Petro Maksymovych

List of Publications by Year in descending order

114 papers	9,928 citations	41344 49 h-index	33894 99 g-index
115 all docs	115 docs citations	115 times ranked	10923 citing authors

#	Article	IF	Citations
1	Conduction at domain walls in oxide multiferroics. Nature Materials, 2009, 8, 229-234.	27.5	1,212
2	Perovskiteâ€“fullerene hybrid materials suppress hysteresis in planar diodes. Nature Communications, 2015, 6, 7081.	12.8	948
3	Electric modulation of conduction in multiferroic Ca-doped BiFeO3 films. Nature Materials, 2009, 8, 485-493.	27.5	481
4	Polarization Control of Electron Tunneling into Ferroelectric Surfaces. Science, 2009, 324, 1421-1425.	12.6	441
5	Gold-Adatom-Mediated Bonding in Self-Assembled Short-Chain Alkanethiolate Species on the Au(111) Surface. Physical Review Letters, 2006, 97, 146103.	7.8	425
6	Domain Wall Conductivity in La-Doped<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>BiFeO</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review Letters, 2010, 105, 197603.	7.8	357
7	CuInP₂S₆ Room Temperature Layered Ferroelectric. Nano Letters, 2015, 15, 3808-3814.	9.1	328
8	Enhanced electric conductivity at ferroelectric vortex cores in BiFeO3. Nature Physics, 2012, 8, 81-88.	16.7	324
9	Metal Thioâ€•and Selenophosphates as Multifunctional van der Waals Layered Materials. Advanced Materials, 2017, 29, 1602852.	21.0	256
10	Gold adatom as a key structural component in self-assembled monolayers of organosulfur molecules on Au(111). Progress in Surface Science, 2010, 85, 206-240.	8.3	249
11	Ferroelectric or non-ferroelectric: Why so many materials exhibit â€œferroelectricityâ€•on the nanoscale. Applied Physics Reviews, 2017, 4, .	11.3	240
12	Ferroelectricity in Strain-Free<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>SrTiO</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>Thin Films. Physical Review Letters, 2010, 104, 197601.	7.8	233
13	Differentiating Ferroelectric and Nonferroelectric Electromechanical Effects with Scanning Probe Microscopy. ACS Nano, 2015, 9, 6484-6492.	14.6	231
14	Dynamic Conductivity of Ferroelectric Domain Walls in BiFeO₃. Nano Letters, 2011, 11, 1906-1912.	9.1	223
15	The Role of Gold Adatoms and Stereochemistry in Self-Assembly of Methylthiolate on Au(111). Journal of the American Chemical Society, 2009, 131, 12989-12993.	13.7	159
16	Tunable Metallic Conductance in Ferroelectric Nanodomains. Nano Letters, 2012, 12, 209-213.	9.1	153
17	Tunable quadruple-well ferroelectric van der Waals crystals. Nature Materials, 2020, 19, 43-48.	27.5	140
18	Domain Wall Geometry Controls Conduction in Ferroelectrics. Nano Letters, 2012, 12, 5524-5531.	9.1	125

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19	Exploring Local Electrostatic Effects with Scanning Probe Microscopy: Implications for Piezoresponse Force Microscopy and Triboelectricity. ACS Nano, 2014, 8, 10229-10236.	14.6	123
20	Auâ€‰Adatomsâ€‰inâ€‰Self-Assemblyâ€‰ofâ€‰Benzenethiolâ€‰onâ€‰theâ€‰Au(111)â€‰Surface. Journal of the American Society, 2008, 130, 7518-7519.	13.7	115
21	Domain Wall Conduction and Polarizationâ€Mediated Transport in Ferroelectrics. Advanced Functional Materials, 2013, 23, 2592-2616.	14.9	113
22	STM studies of defect production on the (110)-(1Ã—1) and (110)-(1Ã—2) surfaces induced by UV irradiation. Chemical Physics Letters, 2003, 369, 152-158.	2.6	109
23	Domain wall conduction in multiaxial ferroelectrics. Physical Review B, 2012, 85, .	3.2	95
24	Collective Reactivity of Molecular Chains Self-Assembled on a Surface. Science, 2008, 322, 1664-1667.	12.6	92
25	Phase Transitions, Phase Coexistence, and Piezoelectric Switching Behavior in Highly Strained BiFeO₃ Films. Advanced Materials, 2013, 25, 5561-5567.	21.0	84
26	Surface Bonding and Dynamical Behavior of the CH3SH Molecule on Au(111). Journal of Physical Chemistry B, 2005, 109, 22463-22468.	2.6	82
27	Nondissociative Chemisorption of Short Chain Alkanethiols on Au(111). Journal of Physical Chemistry B, 2005, 109, 15992-15996.	2.6	82
28	Microwave a.c. conductivity of domain walls in ferroelectric thin films. Nature Communications, 2016, 7, 11630.	12.8	81
29	Methanethiolate Adsorption Site on Au(111):Â A Combined STM/DFT Study at the Single-Molecule Level. Journal of Physical Chemistry B, 2006, 110, 21161-21167.	2.6	75
30	Formation, Migration, and Reactivity of Auâ€“CO Complexes on Gold Surfaces. Journal of the American Chemical Society, 2016, 138, 1518-1526.	13.7	74
31	Rapid multidimensional data acquisition in scanning probe microscopy applied to local polarization dynamics and voltage dependent contact mechanics. Applied Physics Letters, 2008, 93, .	3.3	73
32	Ultrathin limit and dead-layer effects in local polarization switching of BiFeO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review B, 2012, 85, .	3.2	71
33	Room-Temperature Electrocaloric Effect in Layered Ferroelectric CuInP₂S₆ for Solid-State Refrigeration. ACS Nano, 2019, 13, 8760-8765.	14.6	69
34	Locally Controlled Cu-Ion Transport in Layered Ferroelectric CuInP₂S₆. ACS Applied Materials & Interfaces, 2018, 10, 27188-27194.	8.0	68
35	High-T_c Layered Ferrielectric Crystals by Coherent Spinodal Decomposition. ACS Nano, 2015, 9, 12365-12373.	14.6	67
36	Nonlocal Dissociative Chemistry of Adsorbed Molecules Induced by Localized Electron Injection into Metal Surfaces. Physical Review Letters, 2007, 99, 016101.	7.8	66

