

# Jurij Koruza

## List of Publications by Citations

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2,602  
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26  
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48  
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104  
ext. papers

3,306  
ext. citations

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avg, IF

5.41  
L-index

#	Paper	IF	Citations
93	BaTiO <sub>3</sub> -based piezoelectrics: Fundamentals, current status, and perspectives. <i>Applied Physics Reviews</i> , <b>2017</b> , 4, 041305	17.3	487
92	Sintering of Lead-Free Piezoelectric Sodium Potassium Niobate Ceramics. <i>Materials</i> , <b>2015</b> , 8, 8117-8146	3.5	153
91	Requirements for the transfer of lead-free piezoceramics into application. <i>Journal of Materiomics</i> , <b>2018</b> , 4, 13-26	6.7	121
90	Negative electrocaloric effect in antiferroelectric PbZrO <sub>3</sub> . <i>Europhysics Letters</i> , <b>2014</b> , 107, 17002	1.6	108
89	Large electrocaloric effect in lead-free K <sub>0.5</sub> Na <sub>0.5</sub> NbO <sub>3</sub> -SrTiO <sub>3</sub> ceramics. <i>Applied Physics Letters</i> , <b>2015</b> , 106, 202905	3.4	97
88	Stress-induced phase transition in lead-free relaxor ferroelectric composites. <i>Acta Materialia</i> , <b>2017</b> , 136, 271-280	8.4	75
87	Criticality: Concept to Enhance the Piezoelectric and Electrocaloric Properties of Ferroelectrics. <i>Advanced Functional Materials</i> , <b>2016</b> , 26, 7326-7333	15.6	71
86	Formation of the core-shell microstructure in lead-free Bi <sub>1/2</sub> Na <sub>1/2</sub> TiO <sub>3</sub> -SrTiO <sub>3</sub> piezoceramics and its influence on the electromechanical properties. <i>Journal of the European Ceramic Society</i> , <b>2016</b> , 36, 1009-1016	6	60
85	Applications of lead-free piezoelectric materials. <i>MRS Bulletin</i> , <b>2018</b> , 43, 612-616	3.2	59
84	Temperature-insensitive electric-field-induced strain and enhanced piezoelectric properties of textured (K,Na)NbO <sub>3</sub> -based lead-free piezoceramics. <i>Acta Materialia</i> , <b>2018</b> , 156, 389-398	8.4	56
83	Phase transitions of sodium niobate powder and ceramics, prepared by solid state synthesis. <i>Journal of Applied Physics</i> , <b>2010</b> , 108, 113509	2.5	55
82	Grain-size-induced ferroelectricity in NaNbO <sub>3</sub> . <i>Acta Materialia</i> , <b>2017</b> , 126, 77-85	8.4	52
81	Vapour pressure and mixing thermodynamic properties of the KNbO <sub>3</sub> -NaNbO <sub>3</sub> system. <i>RSC Advances</i> , <b>2015</b> , 5, 76249-76256	3.7	45
80	Nonlinear stress-strain behavior and stress-induced phase transitions in soft Pb(Zr <sub>1-x</sub> Ti <sub>x</sub> )O <sub>3</sub> at the morphotropic phase boundary. <i>Physical Review B</i> , <b>2013</b> , 87,	3.3	44
79	Effects of Bi <sub>2</sub> O <sub>3</sub> additive on sintering process and dielectric, ferroelectric, and piezoelectric properties of (Ba <sub>0.85</sub> Ca <sub>0.15</sub> )(Zr <sub>0.1</sub> Ti <sub>0.9</sub> )O <sub>3</sub> lead-free piezoceramics. <i>Journal of the European Ceramic Society</i> , <b>2016</b> , 36, 3391-3400	6	38
78	Mechanical constitutive behavior and exceptional blocking force of lead-free BZT-xBCT piezoceramics. <i>Journal of Applied Physics</i> , <b>2014</b> , 115, 204107	2.5	37
77	Preparation and Microwave Dielectric Properties of Ultra-low Temperature Sintering Ceramics in K <sub>2</sub> O-MoO <sub>3</sub> Binary System. <i>Journal of the American Ceramic Society</i> , <b>2014</b> , 97, 241-245	3.8	36

