

Lukyanchuk A Igor

List of Publications by Year in descending order

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128
papers

3,249
citations

159585

30
h-index

161849

54
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129
all docs

129
docs citations

129
times ranked

3435
citing authors

#	ARTICLE	IF	CITATIONS
1	Lead-free nanocomposite piezoelectric nanogenerator film for biomechanical energy harvesting. <i>Nano Energy</i> , 2021, 81, 105661.	16.0	79
2	Dynamics of polarization vortices revealed in a ferroelectric material. <i>Nature</i> , 2021, 592, 359-360.	27.8	3
3	Crystal Structure and the Spectral Response of the Ba-Doped SrTiO ₃ Incipient Ferroelectrics. <i>Physica Status Solidi (B): Basic Research</i> , 2021, 258, 2100010.	1.5	5
4	Thermal-stability of the enhanced piezoelectric, energy storage and electrocaloric properties of a lead-free BCZT ceramic. <i>RSC Advances</i> , 2021, 11, 9459-9468.	3.6	33
5	Built-in electric field induces polarization rotation in bilayer BiFeO ₃ /(Ba,Sr)TiO ₃ thin films. <i>Journal of Alloys and Compounds</i> , 2020, 812, 152164.	5.5	2
6	Thermally-stable high energy storage performances and large electrocaloric effect over a broad temperature span in lead-free BCZT ceramic. <i>RSC Advances</i> , 2020, 10, 30746-30755.	3.6	43
7	Hopfions emerge in ferroelectrics. <i>Nature Communications</i> , 2020, 11, 2433.	12.8	47
8	Controllable skyrmion chirality in ferroelectrics. <i>Scientific Reports</i> , 2020, 10, 8657.	3.3	26
9	High energy storage efficiency and large electrocaloric effect in lead-free BaTi _{0.89} Sn _{0.11} O ₃ ceramic. <i>Ceramics International</i> , 2020, 46, 23867-23876.	4.8	47
10	Observation of Unconventional Dynamics of Domain Walls in Uniaxial Ferroelectric Lead Germanate. <i>Advanced Functional Materials</i> , 2020, 30, 2000284.	14.9	14
11	Development of Programmable Logic Array for Multiple-Valued Logic Functions. <i>IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems</i> , 2020, 39, 4854-4866.	2.7	10
12	Application of Generalized Reed-Muller Expression for Development of Non-Binary Circuits. <i>Electronics (Switzerland)</i> , 2020, 9, 12.	3.1	12
13	Enhanced dielectric and electrocaloric properties in lead-free rod-like BCZT ceramics. <i>Journal of Advanced Ceramics</i> , 2020, 9, 210-219.	17.4	45
14	Structural, Dielectric, and Magnetic Properties of Multiferroic (1 - x) La _{0.5} Ca _{0.5} MnO ₃ -(x) BaTi _{0.8} Sn _{0.2} O ₃ Laminated Composites. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2019, 66, 1935-1941.	3.0	3
15	Structural, dielectric and electrocaloric properties of (Ba _{0.85} Ca _{0.15})(Ti _{0.9} Zr _{0.1}) _{1-x} Sn _x O ₃ ceramics elaborated by sol-gel method. <i>Journal of Materials Science: Materials in Electronics</i> , 2019, 30, 14099-14111.	2.2	11
16	Synthesis of La _{0.5} Ca _{0.5} 1-xMnO ₃ nanocrystalline manganites by sucrose assisted auto combustion route and study of their structural, magnetic and magnetocaloric properties. <i>Journal of Materials Science: Materials in Electronics</i> , 2019, 30, 20459-20470.	2.2	5
17	New algorithm for Multi-Valued Decision Diagram construction. , 2019, , .		0
18	Ferroelectric multiple-valued logic units. <i>Ferroelectrics</i> , 2019, 543, 213-221.	0.6	3