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37	Electronic Properties of Isosymmetric Phase Boundaries in Highly Strained Caâ€Doped BiFeO₃. Advanced Materials, 2014, 26, 4376-4380.	21.0	66
38	Size-effect in layered ferrielectric CuInP2S6. Applied Physics Letters, 2016, 109, .	3.3	66
39	Anisotropic conductivity of uncharged domain walls in BiFeO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>. Physical Review B, 2012, 86, .	3.2	64
40	Thermodynamics of nanodomain formation and breakdown in scanning probe microscopy: Landau-Ginzburg-Devonshire approach. Physical Review B, 2009, 80, .	3.2	63
41	Supramolecular Self-Assembly of Ï€-Conjugated Hydrocarbons via 2D Cooperative CHÍ€ Interaction. ACS Nano, 2012, 6, 566-572.	14.6	63
42	Defectâ€Mediated Polarization Switching in Ferroelectrics and Related Materials: From Mesoscopic Mechanisms to Atomistic Control. Advanced Materials, 2010, 22, 314-322.	21.0	62
43	Current and surface charge modified hysteresis loops in ferroelectric thin films. Journal of Applied Physics, 2015, 118, .	2.5	60
44	Switchable friction enabled by nanoscale self-assembly on graphene. Nature Communications, 2016, 7, 10745.	12.8	59
45	Tunneling spectroscopy of Stark-shifted image potential states on Cu and Au surfaces. Physical Review B, 2007, 76, .	3.2	57
46	Finite size and intrinsic field effect on the polar-active properties of ferroelectric-semiconductor heterostructures. Physical Review B, 2010, 81, .	3.2	57
47	Mechanical Control of Electroresistive Switching. Nano Letters, 2013, 13, 4068-4074.	9.1	55
48	Local Spectroscopy of Image-Potential-Derived States: From Single Molecules to Monolayers of Benzene on Cu(111). Physical Review Letters, 2006, 97, 236806.	7.8	54
49	Cationâ€“Eutectic Transition via Sublattice Melting in CuInP₂S₆/In_{4/3}P₂S₆ van der Waals Layered Crystals. ACS Nano, 2017, 11, 7060-7073.	14.6	54
50	Local bias-induced phase transitions. Materials Today, 2008, 11, 16-27.	14.2	49
51	Intrinsic Nucleation Mechanism and Disorder Effects in Polarization Switching on Ferroelectric Surfaces. Physical Review Letters, 2009, 102, 017601.	7.8	49
52	Piezoelectric domain walls in van der Waals antiferroelectric CuInP2Se6. Nature Communications, 2020, 11, 3623.	12.8	47
53	Giant negative electrostriction and dielectric tunability in a van der Waals layered ferroelectric. Physical Review Materials, 2019, 3, .	2.4	47
54	Electrostrictive and electrostatic responses in contact mode voltage modulated scanning probe microscopies. Applied Physics Letters, 2014, 104, 232901.	3.3	44