76	Orientation-dependent electromechanical properties of Mn-doped (Li,Na,K)(Nb,Ta)O <sub>3</sub> single crystals. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 152902	3.4	32
75	Hardening behavior and highly enhanced mechanical quality factor in (K 0.5 Na 0.5 )NbO <sub>3</sub> Based ceramics. <i>Journal of the European Ceramic Society</i> , <b>2017</b> , 37, 2083-2089	6	31
74	High-performance piezoelectric (K,Na,Li)(Nb,Ta,Sb)O <sub>3</sub> single crystals by oxygen annealing. <i>Acta Materialia</i> , <b>2018</b> , 148, 499-507	8.4	31
73	Revealing the sequence of switching mechanisms in polycrystalline ferroelectric/ferroelastic materials. <i>Acta Materialia</i> , <b>2018</b> , 157, 355-363	8.4	29
72	Propensity for spontaneous relaxor-ferroelectric transition in quenched (Na <sub>1/2</sub> Bi <sub>1/2</sub> )TiO <sub>3</sub> -BaTiO <sub>3</sub> compositions. <i>Applied Physics Letters</i> , <b>2018</b> , 113, 252902	3.4	28
71	Effect of texturing on polarization switching dynamics in ferroelectric ceramics. <i>Applied Physics Letters</i> , <b>2016</b> , 108, 012907	3.4	27
70	Effect of degree of crystallographic texture on ferro- and piezoelectric properties of Ba <sub>0.85</sub> Ca <sub>0.15</sub> TiO <sub>3</sub> piezoceramics. <i>Journal of the American Ceramic Society</i> , <b>2017</b> , 100, 2098-2107	3.8	26
69	An ideal amplitude window against electric fatigue in BaTiO <sub>3</sub> -based lead-free piezoelectric materials. <i>Acta Materialia</i> , <b>2018</b> , 151, 253-259	8.4	26
68	Interplay of conventional with inverse electrocaloric response in (Pb,Nb)(Zr,Sn,Ti)O <sub>3</sub> antiferroelectric materials. <i>Physical Review B</i> , <b>2018</b> , 97,	3.3	26
67	Initial stage sintering mechanism of NaNbO <sub>3</sub> and implications regarding the densification of alkaline niobates. <i>Journal of the European Ceramic Society</i> , <b>2014</b> , 34, 1971-1979	6	25
66	Linear Thermal Expansion of Lead-Free Piezoelectric K <sub>0.5</sub> Na <sub>0.5</sub> NbO <sub>3</sub> Ceramics in a Wide Temperature Range. <i>Journal of the American Ceramic Society</i> , <b>2011</b> , 94, 2273-2275	3.8	24
65	Control of polarization in bulk ferroelectrics by mechanical dislocation imprint. <i>Science</i> , <b>2021</b> , 372, 961-964	9.3	24
64	Electromechanical properties of CaZrO <sub>3</sub> modified (K,Na)NbO <sub>3</sub> -based lead-free piezoceramics under uniaxial stress conditions. <i>Journal of the American Ceramic Society</i> , <b>2017</b> , 100, 2116-2122	3.8	23
63	Hardening of electromechanical properties in piezoceramics using a composite approach. <i>Applied Physics Letters</i> , <b>2017</b> , 111, 022905	3.4	23
62	Determination of the True Operational Range of a Piezoelectric Actuator. <i>Journal of the American Ceramic Society</i> , <b>2014</b> , 97, 2842-2849	3.8	23
61	Electric-field-induced antiferroelectric to ferroelectric phase transition in polycrystalline NaNbO <sub>3</sub> . <i>Acta Materialia</i> , <b>2020</b> , 200, 127-135	8.4	23
60	Polarization-switching dynamics in bulk ferroelectrics with isometric and oriented anisometric pores. <i>Journal Physics D: Applied Physics</i> , <b>2017</b> , 50, 045303	3	21
59	Knudsen effusion mass spectrometric approach to the thermodynamics of Na <sub>2</sub> O-Nb <sub>2</sub> O <sub>5</sub> system. <i>International Journal of Mass Spectrometry</i> , <b>2012</b> , 309, 70-78	1.9	20

