

Jurij Koruza

List of Publications by Year in descending order

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102
papers

4,030
citations

147726

31
h-index

128225

60
g-index

104
all docs

104
docs citations

104
times ranked

3057
citing authors

#	ARTICLE	IF	CITATIONS
1	BaTiO ₃ -based piezoelectrics: Fundamentals, current status, and perspectives. Applied Physics Reviews, 2017, 4, .	5.5	813
2	Sintering of Lead-Free Piezoelectric Sodium Potassium Niobate Ceramics. Materials, 2015, 8, 8117-8146.	1.3	206
3	Requirements for the transfer of lead-free piezoceramics into application. Journal of Materiomics, 2018, 4, 13-26.	2.8	187
4	Negative electrocaloric effect in antiferroelectric PbZrO ₃ . Europhysics Letters, 2014, 107, 17002.	0.7	132
5	Stress-induced phase transition in lead-free relaxor ferroelectric composites. Acta Materialia, 2017, 136, 271-280.	3.8	111
6	Large electrocaloric effect in lead-free K _{0.5} Na _{0.5} NbO ₃ -SrTiO ₃ ceramics. Applied Physics Letters, 2015, 106, .	1.5	109
7	Applications of lead-free piezoelectric materials. MRS Bulletin, 2018, 43, 612-616.	1.7	93
8	Criticality: Concept to Enhance the Piezoelectric and Electrocaloric Properties of Ferroelectrics. Advanced Functional Materials, 2016, 26, 7326-7333.	7.8	89
9	Temperature-insensitive electric-field-induced strain and enhanced piezoelectric properties of textured (K,Na)NbO ₃ -based lead-free piezoceramics. Acta Materialia, 2018, 156, 389-398.	3.8	84
10	Control of polarization in bulk ferroelectrics by mechanical dislocation imprint. Science, 2021, 372, 961-964.	6.0	84
11	Grain-size-induced ferroelectricity in NaNbO ₃ . Acta Materialia, 2017, 126, 77-85.	3.8	82
12	Electric-field-induced antiferroelectric to ferroelectric phase transition in polycrystalline NaNbO ₃ . Acta Materialia, 2020, 200, 127-135.	3.8	81
13	Formation of the core-shell microstructure in lead-free Bi _{1/2} Na _{1/2} TiO ₃ -SrTiO ₃ piezoceramics and its influence on the electromechanical properties. Journal of the European Ceramic Society, 2016, 36, 1009-1016.	2.8	75
14	Phase transitions of sodium niobate powder and ceramics, prepared by solid state synthesis. Journal of Applied Physics, 2010, 108, .	1.1	70
15	Vapour pressure and mixing thermodynamic properties of the KNbO ₃ -NaNbO ₃ system. RSC Advances, 2015, 5, 76249-76256.	1.7	56
16	Revealing the sequence of switching mechanisms in polycrystalline ferroelectric/ferroelastic materials. Acta Materialia, 2018, 157, 355-363.	3.8	56
17	Effects of Bi ₂ O ₃ additive on sintering process and dielectric, ferroelectric, and piezoelectric properties of (Ba _{0.85} Ca _{0.15})(Zr _{0.1} Ti _{0.9})O ₃ lead-free piezoceramics. Journal of the European Ceramic Society, 2016, 36, 3391-3400.	2.8	50
18	Design of Lead-Free Antiferroelectric (1-x)NaNbO ₃ -xSrSnO ₃ Compositions Guided by First-Principles Calculations. Chemistry of Materials, 2021, 33, 266-274.	3.2	50

