2006**, 53, 2226-52	3.2	147
86	Quantitative mapping of switching behavior in piezoresponse force microscopy. *Review of Scientific Instruments*, **2006**, 77, 073702	1.7	178
85	Evidence for possible flexoelectricity in tobacco mosaic viruses used as nanotemplates. *Applied Physics Letters*, **2006**, 88, 153902	3.4	28
84	Observing the superparaelectric limit of relaxor (Na1⁄2Bi1⁄2)0.9Ba0.1TiO3 nanocrystals. *Applied Physics Letters*, **2006**, 89, 112901	3.4	10
83	Dynamic behaviour in piezoresponse force microscopy. *Nanotechnology*, **2006**, 17, 1615-28	3.4	102
82	Resonance enhancement in piezoresponse force microscopy: Mapping electromechanical activity, contact stiffness, and Q factor. *Applied Physics Letters*, **2006**, 89, 022906	3.4	105
81	Switching spectroscopy piezoresponse force microscopy of ferroelectric materials. *Applied Physics Letters*, **2006**, 88, 062908	3.4	332
80	Materials contrast in piezoresponse force microscopy. *Applied Physics Letters*, **2006**, 88, 232904	3.4	66
79	Electromechanical imaging of biomaterials by scanning probe microscopy. *Journal of Structural Biology*, **2006**, 153, 151-9	3.4	49
78	Detection of Indentation Induced FE-to-AFE Phase Transformation in Lead Zirconate Titanate. *Journal of the American Ceramic Society*, **2006**, 89, 3557-3559	3.8	7
77	Bioelectromechanical imaging by scanning probe microscopy: Galvani's experiment at the nanoscale. *Ultramicroscopy*, **2006**, 106, 334-40	3.1	62
76	Piezoresponse force microscopy and recent advances in nanoscale studies of ferroelectrics. *Journal of Materials Science*, **2006**, 41, 107-116	4.3	251
75	Piezoresponse force microscopy and recent advances in nanoscale studies of ferroelectrics **2006**, 107-116		9
74	Scanning Probe Microscopy of Piezoelectric and Transport Phenomena in Electroceramic Materials **2005**, 199-222		
73	Nanoelectromechanics of piezoelectric indentation and applications to scanning probe microscopies of ferroelectric materials. *Philosophical Magazine*, **2005**, 85, 1017-1051	1.6	74
72	Domain growth kinetics in lithium niobate single crystals studied by piezoresponse force microscopy. *Applied Physics Letters*, **2005**, 86, 012906	3.4	183

71	Local Phenomena in Oxides by Advanced Scanning Probe Microscopy. *Journal of the American Ceramic Society*, **2005**, 88, 1077-1098	3.8	72
70	Surface stability of epitaxial SrRuO3 films. *Surface Science*, **2005**, 581, 118-132	1.8	52
69	Simultaneous elastic and electromechanical imaging by scanning probe microscopy: Theory and applications to ferroelectric and biological materials. *Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena*, **2005**, 23, 2102		32
68	Observation of ferroelectricity in a confined crystallite using electron-backscattered diffraction and piezoresponse force microscopy. *Applied Physics Letters*, **2005**, 87, 172903	3.4	11
67	Electronic transport imaging in a multiwire SnO2 chemical field-effect transistor device. *Journal of Applied Physics*, **2005**, 98, 044503	2.5	58
66	Nanoelectromechanics of polarization switching in piezoresponse force microscopy. *Journal of Applied Physics*, **2005**, 97, 074305	2.5	56
65	A microelectromechanical load sensor for in situ electron and x-ray microscopy tensile testing of nanostructures. *Applied Physics Letters*, **2005**, 86, 013506	3.4	109
64	Real space imaging of the microscopic origins of the ultrahigh dielectric constant in polycrystalline CaCu3Ti4O12. *Applied Physics Letters*, **2005**, 86, 102902	3.4	63
63	Electromechanical imaging of biological systems with sub-10nm resolution. *Applied Physics Letters*, **2005**, 87, 053901	3.4	89
62	Scanning probe microscopy imaging of frequency dependent electrical transport through carbon nanotube networks in polymers. *Nanotechnology*, **2004**, 15, 907-912	3.4	22
61	Quantitative analysis of electronic properties of carbon nanotubes by scanning probe microscopy: from atomic to mesoscopic length scales. *Physical Review Letters*, **2004**, 93, 246801	7.4	20
60	Nanoscale domain patterning of lead zirconate titanate materials using electron beams. *Applied Physics Letters*, **2004**, 84, 774-776	3.4	25
