Stephen Jesse

List of Publications by Citations

336 papers	14,019 citations	62 h-index	101 g-index
339 ext. papers	15,473 ext. citations	8.2 avg, IF	6.47 L-index

#	Paper	IF	Citations
336	Nanoscale mapping of ion diffusion in a lithium-ion battery cathode. *Nature Nanotechnology*, **2010**, 5, 749-54	28.7	460
335	Polarization control of electron tunneling into ferroelectric surfaces. *Science*, **2009**, 324, 1421-5	33.3	398
334	The band excitation method in scanning probe microscopy for rapid mapping of energy dissipation on the nanoscale. *Nanotechnology*, **2007**, 18, 435503	3.4	383
333	Switching spectroscopy piezoresponse force microscopy of ferroelectric materials. *Applied Physics Letters*, **2006**, 88, 062908	3.4	332
332	Deterministic control of ferroelastic switching in multiferroic materials. *Nature Nanotechnology*, **2009**, 4, 868-75	28.7	299
331	In situ measurements and modeling of carbon nanotube array growth kinetics during chemical vapor deposition. *Applied Physics A: Materials Science and Processing*, **2005**, 81, 223-240	2.6	281
330	Enhanced electric conductivity at ferroelectric vortex cores in BiFeO3. *Nature Physics*, **2012**, 8, 81-88	16.2	271
329	Direct imaging of the spatial and energy distribution of nucleation centres in ferroelectric materials. *Nature Materials*, **2008**, 7, 209-15	27	235
328	Measuring oxygen reduction/evolution reactions on the nanoscale. *Nature Chemistry*, **2011**, 3, 707-13	17.6	220
327	Real space mapping of Li-ion transport in amorphous Si anodes with nanometer resolution. *Nano Letters*, **2010**, 10, 3420-5	11.5	215
326	Vector piezoresponse force microscopy. *Microscopy and Microanalysis*, **2006**, 12, 206-20	0.5	204
325	Ferroelectric or non-ferroelectric: Why so many materials exhibit "ferroelectricity" on the nanoscale. *Applied Physics Reviews*, **2017**, 4, 021302	17.3	195
324	Differentiating Ferroelectric and Nonferroelectric Electromechanical Effects with Scanning Probe Microscopy. *ACS Nano*, **2015**, 9, 6484-92	16.7	191
323	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
322	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
321	Quantitative mapping of switching behavior in piezoresponse force microscopy. *Review of Scientific Instruments*, **2006**, 77, 073702	1.7	178
320	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

319	Band excitation in scanning probe microscopy: sines of change. *Journal Physics D: Applied Physics*, **2011**, 44, 464006	3	141
318	Nanoscale switching characteristics of nearly tetragonal BiFeO3 thin films. *Nano Letters*, **2010**, 10, 2555-61	11.5	140
317	In situ growth rate measurements and length control during chemical vapor deposition of vertically aligned multiwall carbon nanotubes. *Applied Physics Letters*, **2003**, 83, 1851-1853	3.4	117
316	Intermittency, quasiperiodicity and chaos in probe-induced ferroelectric domain switching. *Nature Physics*, **2014**, 10, 59-66	16.2	116
315	Chemical nature of ferroelastic twin domains in CHNHPbI perovskite. *Nature Materials*, **2018**, 17, 1013-1019	27	114
314	Exploring local electrostatic effects with scanning probe microscopy: implications for piezoresponse force microscopy and triboelectricity. *ACS Nano*, **2014**, 8, 10229-36	16.7	110
313	Resonance enhancement in piezoresponse force microscopy: Mapping electromechanical activity, contact stiffness, and Q factor. *Applied Physics Letters*, **2006**, 89, 022906	3.4	105
312	Unraveling the Mechanism of Nanoscale Mechanical Reinforcement in Glassy Polymer Nanocomposites. *Nano Letters*, **2016**, 16, 3630-7	11.5	103
311	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
310	Dynamic behaviour in piezoresponse force microscopy. *Nanotechnology*, **2006**, 17, 1615-28	3.4	102
309	The role of electrochemical phenomena in scanning probe microscopy of ferroelectric thin films. *ACS Nano*, **2011**, 5, 5683-91	16.7	101
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307	Principal component and spatial correlation analysis of spectroscopic-imaging data in scanning probe microscopy. *Nanotechnology*, **2009**, 20, 085714	3.4	94
306	Atomistic-Scale Simulations of Defect Formation in Graphene under Noble Gas Ion Irradiation. *ACS Nano*, **2016**, 10, 8376-84	16.7	92
305	Nanoscale Elastic Changes in 2D Ti3C2Tx (MXene) Pseudocapacitive Electrodes. *Advanced Energy Materials*, **2016**, 6, 1502290	21.8	92
304	Substrate clamping effects on irreversible domain wall dynamics in lead zirconate titanate thin films. *Physical Review Letters*, **2012**, 108, 157604	7.4	92
303	Decoupling electrochemical reaction and diffusion processes in ionically-conductive solids on the nanometer scale. *ACS Nano*, **2010**, 4, 7349-57	16.7	90
302	Electromechanical imaging of biological systems with sub-10nm resolution. *Applied Physics Letters*, **2005**, 87, 053901	3.4	89