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19	Ferroelectric negative capacitance. Nature Reviews Materials, 2019, 4, 243-256.	48.7	179
20	Harnessing ferroelectric domains for negative capacitance. Communications Physics, 2019, 2, .	5.3	36
21	Application of Generalised Reed-Muller Expansion in Development of Programmable Logic Array. , 2019, , .		0
22	Enhancement of dielectric properties of lead-free BCZT ferroelectric ceramics by grain size engineering. Superlattices and Microstructures, 2019, 127, 109-117.	3.1	47
23	Impedance spectroscopy analysis of the diffuse phase transition in lead-free (Ba _{0.85} Ca _{0.15})(Zr _{0.1} Ti _{0.9})O ₃ ceramic elaborated by sol-gel method. Superlattices and Microstructures, 2019, 127, 71-79.	3.1	14
24	Impedance spectroscopy studies on lead free Ba _{1-x} Mg _x (Ti _{0.9} Zr _{0.1})O ₃ ceramics. Superlattices and Microstructures, 2018, 118, 45-54.	3.1	5
25	Multilayer phosphorene quantum dots in an electric field: Energy levels and optical absorption. Journal of Applied Physics, 2018, 124, .	2.5	15
26	Gate-tunable electron interaction in high- ϵ^r dielectric films. Scientific Reports, 2017, 7, 42770.	3.3	2
27	Ferroelectric symmetry-protected multibit memory cell. Scientific Reports, 2017, 7, 42196.	3.3	45
28	Electro-optical properties of phosphorene quantum dots. Physical Review B, 2017, 96, .	3.2	48
29	Lattice dynamics and structural distortions in the multiferroic (Ba,Sr)TiO ₃ /(Bi,Nd)FeO ₃ heterostructures. Thin Solid Films, 2017, 636, 220-224.	1.8	4
30	Nondestructive method of thin-film dielectric constant measurements by two-wire capacitor. Physica Status Solidi (B): Basic Research, 2017, 254, 1600476.	1.5	2
31	Unexpectedly high Curie temperature in weakly strained ferroelectric film. Physica Status Solidi (B): Basic Research, 2017, 254, 1600413.	1.5	3
32	Electro-absorption of silicene and bilayer graphene quantum dots. Journal of Applied Physics, 2016, 120, .	2.5	34
33	Investigation of diffuse phase transition in ferroelectric Pb ₂ ^x K _{1+x} Li _x Nb ₅ O ₁₅ (0 \leq x \leq 1.5) ceramics. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	2.3	1
34	Phase transition in ferroelectric BaTiO ₃ /SrTiO ₃ superlattice: Raman spectroscopy studies. Ferroelectrics, 2016, 501, 61-69.	0.6	4
35	Negative capacitance in multidomain ferroelectric superlattices. Nature, 2016, 534, 524-528.	27.8	286
36	The Anisotropy Induced by a Magnetostriction in Exchange-Biased Two-Layer Films. Metallofizika i Noveishie Tekhnologii, 2016, 36, 1453-1464.	0.5	1

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37	Multidomain switching in the ferroelectric nanodots. Europhysics Letters, 2015, 111, 50001.	2.0	16
38	Tuning of zero energy states in quantum dots of Silicene and bilayer graphene by electric field. Superlattices and Microstructures, 2015, 87, 137-142.	3.1	12
39	Coexistence of the soft mode and sub-THz central peak in ferroelectric BaTiO ₃ /(Ba,Sr)TiO ₃ superlattices. Superlattices and Microstructures, 2015, 87, 19-24.	3.1	7
40	Electronic and magnetic properties of graphite quantum dots. Low Temperature Physics, 2015, 41, 396-400.	0.6	15
41	Dynamics of field-induced polarization reversal in thin strained perovskite ferroelectric films with c -oriented polarization. Physical Review B, 2015, 91, .	3.2	12
42	Rayleigh instability of confined vortex droplets in critical superconductors. Nature Physics, 2015, 11, 21-25.	16.7	22
43	High-Symmetry Polarization Domains in Low-Symmetry Ferroelectrics. Nano Letters, 2014, 14, 6931-6935.	9.1	24
44	On the nature of phase transitions in the tetragonal tungsten bronze GdK ₂ Nb ₅ O ₁₅ ceramics. Journal of Applied Physics, 2014, 115, 064104.	2.5	31
45	Quantum oscillations as the tool for study of new functional materials (Review Article). Low Temperature Physics, 2014, 40, 270-279.	0.6	12
46	Polarization vortex domains induced by switching electric field in ferroelectric films with circular electrodes. Physical Review B, 2014, 90, .	3.2	20
47	Phase transition in a single VO ₂ nano-crystal: potential femtosecond tunable opto-electronic nano-gating. Journal of Nanoparticle Research, 2014, 16, 1.	1.9	34
48	Longitudinal and Transversal Polarization Switching in Strained Ferroelectrics. Ferroelectrics, 2014, 461, 22-28.	0.6	2
49	Resistive Switching Hysteresis in Thin Films of Bismuth Ferrite. Ferroelectrics, 2013, 444, 183-189.	0.6	5
50	Magnetic properties of graphene quantum dots. Physical Review B, 2013, 87, .	3.2	52
51	Frequency Dependence of the Dielectric Permittivity in Ferroelectric Thin Films with 180° Domain Structure. Ferroelectrics, 2013, 444, 177-182.	0.6	8
52	Studies of Diffuse Phase Transition in Ferroelectric Solid Solution Pb _{1-x} K _{2x} Nb ₂ O ₆ (x = 0.1, 0.2, 0.25 and 0.3). Ferroelectrics, 2013, 444, 116-124.	0.6	10
53	Anomalous thermoelectric and thermomagnetic properties of graphene. Physics-Uspexhi, 2012, 55, 1146-1151.	2.2	21
54	Switching Properties of Nano-scale Multi-axial Ferroelectrics: Geometry and Interface Effects. Integrated Ferroelectrics, 2012, 133, 96-102.	0.7	8