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55	Giant elastic tunability in strained BiFeO3 near an electrically induced phase transition. Nature Communications, 2015, 6, 8985.	12.8	43
56	Defect-induced asymmetry of local hysteresis loops on BiFeO3 surfaces. Journal of Materials Science, 2009, 44, 5095-5101.	3.7	38
57	Atomic intercalation to measure adhesion of graphene on graphite. Nature Communications, 2016, 7, 13263.	12.8	35
58	Alignment of Polarization against an Electric Field in van der Waals Ferroelectrics. Physical Review Applied, 2020, 13, .	3.8	34
59	Chemical State Evolution in Ferroelectric Films during Tip-Induced Polarization and Electroresistive Switching. ACS Applied Materials & Interfaces, 2016, 8, 29588-29593.	8.0	33
60	Propagation of Conformation in the Surface-Aligned Dissociation of Single CH3SSCH3Molecules on Au(111). Journal of the American Chemical Society, 2006, 128, 10642-10643.	13.7	32
61	Field enhancement of electronic conductance at ferroelectric domain walls. Nature Communications, 2017, 8, 1318.	12.8	32
62	STM study of water adsorption on the TiO2(110)â€“(1Ã—2) surface. Chemical Physics Letters, 2003, 382, 270-276.	2.6	31
63	The Concept of Negative Capacitance in Ionically Conductive Van der Waals Ferroelectrics. Advanced Energy Materials, 2020, 10, 2001726.	19.5	30
64	Quantitative Analysis of the Local Phase Transitions Induced by Laser Heating. ACS Nano, 2015, 9, 12442-12450.	14.6	27
65	Electronic Control over Attachment and Self-Assembly of Alkyne Groups on Gold. ACS Nano, 2012, 6, 9267-9275.	14.6	25
66	Ferroelectric Selfâ€Poling, Switching, and Monoclinic Domain Configuration in BiFeO₃ Thin Films. Advanced Functional Materials, 2016, 26, 5166-5173.	14.9	25
67	Scaling and disorder analysis of localIâ€“Vcurves from ferroelectric thin films of lead zirconate titanate. Nanotechnology, 2011, 22, 254031.	2.6	24
68	Analytical description of domain morphology and phase diagrams of ferroelectric nanoparticles. Acta Materialia, 2018, 160, 109-120.	7.9	24
69	Self-Organized and Cu-Coordinated Surface Linear Polymerization. Scientific Reports, 2013, 3, 2102.	3.3	23
70	Deep data mining in a real space: separation of intertwined electronic responses in a lightly doped BaFe₂As₂. Nanotechnology, 2016, 27, 475706.	2.6	21
71	Direct STM evidence for Cu-benzoate surface complexes on Cu(110). Surface Science, 2006, 600, 4484-4491.	1.9	20
72	Hybridization of Phenylthiolate- and Methylthiolate-Adatom Species at Low Coverage on the Au(111) Surface. Journal of the American Chemical Society, 2013, 135, 4922-4925.	13.7	20

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73	Chemical Phenomena of Atomic Force Microscopy Scanning. Analytical Chemistry, 2018, 90, 3475-3481.	6.5	20
74	Unexpected spontaneous formation of CO clusters on the Au(111) surface. Chemical Physics Letters, 2006, 421, 473-477.	2.6	19
75	Molecular self-assembly guided by surface reconstruction: CH3SH monolayer on the Au(111) surface. Surface Science, 2008, 602, 2017-2024.	1.9	19
76	Nanoscale Electrochemical Phenomena of Polarization Switching in Ferroelectrics. ACS Applied Materials & Interfaces, 2018, 10, 38217-38222.	8.0	18
77	Cold-Field Switching in PVDF-TrFE Ferroelectric Polymer Nanomesas. Physical Review Letters, 2012, 108, 027603.	7.8	16
78	Ionic Control over Ferroelectricity in 2D Layered van der Waals Capacitors. ACS Applied Materials & Interfaces, 2022, 14, 3018-3026.	8.0	16
79	Ultrafast current imaging by Bayesian inversion. Nature Communications, 2018, 9, 513.	12.8	14
80	Local Strain and Polarization Mapping in Ferrielectric Materials. ACS Applied Materials & Interfaces, 2020, 12, 38546-38553.	8.0	14
81	Stress-induced phase transitions in nanoscale <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Cu</mml:mi><mml:mi>In</mml:mi><mml:msub><mml:mn mathvariant="normal">P</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>6</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2021, 104, .	3.2	14
82	Dissociation of CH3I on the Al(111) Surface â^' An STM and Density Functional Theory Study. Journal of the American Chemical Society, 2002, 124, 14202-14209.	13.7	13
83	Room-Temperature Activation of InGaZnO Thin-Film Transistors via He⁺ Irradiation. ACS Applied Materials & Interfaces, 2017, 9, 35125-35132.	8.0	12
84	Nanoscale Control of Polar Surface Phases in Layered van der Waals CuInP₂S₆. ACS Nano, 2022, 16, 2452-2460.	14.6	12
85	Stark-shifted image potential states of benzene bilayers on Cu(110) and Cu(111). Chemical Physics Letters, 2006, 431, 303-307.	2.6	11
86	Weak competing interactions control assembly of strongly bonded TCNQ ionic acceptor molecules on silver surfaces. Physical Review B, 2014, 90, .	3.2	11
87	Phenomenological description of bright domain walls in ferroelectric-antiferroelectric layered chalcogenides. Physical Review B, 2020, 102, .	3.2	10
88	Surface-State Enhancement of Tunneling Thermopower on the Ag(111) Surface. ACS Nano, 2014, 8, 12110-12119.	14.6	9
89	Controlled mechnical modification of manganite surface with nanoscale resolution. Nanotechnology, 2014, 25, 475302.	2.6	8
90	Antisite defects in layered multiferroic CuCr_{0.9}In_{0.1}P₂S₆. Nanoscale, 2015, 7, 18579-18583.	5.6	8