301	Band excitation in scanning probe microscopy: recognition and functional imaging. *Annual Review of Physical Chemistry*, **2014**, 65, 519-36	15.7	88
300	Placing single atoms in graphene with a scanning transmission electron microscope. *Applied Physics Letters*, **2017**, 111, 113104	3.4	87
299	Quantification of surface displacements and electromechanical phenomena via dynamic atomic force microscopy. *Nanotechnology*, **2016**, 27, 425707	3.4	80
298	Big, Deep, and Smart Data in Scanning Probe Microscopy. *ACS Nano*, **2016**, 10, 9068-9086	16.7	79
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296	Electrochemical strain microscopy: Probing ionic and electrochemical phenomena in solids at the nanometer level. *MRS Bulletin*, **2012**, 37, 651-658	3.2	77
295	Probing the role of single defects on the thermodynamics of electric-field induced phase transitions. *Physical Review Letters*, **2008**, 100, 155703	7.4	76
294	Directing Matter: Toward Atomic-Scale 3D Nanofabrication. *ACS Nano*, **2016**, 10, 5600-18	16.7	76
293	Deep learning analysis of defect and phase evolution during electron beam-induced transformations in WS2. *Npj Computational Materials*, **2019**, 5,	10.9	74
292	High resolution electromechanical imaging of ferroelectric materials in a liquid environment by piezoresponse force microscopy. *Physical Review Letters*, **2006**, 96, 237602	7.4	74
291	Probing charge screening dynamics and electrochemical processes at the solid-liquid interface with electrochemical force microscopy. *Nature Communications*, **2014**, 5, 3871	17.4	73
290	Mixed electrochemical□ferroelectric states in nanoscale ferroelectrics. *Nature Physics*, **2017**, 13, 812-818	16.2	72
289	Ionically-mediated electromechanical hysteresis in transition metal oxides. *ACS Nano*, **2012**, 6, 7026-33	16.7	72
288	Direct evidence of mesoscopic dynamic heterogeneities at the surfaces of ergodic ferroelectric relaxors. *Physical Review B*, **2010**, 81,	3.3	71
287	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
286	Electromechanical detection in scanning probe microscopy: Tip models and materials contrast. *Journal of Applied Physics*, **2007**, 102, 014109	2.5	71
285	Nanoscale control of phase variants in strain-engineered BiFeO□*Nano Letters*, **2011**, 11, 3346-54	11.5	70
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281	Spatial resolution, information limit, and contrast transfer in piezoresponse force microscopy. *Nanotechnology*, **2006**, 17, 3400-11	3.4	67
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278	Mapping irreversible electrochemical processes on the nanoscale: ionic phenomena in li ion conductive glass ceramics. *Nano Letters*, **2011**, 11, 4161-7	11.5	65
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276	Deep data analysis of conductive phenomena on complex oxide interfaces: physics from data mining. *ACS Nano*, **2014**, 8, 6449-57	16.7	63
275	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
274	Probing surface and bulk electrochemical processes on the LaAlO3-SrTiO3 interface. *ACS Nano*, **2012**, 6, 3841-52	16.7	62
273	Bioelectromechanical imaging by scanning probe microscopy: Galvani's experiment at the nanoscale. *Ultramicroscopy*, **2006**, 106, 334-40	3.1	62
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256	Identification of phases, symmetries and defects through local crystallography. *Nature Communications*, **2015**, 6, 7801	17.4	51
255	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
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235	Atom-by-atom fabrication with electron beams. *Nature Reviews Materials*, **2019**, 4, 497-507	73.3	42
234	Dual harmonic Kelvin probe force microscopy at the graphene□quid interface. *Applied Physics Letters*, **2014**, 104, 133103	3.4	42
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