#	ARTICLE	CITATIONS
19	Preparation and Microwave Dielectric Properties of Ultra-low Temperature Sintering Ceramics in $(K_{0.5}Na_{0.5})NbO_3$ -based Ceramics. Journal of the American Ceramic Society, 2014, 97, 241-245.	49
20	Precipitation Hardening in Ferroelectric Ceramics. Advanced Materials, 2021, 33, e2102421.	46
21	Mechanical constitutive behavior and exceptional blocking force of lead-free BZT-xBCT piezoceramics. Journal of Applied Physics, 2014, 115, .	44
22	Hardening behavior and highly enhanced mechanical quality factor in $(K_{0.5}Na_{0.5})NbO_3$ -based ceramics. Journal of the European Ceramic Society, 2017, 37, 2083-2089.	42
23	High-performance piezoelectric $(K,Na,Li)(Nb,Ta,Sb)O_3$ single crystals by oxygen annealing. Acta Materialia, 2018, 148, 499-507.	42
24	Interplay of conventional with inverse electrocaloric response in $(Pb,Nb)(Zr,Sn,Ti)O_3$ antiferroelectric materials. Physical Review B, 2018, 97, .	42
25	Propensity for spontaneous relaxor-ferroelectric transition in quenched $(Na_{1/2}Bi_{1/2})TiO_3$ -BaTiO ₃ compositions. Applied Physics Letters, 2018, 113, .	42
26	Orientation-dependent electromechanical properties of Mn-doped $(Li,Na,K)(Nb,Ta)O_3$ single crystals. Applied Physics Letters, 2016, 109, 152902.	41
27	Anisotropy of the high-power piezoelectric properties of $Pb(Zr,Ti)O_3$. Journal of the American Ceramic Society, 2019, 102, 6008-6017.	38
28	Hardening of electromechanical properties in piezoceramics using a composite approach. Applied Physics Letters, 2017, 111, .	34
29	Initial stage sintering mechanism of $NaNbO_3$ and implications regarding the densification of alkaline niobates. Journal of the European Ceramic Society, 2014, 34, 1971-1979.	33
30	Effect of degree of crystallographic texture on ferro- and piezoelectric properties of $Ba_{0.85}Ca_{0.15}TiO_3$ piezoceramics. Journal of the American Ceramic Society, 2017, 100, 2098-2107.	33
31	$(K,Na)NbO_3$ -based piezoelectric single crystals: Growth methods, properties, and applications. Journal of Materials Research, 2020, 35, 990-1016.	33
32	Effect of texturing on polarization switching dynamics in ferroelectric ceramics. Applied Physics Letters, 2016, 108, .	32
33	Electromechanical properties of Ce-doped $(Ba_{0.85}Ca_{0.15})(Zr_{0.1}Ti_{0.9})O_3$ lead-free piezoceramics. Journal of Advanced Ceramics, 2019, 8, 186-195.	32
34	Linear Thermal Expansion of Lead-Free Piezoelectric $K_{0.5}Na_{0.5}NbO_3$ Ceramics in a Wide Temperature Range. Journal of the American Ceramic Society, 2011, 94, 2273-2275.	31
35	An ideal amplitude window against electric fatigue in $BaTiO_3$ -based lead-free piezoelectric materials. Acta Materialia, 2018, 151, 253-259.	31