58	Enhanced electrocaloric cooling in ferroelectric single crystals by electric field reversal. <i>Physical Review B</i> , <b>2016</b> , 94,	3.3	20
57	Electromechanical properties of Ce-doped (Ba <sub>0.85</sub> Ca <sub>0.15</sub> )(Zr <sub>0.1</sub> Ti <sub>0.9</sub> )O <sub>3</sub> lead-free piezoceramics. <i>Journal of Advanced Ceramics</i> , <b>2019</b> , 8, 186-195	10.7	19
56	Anisotropy of the high-power piezoelectric properties of Pb(Zr,Ti)O <sub>3</sub> . <i>Journal of the American Ceramic Society</i> , <b>2019</b> , 102, 6008-6017	3.8	19
55	Electric-field-induced phase transitions in co-doped Pb(ZrTi)O at the morphotropic phase boundary. <i>Science and Technology of Advanced Materials</i> , <b>2014</b> , 15, 015010	7.1	19
54	Fatigue-less electrocaloric effect in relaxor Pb(Mg <sub>1/3</sub> Nb <sub>2/3</sub> )O <sub>3</sub> multilayer elements. <i>Journal of the European Ceramic Society</i> , <b>2017</b> , 37, 5105-5108	6	18
53	Inverted electro-mechanical behaviour induced by the irreversible domain configuration transformation in (K,Na)NbO <sub>3</sub> -based ceramics. <i>Scientific Reports</i> , <b>2016</b> , 6, 22053	4.9	18
52	Influence of composition on the unipolar electric fatigue of Ba(Zr <sub>0.2</sub> Ti <sub>0.8</sub> )O <sub>3</sub> -(Ba <sub>0.7</sub> Ca <sub>0.3</sub> )TiO <sub>3</sub> lead-free piezoceramics. <i>Journal of the American Ceramic Society</i> , <b>2017</b> , 100, 4699-4709	3.8	17
51	Stochastic multistep polarization switching in ferroelectrics. <i>Physical Review B</i> , <b>2018</b> , 97,	3.3	17
50	Influence of Ta <sup>5+</sup> content on the crystallographic structure and electrical properties of [001]PC-oriented (Li,Na,K)(Nb,Ta)O <sub>3</sub> single crystals. <i>CrystEngComm</i> , <b>2016</b> , 18, 2081-2088	3.3	17
49	Domain wall-grain boundary interactions in polycrystalline Pb(Zr <sub>0.7</sub> Ti <sub>0.3</sub> )O <sub>3</sub> piezoceramics. <i>Journal of the European Ceramic Society</i> , <b>2020</b> , 40, 3965-3973	6	17
48	Revisiting the blocking force test on ferroelectric ceramics using high energy x-ray diffraction. <i>Journal of Applied Physics</i> , <b>2015</b> , 117, 174104	2.5	16
47	Design of Lead-Free Antiferroelectric (1-x)NaNbO <sub>3</sub> ∕SrSnO <sub>3</sub> Compositions Guided by First-Principles Calculations. <i>Chemistry of Materials</i> , <b>2021</b> , 33, 266-274	9.6	16
46	(K,Na)NbO <sub>3</sub> -based piezoelectric single crystals: Growth methods, properties, and applications. <i>Journal of Materials Research</i> , <b>2020</b> , 35, 990-1016	2.5	15
45	Strong domain configuration dependence of the nonlinear dielectric response in (K,Na)NbO <sub>3</sub> -based ceramics. <i>Applied Physics Letters</i> , <b>2015</b> , 107, 202903	3.4	15
44	Microstructure Evolution During Sintering of Sodium Niobate. <i>Journal of the American Ceramic Society</i> , <b>2011</b> , 94, 4174-4178	3.8	15
43	High temperature creep-mediated functionality in polycrystalline barium titanate. <i>Journal of the American Ceramic Society</i> , <b>2020</b> , 103, 1891-1902	3.8	15
42	(Na <sub>1/2</sub> Bi <sub>1/2</sub> )TiO <sub>3</sub> -based lead-free co-fired multilayer actuators with large strain and high fatigue resistance. <i>Journal of the American Ceramic Society</i> , <b>2019</b> , 102, 6147-6155	3.8	14
41	Cytotoxicity, chemical stability, and surface properties of ferroelectric ceramics for biomaterials. <i>Journal of the American Ceramic Society</i> , <b>2018</b> , 101, 440-449	3.8	14