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55	Inhomogeneous Polarization Switching in Finite-Size Cubic Ferroelectrics. <i>Ferroelectrics</i> , 2012, 427, 34-40.	0.6	5
56	Dielectric properties and relaxation phenomena in the diffuse ferroelectric phase transition in K ₃ Li ₂ Nb ₅ O ₁₅ ceramic. <i>European Physical Journal B</i> , 2012, 85, 1.	1.5	22
57	Giant Nernst-Ettingshausen Oscillations in Semiclassically Strong Magnetic Fields. <i>Physical Review Letters</i> , 2011, 107, 016601.	7.8	30
58	Dielectric and structural properties of diffuse ferroelectric phase transition in Pb _{1.85} K _{1.15} Li _{0.15} Nb ₅ O ₁₅ ceramic. <i>EPJ Applied Physics</i> , 2011, 53, 20901.	0.7	4
59	Phase diagram of ferroelectric thin film with diluted surface. <i>Superlattices and Microstructures</i> , 2011, 49, 307-313.	3.1	2
60	Field-induced vortices in weakly anisotropic ferroelectrics. <i>Superlattices and Microstructures</i> , 2011, 49, 314-317.	3.1	4
61	Phase diagram and dielectric properties of ferroelectric ceramics. <i>Superlattices and Microstructures</i> , 2011, 49, 300-306.	3.1	10
62	Density of states in randomly shaped graphene quantum dots. <i>Superlattices and Microstructures</i> , 2011, 49, 283-287.	3.1	15
63	Vortex state in thin films of multicomponent ferroelectrics. <i>Thin Solid Films</i> , 2011, 519, 5808-5810.	1.8	10
64	De Haas-van Alphen effect in 2D systems: application to mono- and bilayer graphene. <i>Low Temperature Physics</i> , 2011, 37, 45-48.	0.6	18
65	Satellite Desertification Monitoring in Sahara. <i>NATO Science for Peace and Security Series C: Environmental Security</i> , 2011, , 241-244.	0.2	0
66	Monte Carlo Study of Ferroelectric Properties of Tetragonal Tungsten Bronze Compounds. <i>Ferroelectrics</i> , 2010, 397, 1-8.	0.6	5
67	Comment on "Consistent Interpretation of the Low-Temperature Magnetotransport in Graphite Using the Slonczewski-Weiss-McClure 3D Band-Structure Calculations"; <i>Physical Review Letters</i> , 2010, 104, 119701; author reply 119702.	7.8	9
68	Study of Ferroelectric Bi _{3.25} La _{0.75} Ti ₃ O ₁₂ Thin Films Deposited by Sol-Gel Method. <i>Ferroelectrics</i> , 2010, 397, 112-121.	0.6	2
69	Mesoscopic Metal-Insulator Transition at Ferroelastic Domain Walls in VO ₂ . <i>ACS Nano</i> , 2010, 4, 4412-4419.	14.6	68
70	Interplay between Ferroelastic and Metal-Insulator Phase Transitions in Strained Quasi-Two-Dimensional VO ₂ Nanoplatelets. <i>Nano Letters</i> , 2010, 10, 2003-2011.	9.1	101
71	Symmetry Relationship and Strain-Induced Transitions between Insulating M1 and M2 and Metallic R phases of Vanadium Dioxide. <i>Nano Letters</i> , 2010, 10, 4409-4416.	9.1	149
72	Origin of ferroelastic domains in free-standing single-crystal ferroelectric films. <i>Physical Review B</i> , 2009, 79, .	3.2	46