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37	Inverted electro-mechanical behaviour induced by the irreversible domain configuration transformation in (K,Na)NbO ₃ -based ceramics. Scientific Reports, 2016, 6, 22053.	1.6	30
38	(Na _{1/2} Bi _{1/2})TiO ₃ -based lead-free co-fired multilayer actuators with large strain and high fatigue resistance. Journal of the American Ceramic Society, 2019, 102, 6147-6155.	1.9	30
39	Domain wall-grain boundary interactions in polycrystalline Pb(Zr _{0.7} Ti _{0.3})O ₃ piezoceramics. Journal of the European Ceramic Society, 2020, 40, 3965-3973.	2.8	30
40	Polarization-switching dynamics in bulk ferroelectrics with isometric and oriented anisometric pores. Journal Physics D: Applied Physics, 2017, 50, 045303.	1.3	28
41	Electromechanical properties of CaZrO ₃ modified (K,Na)NbO ₃ -based lead-free piezoceramics under uniaxial stress conditions. Journal of the American Ceramic Society, 2017, 100, 2116-2122.	1.9	27
42	Stochastic multistep polarization switching in ferroelectrics. Physical Review B, 2018, 97, .	1.1	27
43	Determination of the True Operational Range of a Piezoelectric Actuator. Journal of the American Ceramic Society, 2014, 97, 2842-2849.	1.9	26
44	Revisiting the blocking force test on ferroelectric ceramics using high energy x-ray diffraction. Journal of Applied Physics, 2015, 117, 174104.	1.1	26
45	High temperature creep-mediated functionality in polycrystalline barium titanate. Journal of the American Ceramic Society, 2020, 103, 1891-1902.	1.9	26
46	Enhanced electrocaloric cooling in ferroelectric single crystals by electric field reversal. Physical Review B, 2016, 94, .	1.1	25
47	Revealing the mechanism of electric-field-induced phase transition in antiferroelectric NaNbO ₃ by <i>in situ</i> high-energy x-ray diffraction. Applied Physics Letters, 2021, 118, .	1.5	25
48	NaNbO ₃ -based antiferroelectric multilayer ceramic capacitors for energy storage applications. Journal of the European Ceramic Society, 2021, 41, 5519-5525.	2.8	24
49	Knudsen effusion mass spectrometric approach to the thermodynamics of Na ₂ O-Nb ₂ O ₅ system. International Journal of Mass Spectrometry, 2012, 309, 70-78.	0.7	23
50	Influence of composition on the unipolar electric fatigue of Ba(Zr _{0.2} Ti _{0.8})O ₃ -(Ba _{0.7} Ca _{0.3})TiO ₃ lead-free piezoceramics. Journal of the American Ceramic Society, 2017, 100, 4699-4709.		22
51	Electric-field-induced phase transitions in co-doped Pb(Zr _{1-x} Ti _x)O ₃ at the morphotropic phase boundary. Science and Technology of Advanced Materials, 2014, 15, 015010.	2.8	21
52	Strong domain configuration dependence of the nonlinear dielectric response in (K,Na)NbO ₃ -based ceramics. Applied Physics Letters, 2015, 107, .	1.5	21
53	Microstructure Evolution During Sintering of Sodium Niobate. Journal of the American Ceramic Society, 2011, 94, 4174-4178.	1.9	20
54	Fatigue-less electrocaloric effect in relaxor Pb(Mg _{1/3} Nb _{2/3})O ₃ multilayer elements. Journal of the European Ceramic Society, 2017, 37, 5105-5108.	2.8	20