40	Enhancing the operational range of piezoelectric actuators by uniaxial compressive preloading. <i>Journal Physics D: Applied Physics</i> , <b>2015</b> , 48, 215302	3	14
39	The Electrocaloric Effect in Lead-Free K <sub>0.5</sub> Na <sub>0.5</sub> NbO <sub>3</sub> -SrTiO <sub>3</sub> Ceramics. <i>Ferroelectrics</i> , <b>2013</b> , 446, 39-45	0.6	12
38	Compositional Dependence of R-curve Behavior in Soft Pb(Zr <sub>1-x</sub> Ti <sub>x</sub> )O <sub>3</sub> Ceramics. <i>Journal of the American Ceramic Society</i> , <b>2011</b> , 94, 4419-4425	3.8	12
37	Melting of dxy Orbital Ordering Accompanied by Suppression of Giant Tetragonal Distortion and Insulator-to-Metal Transition in Cr-Substituted PbVO <sub>3</sub> . <i>Chemistry of Materials</i> , <b>2019</b> , 31, 1352-1358	9.6	12
36	Temperature-Dependent Evolution of Crystallographic and Domain Structures in (K,Na,Li)(Ta,Nb)O <sub>3</sub> Piezoelectric Single Crystals. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , <b>2018</b> , 65, 1508-1516	3.2	11
35	Lead-free perovskite ferroelectrics <b>2018</b> , 51-69		11
34	Anomalous dielectric and thermal properties of Ba-doped PbZrO <sub>3</sub> ceramics. <i>Journal of Physics Condensed Matter</i> , <b>2015</b> , 27, 455902	1.8	11
33	Spontaneous ferroelectric order in lead-free relaxor Na <sub>1/2</sub> Bi <sub>1/2</sub> TiO <sub>3</sub> -based composites. <i>Physical Review B</i> , <b>2020</b> , 101,	3.3	10
32	Simultaneous Enhancement of Fracture Toughness and Unipolar Strain in Pb(Zr,Ti)O <sub>3</sub> -ZrO <sub>2</sub> Composites Through Composition Adjustment. <i>Journal of the American Ceramic Society</i> , <b>2014</b> , 97, 1582-1588	3.8	10
31	Top-Down Processing of Nanopowder. <i>Journal of Nanomaterials</i> , <b>2012</b> , 2012, 1-7	3.2	10
30	Impact of Polarization Dynamics and Charged Defects on the Electrocaloric Response of Ferroelectric Pb(Zr,Ti)O <sub>3</sub> Ceramics. <i>Energy Technology</i> , <b>2018</b> , 6, 1519-1525	3.5	10
29	Precipitation Hardening in Ferroelectric Ceramics. <i>Advanced Materials</i> , <b>2021</b> , 33, e2102421	24	9
28	Broad-band dielectric response of 0.5Ba(Ti <sub>0.8</sub> Zr <sub>0.2</sub> )O <sub>3</sub> ·0.5(Ba <sub>0.7</sub> Ca <sub>0.3</sub> )TiO <sub>3</sub> piezoceramics: soft and central mode behaviour. <i>Phase Transitions</i> , <b>2016</b> , 89, 785-793	1.3	8
27	Influence of crystallographic structure on polarization reversal in polycrystalline ferroelectric/ferroelastic materials. <i>Journal of Applied Physics</i> , <b>2019</b> , 125, 174101	2.5	7
26	Revealing the mechanism of electric-field-induced phase transition in antiferroelectric NaNbO <sub>3</sub> by in situ high-energy x-ray diffraction. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 132903	3.4	7
25	Mechanical versus electromechanical hardening in relaxor ferroelectric Na <sub>1/2</sub> Bi <sub>1/2</sub> TiO <sub>3</sub> -BaTiO <sub>3</sub> with ZnO inclusions. <i>Scripta Materialia</i> , <b>2019</b> , 169, 92-95	5.6	6
24	Enhancing electromechanical properties of lead-free ferroelectrics with bilayer ceramic/ceramic composites. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , <b>2015</b> , 62, 997-1006	3.2	6
23	Deconvolving Ferroelastic and Phase Transformation Toughening in Pb(Zr <sub>1-x</sub> Ti <sub>x</sub> )O <sub>3</sub> and Pb <sub>1-x</sub> La <sub>x</sub> (Zr <sub>1-x</sub> Ti <sub>x</sub> )O <sub>3</sub> . <i>Journal of the American Ceramic Society</i> , <b>2012</b> , 95, 3713-3715	3.8	6