59	High-throughput growth temperature optimization of ferroelectric SrxBa1⊠Nb2O6 epitaxial thin films using a temperature gradient method. *Applied Physics Letters*, **2004**, 84, 1350-1352	3.4	30
58	Local electronic transport at grain boundaries in Nb-doped SrTiO3. *Physical Review B*, **2004**, 70,	3.3	36
57	Nonlinear transport imaging by scanning impedance microscopy. *Applied Physics Letters*, **2004**, 85, 4240-4242	3.4	15
56	Surface stability of epitaxial SrRuO3 thin films in vacuum. *Journal of Materials Research*, **2004**, 19, 3447-3450	2.9	11
55	Theory of Scanning Probe Microscopy of Carbon Nanostructures. *Materials Research Society Symposia Proceedings*, **2004**, 838, 79		
54	Potential and Impedance Imaging of Polycrystalline BiFeO3 Ceramics. *Journal of the American Ceramic Society*, **2004**, 85, 3011-3017	3.8	78

53	Surface dynamics of the layered ruthenate Ca1.9Sr0.1RuO4. *Physica Status Solidi (B): Basic Research*, **2004**, 241, 2363-2366	1.3	5
52	Ferroelectric Lithography of Multicomponent Nanostructures. *Advanced Materials*, **2004**, 16, 795-799	24	109
51	Screening Phenomena on Oxide Surfaces and Its Implications for Local Electrostatic and Transport Measurements. *Nano Letters*, **2004**, 4, 555-560	11.5	131
50	Modeling and measurement of surface displacements in BaTiO3 bulk material in piezoresponse force microscopy. *Journal of Applied Physics*, **2004**, 96, 563-568	2.5	106
49	Growth of Carbon Nanofibers on Tipless Cantilevers for High Resolution Topography and Magnetic Force Imaging. *Nano Letters*, **2004**, 4, 2157-2161	11.5	62
48	Quantitative analysis of nanoscale switching in SrBi2Ta2O9 thin filmsby piezoresponse force microscopy. *Applied Physics Letters*, **2004**, 85, 795-797	3.4	65
47	Electric Scanning Probe Imaging and Modification of Ferroelectric Surfaces. *Nanoscience and Technology*, **2004**, 1-43	0.6	6
46	Nanoelectromechanics of piezoresponse force microscopy. *Physical Review B*, **2004**, 70,	3.3	206
45	Polarization and Charge Dynamics in Ferroelectric Materials with SPM **2004**, 183-217		4
44	Nonlinear Dielectric Properties at Oxide Grain Boundaries. *International Journal of Materials Research*, **2003**, 94, 188-192		7
43	Local impedance imaging and spectroscopy of polycrystalline ZnO using contact atomic force microscopy. *Applied Physics Letters*, **2003**, 82, 1869-1871	3.4	125
42	Nanoelectromechanics of Piezoresponse Force Microscopy: Contact Properties, Fields Below the Surface and Polarization Switching. *Materials Research Society Symposia Proceedings*, **2003**, 784, 261		4
41	Scanning Impedance Microscopy: From Impedance Spectra to Impedance Images. *Microscopy Today*, **2002**, 10, 22-27	0.4	1
40	Artifacts and Non-Local Effects in SPM Potential Measurements. *Microscopy Today*, **2002**, 10, 16-21	0.4	0
39	Synthesis of PbS/S Nanostructures through Chemical Modification of Layered Double Hydroxides. *Doklady Chemistry*, **2002**, 383, 93-96	0.8	6
38	Role of single defects in electronic transport through carbon nanotube field-effect transistors. *Physical Review Letters*, **2002**, 89, 216801	7.4	112
37	Tip-gating effect in scanning impedance microscopy of nanoelectronic devices. *Applied Physics Letters*, **2002**, 81, 5219-5221	3.4	32
36	Scanning impedance microscopy of an active Schottky barrier diode. *Journal of Applied Physics*, **2002**, 91, 832-839	2.5	52

35	Contrast Mechanism Maps for Piezoresponse Force Microscopy. *Journal of Materials Research*, **2002** , 17, 936-939	2.5	37
34	ROLE OF DEFECTS IN CARBON NANOTUBE CIRCUITS. *International Journal of Nanoscience*, **2002**, 01, 247-254	0.6	
33	Nanoimpedance Microscopy and Spectroscopy. *Materials Research Society Symposia Proceedings*, **2002**, 738, 441		3
32	Imaging mechanism of piezoresponse force microscopy of ferroelectric surfaces. *Physical Review B*, **2002**, 65,	3.3	409
31	Atomic Polarization and Local Reactivity on Ferroelectric Surfaces: A New Route toward Complex Nanostructures. *Nano Letters*, **2002**, 2, 589-593	11.5	204
30	Domain polarity and temperature induced potential inversion on the BaTiO3(100) surface. *Journal of Applied Physics*, **2002**, 91, 3816-3823	2.5	120
29	Carbon nanotubes as a tip calibration standard for electrostatic scanning probe microscopies. *Applied Physics Letters*, **2002**, 81, 754-756	3.4	28