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55	The Electrocaloric Effect in Lead-Free $K_{0.5}Na_{0.5}NbO_3$ - $SrTiO_3$ Ceramics. <i>Ferroelectrics</i> , 2013, 446, 39-45.	0.3	18
56	Influence of Ta^{5+} content on the crystallographic structure and electrical properties of $[001]$ -oriented $(Li,Na,K)(Nb,Ta)O_3$ single crystals. <i>CrystEngComm</i> , 2016, 18, 2081-2088.	1.3	18
57	Cytotoxicity, chemical stability, and surface properties of ferroelectric ceramics for biomaterials. <i>Journal of the American Ceramic Society</i> , 2018, 101, 440-449.	1.9	18
58	Domain morphology of newly designed lead-free antiferroelectric $NaNbO_3$ - $SrSnO_3$ ceramics. <i>Journal of the American Ceramic Society</i> , 2021, 104, 3715-3725.	1.9	17
59	Large plastic deformability of bulk ferroelectric $KNbO_3$ single crystals. <i>Journal of the European Ceramic Society</i> , 2021, 41, 4098-4107.	2.8	17
60	Enhancing the operational range of piezoelectric actuators by uniaxial compressive preloading. <i>Journal Physics D: Applied Physics</i> , 2015, 48, 215302.	1.3	16
61	Anomalous dielectric and thermal properties of Ba-doped $PbZrO_3$ ceramics. <i>Journal of Physics Condensed Matter</i> , 2015, 27, 455902.	0.7	15
62	Temperature-Dependent Evolution of Crystallographic and Domain Structures in $(K,Na,Li)(Ta,Nb)O_3$ Piezoelectric Single Crystals. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2018, 65, 1508-1516.	1.7	15
63	Influence of crystallographic structure on polarization reversal in polycrystalline ferroelectric/ferroelastic materials. <i>Journal of Applied Physics</i> , 2019, 125, .	1.1	15
64	Melting of d_{xy} Orbital Ordering Accompanied by Suppression of Giant Tetragonal Distortion and Insulator-to-Metal Transition in Cr-Substituted $PbVO_3$. <i>Chemistry of Materials</i> , 2019, 31, 1352-1358.	3.2	15
65	Compositional Dependence of R - ϵ' Behavior in Soft $Pb(Zr_{1-x}Ti_x)O_3$ Ceramics. <i>Journal of the American Ceramic Society</i> , 2011, 94, 4419-4425.	1.9	14
66	Spontaneous ferroelectric order in lead-free relaxor $NaxB_{1-x}Ti_{1-x}O_3$ ceramics. <i>Physical Review Materials</i> , 2020, 4, 014401.	1.1	14
67	Origin of high-power drive stability in $(Na_{1/2}Bi_{1/2})TiO_3$ - $BaTiO_3$ based piezoceramics. <i>Acta Materialia</i> , 2022, 227, 117703.	3.8	14
68	Simultaneous Enhancement of Fracture Toughness and Unipolar Strain in $Pb(Zr_{1-x}Ti_x)O_3$ - $BaTiO_3$ Composites Through Composition Adjustment. <i>Journal of the American Ceramic Society</i> , 2014, 97, 1582-1588.	1.9	13
69	Lead-free perovskite ferroelectrics. <i>Journal of Applied Physics</i> , 2018, , 51-69.		13
70	Thermal stability of the electromechanical properties in acceptor-doped and composite-hardened $(Na_{1/2}Bi_{1/2})TiO_3$ - $BaTiO_3$ ferroelectrics. <i>Journal of Applied Physics</i> , 2021, 130, .	1.1	13
71	Origin of high electromechanical properties in $NaxBaZr_{1-x}O_3$ ferroelectrics. <i>Physical Review Materials</i> , 2020, 4, 014401.	0.9	13
72	Enhancing electromechanical properties of lead-free ferroelectrics with bilayer ceramic/ceramic composites. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2015, 62, 997-1006.	1.7	12

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73	Impact of Polarization Dynamics and Charged Defects on the Electrocaloric Response of Ferroelectric Pb(Zr,Ti)O ₃ Ceramics. Energy Technology, 2018, 6, 1519-1525.	1.8	12
74	Top-Down Processing of Nanopowder. Journal of Nanomaterials, 2012, 2012, 1-7.	1.5	11
75	²³ Na NMR Spectroscopic Quantification of the Antiferroelectric-Ferroelectric Phase Coexistence in Sodium Niobate. Journal of Physical Chemistry C, 2020, 124, 23852-23858.	1.5	11
76	Polarization Rotation at Morphotropic Phase Boundary in New Lead-Free Na _{1/2} Bi _{1/2} V ₁ Ti ₁ O ₃ Piezoceramics. ACS Applied Materials & Interfaces, 2021, 13, 5208-5215.	4.0	11
77	Orienting anisometric pores in ferroelectrics: Piezoelectric property engineering through local electric field distributions. Physical Review Materials, 2019, 3, .	0.9	11
78	Mechanical versus electromechanical hardening in relaxor ferroelectric Na _{1/2} Bi _{1/2} TiO ₃ -BaTiO ₃ with ZnO inclusions. Scripta Materialia, 2019, 169, 92-95.	2.6	10
79	Direct observation of domain wall motion and lattice strain dynamics in ferroelectrics under high-power resonance. Physical Review B, 2021, 103, .	1.1	9
80	Broad-band dielectric response of 0.5Ba(Ti _{0.8} Zr _{0.2})O ₃ -0.5(Ba _{0.7} Ca _{0.3})TiO ₃ piezoceramics: soft and central mode behaviour. Phase Transitions, 2016, 89, 785-793.	0.3	9
81	Multilayer lead-free piezoceramic composites: Influence of co-firing on microstructure and electromechanical behavior. Journal of the American Ceramic Society, 2017, 100, 3673-3683.	1.9	8
82	Na _{1/2} Bi _{1/2} VO ₃ and K _{1/2} Bi _{1/2} VO ₃ : New Lead-Free Tetragonal Perovskites with Moderate c/a Ratios. Chemistry of Materials, 2018, 30, 6728-6736.	3.2	8
83	Multistep stochastic mechanism of polarization reversal in rhombohedral ferroelectrics. Physical Review B, 2020, 102, .	1.1	8
84	Electrical and thermal properties of vinylidene fluoride-trifluoroethylene-based polymer system with coexisting ferroelectric and relaxor states. Journal of Materials Science, 2013, 48, 7920-7926.	1.7	7
85	Review of methods for powder-based processing. , 2018, , 95-120.		7
86	Stochastic model of dispersive multi-step polarization switching in ferroelectrics due to spatial electric field distribution. Applied Physics Letters, 2019, 114, 222902.	1.5	7
87	Influence of Zn ²⁺ doping on the morphotropic phase boundary in lead-free piezoelectric (1) Tj ETQq1 1 0.784314 rgBTI (C) the American Ceramic Society, 2022, 105, 1232-1240.	1.9	7
88	Deconvolving Ferroelastic and Phase Transformation Toughening in (Pb,Zr,Ti)O ₃ and (Pb,La,Zr)O ₃ Journal of the American Ceramic Society, 2012, 95, 3713-3715.	1.9	6
89	Transparent crystals with ultrahigh piezoelectricity. Nature, 2020, 577, 325-326.	13.7	6
90	Multifunctional Cantilevers as Working Elements in Solid-State Cooling Devices. Actuators, 2021, 10, 58.	1.2	6