22	Origin of high electromechanical properties in (K,Na)NbO <sub>3</sub> -based lead-free piezoelectrics modified with BaZrO <sub>3</sub> . <i>Physical Review Materials</i> , <b>2020</b> , 4,	3.2	6
21	Large plastic deformability of bulk ferroelectric KNbO <sub>3</sub> single crystals. <i>Journal of the European Ceramic Society</i> , <b>2021</b> , 41, 4098-4107	6	6
20	Multilayer lead-free piezoceramic composites: Influence of co-firing on microstructure and electromechanical behavior. <i>Journal of the American Ceramic Society</i> , <b>2017</b> , 100, 3673-3683	3.8	5
19	Stochastic model of dispersive multi-step polarization switching in ferroelectrics due to spatial electric field distribution. <i>Applied Physics Letters</i> , <b>2019</b> , 114, 222902	3.4	5
18	Electrical and thermal properties of vinylidene fluoride-trifluoroethylene-based polymer system with coexisting ferroelectric and relaxor states. <i>Journal of Materials Science</i> , <b>2013</b> , 48, 7920-7926	4.3	5
17	Orienting anisometric pores in ferroelectrics: Piezoelectric property engineering through local electric field distributions. <i>Physical Review Materials</i> , <b>2019</b> , 3,	3.2	5
16	Direct observation of domain wall motion and lattice strain dynamics in ferroelectrics under high-power resonance. <i>Physical Review B</i> , <b>2021</b> , 103,	3.3	5
15	Polarization Rotation at Morphotropic Phase Boundary in New Lead-Free NaBiVTiO Piezoceramics. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2021</b> , 13, 5208-5215	9.5	5
14	<sup>23</sup> Na NMR Spectroscopic Quantification of the Antiferroelectric-Ferroelectric Phase Coexistence in Sodium Niobate. <i>Journal of Physical Chemistry C</i> , <b>2020</b> , 124, 23852-23858	3.8	4
13	Na <sub>1/2</sub> Bi <sub>1/2</sub> VO <sub>3</sub> and K <sub>1/2</sub> Bi <sub>1/2</sub> VO <sub>3</sub> : New Lead-Free Tetragonal Perovskites with Moderate c/a Ratios. <i>Chemistry of Materials</i> , <b>2018</b> , 30, 6728-6736	9.6	4
12	Origin of high-power drive stability in (Na <sub>1/2</sub> Bi <sub>1/2</sub> )TiO <sub>3</sub> -BaTiO <sub>3</sub> based piezoceramics. <i>Acta Materialia</i> , <b>2022</b> , 227, 117703	8.4	3
11	Domain morphology of newly designed lead-free antiferroelectric NaNbO <sub>3</sub> -SrSnO <sub>3</sub> ceramics. <i>Journal of the American Ceramic Society</i> , <b>2021</b> , 104, 3715-3725	3.8	3
10	NaNbO <sub>3</sub> -based antiferroelectric multilayer ceramic capacitors for energy storage applications. <i>Journal of the European Ceramic Society</i> , <b>2021</b> , 41, 5519-5525	6	3
9	Ferroelastic Properties of PZT: Characterization Under Compressive and Tensile Stress, Finite-Element Simulation, and Lifetime Calculation. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , <b>2018</b> , 65, 1542-1551	3.2	2
8	Multifunctional Cantilevers as Working Elements in Solid-State Cooling Devices. <i>Actuators</i> , <b>2021</b> , 10, 58	2.4	2
7	Review of methods for powder-based processing <b>2018</b> , 95-120		2
6	Thermal stability of the electromechanical properties in acceptor-doped and composite-hardened (Na <sub>1/2</sub> Bi <sub>1/2</sub> )TiO <sub>3</sub> -BaTiO <sub>3</sub> ferroelectrics. <i>Journal of Applied Physics</i> , <b>2021</b> , 130, 014101	2.5	2
5	Multistep stochastic mechanism of polarization reversal in rhombohedral ferroelectrics. <i>Physical Review B</i> , <b>2020</b> , 102,	3.3	1

4	Electroceramics XVII - The 2020 virtual conference experience at TU Darmstadt. <i>Open Ceramics</i> , <b>2021</b> , 6, 100114	3.3	o
3	Influence of Defects on the Schottky Barrier Height at BaTiO <sub>3</sub> /RuO <sub>2</sub> Interfaces. <i>Physica Status Solidi (A) Applications and Materials Science</i> , <b>2021</b> , 218, 2100143	1.6	o
2	Lead-Free Piezoelectric Ceramics <b>2021</b> , 358-368		o
1	Polar Oxide Nanopowders Prepared by Mechanical Treatments <b>2015</b> , 641-661		