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91	Thermodynamic Control of Two-Dimensional Molecular Ionic Nanostructures on Metal Surfaces. ACS Nano, 2016, 10, 7821-7829.	14.6	8
92	Structural and electronic properties of ultrathin picene films on the Ag(100) surface. Surface Science, 2016, 652, 67-75.	1.9	7
93	Subtractive fabrication of ferroelectric thin films with precisely controlled thickness. Nanotechnology, 2018, 29, 155302.	2.6	7
94	Formation of carbon-induced dimer vacancy defects on Si(001)-2Ã—1 by thermal decomposition of organic molecules-lack of dependence on the moleculesâ€™ structure. Surface Science, 2006, 600, 366-369.	1.9	5
95	Ionic Disproportionation of Charge Transfer Salt Driven by Surface Epitaxy. Journal of Physical Chemistry C, 2013, 117, 19402-19408.	3.1	5
96	Supramolecular polymerization of a prebiotic nucleoside provides insights into the creation of sequence-controlled polymers. Scientific Reports, 2016, 6, 18891.	3.3	5
97	Electronic switching by metastable polarization states in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>BiFe</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math> thin films. Physical Review Materials, 2018, 2, .	2.4	5
98	Tunable Microwave Conductance of Nanodomains in Ferroelectric PbZr _{0.2} Ti _{0.8} O ₃ Thin Film. Advanced Electronic Materials, 2022, 8, 2100952.	5.1	5
99	Molecular triangulation â€“ finding the conformation of adsorbed self-assembled organic monolayers. Chemical Physics Letters, 2001, 340, 21-25.	2.6	4
100	Distance dependence of tunneling thermovoltage on metal surfaces. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, 031804.	1.2	4
101	Intrinsic space charge layers and field enhancement in ferroelectric nanojunctions. Applied Physics Letters, 2015, 107, 022903.	3.3	4
102	Electrostatic doping by domain walls. Nature Nanotechnology, 2015, 10, 571-573.	31.5	4
103	Domains and Topological Defects in Layered Ferrielectric Materials: Implications for Nanoelectronics. ACS Applied Nano Materials, 2020, 3, 8161-8166.	5.0	4
104	Construction and performance of an ultrahigh vacuum-compatible high temperature vapor dosing system for low vapor pressure compounds. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2003, 21, 491-494.	2.1	3
105	Chemical Changes in Layered Ferroelectric Semiconductors Induced by Helium Ion Beam. Scientific Reports, 2017, 7, 16619.	3.3	3
106	Lowering of Tc in Van Der Waals Layered Materials Under In-Plane Strain. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 253-258.	3.0	3
107	Statistical detection of Josephson, Andreev, and single quasiparticle currents in scanning tunneling microscopy. Physical Review Research, 2021, 3, .	3.6	2
108	Probing phonon softening in ferroelectrics by scanning probe microwave spectroscopy. Physical Review B, 2021, 104, .	3.2	2

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109	Noncontact Andreev Reflection as a Direct Probe of Superconductivity on the Atomic Scale. Nano Letters, 2022, 22, 4042-4048.	9.1	2
110	Investigation of possibility of semiconductor sensor usage for controlling air state of biological water purification station. Sensors and Actuators B: Chemical, 2000, 65, 310-311.	7.8	1
111	Improved crystal grinding and polishing holder for metal single crystal preparation. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 362-363.	2.1	1
112	Combined Scanning Probe Microscopy and Confocal Raman Spectroscopy for Functional Imaging of the Layered Materials. Microscopy and Microanalysis, 2016, 22, 218-219.	0.4	1
113	Multimodal Chemical and Functional Imaging of Nanoscale Transformations in Ferroelectric Thin Films. Microscopy and Microanalysis, 2017, 23, 1620-1621.	0.4	0
114	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.	0.4	0