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91	Revealing the solid-state processing mechanisms of antiferroelectric AgNbO_3 for energy storage. Journal of the American Ceramic Society, 2022, 105, 451-460.	1.9	6
92	Multistep stochastic mechanism of polarization reversal in orthorhombic ferroelectrics. Physical Review B, 2021, 104, .	1.1	6
93	Ferroelastic Properties of PZT: Characterization Under Compressive and Tensile Stress, Finite-Element Simulation, and Lifetime Calculation. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 1542-1551.	1.7	5
94	Characterization of crystal structure, electrical and electromechanical properties of Mg-doped $0.94\text{Na}_{1/2}\text{Bi}_{1/2}\text{TiO}_3\text{-}0.06\text{BaTiO}_3$. Journal of the European Ceramic Society, 2022, 42, 5591-5597.	2.8	5
95	Lead-Free Piezoelectric Ceramics. , 2021, , 358-368.		4
96	Influence of Defects on the Schottky Barrier Height at $\text{BaTiO}_3/\text{RuO}_2$ Interfaces. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2100143.	0.8	4
97	Electroceramics XVII - The 2020 virtual conference experience at TU Darmstadt. Open Ceramics, 2021, 6, 100114.	1.0	2
98	Measurement System for Piezoelectric Resonance Impedance Spectroscopy Under Combined AC and High-Voltage DC Loading. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 3137-3144.	1.7	2
99	Direct measurements of the electrocaloric effect in lead-free $\text{K}_{0.5}\text{Na}_{0.5}\text{NbO}_3\text{-SrTiO}_3$ ceramics sintered in air. , 2012, , .		0
100	Nonlinear dielectric response of polymer system with coexisting ferroelectric and relaxor states. , 2013, , .		0
101	Enhanced Electromechanical properties of ferroelectric $\text{Bi}_{1/2}\text{Na}_{1/2}\text{TiO}_3$ $\sim 7\text{BaTiO}_3$ /relaxor $\text{Bi}_{1/2}\text{Na}_{1/2}\text{TiO}_3$ $\sim 25\text{SrTiO}_3$ composites. , 2016, , .		0
102	Dynamic scaling properties of multistep polarization response in ferroelectrics. Journal of Applied Physics, 2022, 131, .	1.1	0