28	Micromagnetic and magnetoresistance studies of ferromagnetic La0.83Sr0.13MnO2.98 crystals. *Physical Review B*, **2002**, 65,	3.3	9
27	Analysis of phase distributions in the Li2ONb2O5TiO2 system by piezoresponse imaging. *Journal of Materials Research*, **2001**, 16, 329-332	2.5	8
26	Local Potential at Atomically Abrupt Oxide Grain Boundaries by Scanning Probe Microscopy. *Solid State Phenomena*, **2001**, 80-81, 33-46	0.4	3
25	Scanning impedance microscopy of electroactive interfaces. *Applied Physics Letters*, **2001**, 78, 1306-1308	3.4	67
24	Temperature dependence of polarization and charge dynamics on the BaTiO3(100) surface by scanning probe microscopy. *Applied Physics Letters*, **2001**, 78, 1116-1118	3.4	94
23	Magnetic-field measurements of current-carrying devices by force-sensitive magnetic-force microscopy with potential correction. *Applied Physics Letters*, **2001**, 78, 1005-1007	3.4	13
22	Local potential and polarization screening on ferroelectric surfaces. *Physical Review B*, **2001**, 63,	3.3	321
21	Local Polarization, Charge Compensation, and Chemical Interactions on Ferroelectric Surfaces: a Route Toward New Nanostructures. *Materials Research Society Symposia Proceedings*, **2001**, 688, 1		4
20	Scanning Impedance Microscopy: From Impedance Spectra to Impedance Images. *Materials Research Society Symposia Proceedings*, **2001**, 699, 121		3
19	Effect of phase transition on the surface potential of the BaTiO3 (100) surface by variable temperature scanning surface potential microscopy. *Journal of Applied Physics*, **2000**, 87, 3950-3957	2.5	85
18	Evolution of fractal particles in systems with conserved order parameter. *Physical Review E*, **2000**, 61, 1189-94	2.4	8

17	Surface potential at surface-interface junctions in SrTiO3 bicrystals. *Physical Review B*, **2000**, 62, 10419-10430	3.3	55
16	Influence of the Drying Technique on the Structure of Silica Gels. *Journal of Sol-Gel Science and Technology*, **1999**, 15, 31-35	2.3	26
15	The Effect of Copolymerization of Tetraethylorthosilicate and Aluminum Hydroxonitrates. *Journal of Solid State Chemistry*, **1999**, 147, 304-308	3.3	2
14	Local Potential at Atomically Abrupt Oxide Interfaces by Scanning Probe Microscopy. *Materials Research Society Symposia Proceedings*, **1999**, 586, 15		1
13	Characterization of Ferroelectric BaTiO3 (100) Surfaces by Variable Temperature Scanning Surface Potential Microscopy and Piezoresponse Imaging. *Materials Research Society Symposia Proceedings*, **1999**, 596, 327		2
12	Kinetics of Solid State Reactions With Fractal Reagent. *Journal of Materials Synthesis and Processing* , **1998**, 6, 305-309		4
11	Application of non-linear heating regime for the determination of activation energy and kinetic parameters of solid-state reactions. *Thermochimica Acta*, **1998**, 323, 101-107	2.9	8
10	Cryosol method: A novel powder processing technique based on ion-exchange phenomena. *Journal of Materials Research*, **1998**, 13, 901-904	2.5	5
9	Cryosol Synthesis of Nanocrystalline Alumina. *Chemistry of Materials*, **1998**, 10, 3548-3554	9.6	9
8	Microstructure and Sensing Properties of Cryosol Derived Nanocrystalline Tin Dioxide. *Materials Research Society Symposia Proceedings*, **1998**, 536, 389		
7	Influence of The Preparation Conditions on the Structure of Hydrotalcite Layered Double Hydroxides. *Materials Research Society Symposia Proceedings*, **1998**, 547, 239		3
6	Cryosol Synthesis of Nanocomposite Materials. *Materials Research Society Symposia Proceedings*, **1998**, 547, 499		
5	Effect of microstructure on the stability of nanocrystalline tin dioxide ceramics. *Journal of Materials Chemistry*, **1997**, 7, 2269-2272		18
4	Visible spectra of fractal particles in colloidal solutions. *Chemical Physics Letters*, **1996**, 262, 455-459	2.5	1
3	The fractal particles of iron (III) hydroxonitrate: From solution to solid state. *Journal of Non-Crystalline Solids*, **1995**, 181, 146-150	3.9	10
2	Dehydration of Fractal Particles of Iron (III) and Aluminum Hydroxides. *Materials Research Society Symposia Proceedings*, **1995**, 407, 405		
1	Latent Mechanisms of Polarization Switching from In Situ Electron Microscopy Observations. *Advanced Functional Materials*,2100271	15.6	1