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73	Searching for the Fractional Quantum Hall Effect in Graphite. Physical Review Letters, 2009, 103, 116802.	7.8	33
74	Effect of wall thickness on the ferroelastic domain size of BaTiO ₃ . Journal of Materials Science, 2009, 44, 5307-5311.	3.7	15
75	Dirac Fermions in graphite: The state of art. Physica B: Condensed Matter, 2009, 404, 404-406.	2.7	20
76	Universal Properties of Ferroelectric Domains. Physical Review Letters, 2009, 102, 147601.	7.8	51
77	Phase diagrams of ferroelectric thin film with two surface layers. EPJ Applied Physics, 2009, 48, 10503.	0.7	11
78	Charge ordering in amorphous WO _x films. Physica B: Condensed Matter, 2008, 403, 1211-1212.	2.7	0
79	Catalytic Studies of RuO ₂ Films Deposited on Ferroelectrics Films by Spin Coating Process. Ferroelectrics, 2008, 371, 34-42.	0.6	1
80	Temperature Evolution of 180° Ferroelectric Domains in Thin Ferroelectric Films. Ferroelectrics, 2008, 372, 41-46.	0.6	0
81	STABILITY OF VORTEX PHASES IN FERROELECTRIC EASY-PLANE NANO-CYLINDERS. Integrated Ferroelectrics, 2008, 99, 60-66.	0.7	36
82	Lattice-Induced Double-Valley Degeneracy Lifting in Graphene by a Magnetic Field. Physical Review Letters, 2008, 100, 176404.	7.8	27
83	180° Ferroelectric Domains in Thin Films and Superlattices. NATO Science for Peace and Security Series B: Physics and Biophysics, 2008, , 221-236.	0.3	0
84	Ferroelectric Domains in Thin Films and Superlattices: Results of Numerical Modeling. Ferroelectrics, 2007, 359, 14-20.	0.6	7
85	Ferroelectric Phases in Rare-Earth TTB Ferroelectric Compounds $Pb_{2(1-x)}K_{(1+x)}Tj$ $ETQq110.784314rgBJ/Overl$	0.6	5
86	Landau thermodynamic potential for BaTiO ₃ . Journal of Applied Physics, 2007, 101, 104115.	2.5	99
87	Catalytic behaviors of ruthenium dioxide films deposited on ferroelectrics substrates, by spin coating process. Applied Surface Science, 2007, 254, 1399-1404.	6.1	4
88	The transverse spin-12 Ising order-disorder superlattice. Physica A: Statistical Mechanics and Its Applications, 2007, 374, 127-138.	2.6	4
89	Charge ordering in amorphous WO _x films. Physics Letters, Section A: General, Atomic and Solid State Physics, 2007, 368, 419-422.	2.1	8
90	Dirac and Normal Fermions in Graphite and Graphene: Implications of the Quantum Hall Effect. Physical Review Letters, 2006, 97, 256801.	7.8	95

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91	Dielectric nonlinearity and polarization anharmonicity of BaTiO ₃ . Applications of Ferroelectrics, IEEE International Symposium on, 2006, , .	0.0	0
92	Modeling of ferroelectric domains in thin films and superlattices. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2005, 120, 16-20.	3.5	48
93	Phase Transition Proper of Ferroelectric Superlattice with three Alternative Layers from Ising Model in a Transverse Field. Physica Scripta, 2005, 72, 265-273.	2.5	3
94	Domain-Enhanced Interlayer Coupling in Ferroelectric/Paraelectric Superlattices. Physical Review Letters, 2005, 94, 047601.	7.8	156
95	Phase Analysis of Quantum Oscillations in Graphite. Physical Review Letters, 2004, 93, 166402.	7.8	234
96	Structural and Dynamical Aspects of Structural Phase Transitions on Incommensurate A ₂ BX ₄ compounds. Ferroelectrics, 2004, 305, 75-78.	0.6	0
97	Polarization Rotation in the Incommensurate Phase of Sn ₂ P ₂ (S ₆ xS ₁ â€“x) ₆ . Ferroelectrics, 2004, 302, 137-141.	0.6	1
98	Study of new rare earth family Pb ₁₋₆ K ₁₋₂ R ₀₋₂ Nb ₅ O ₁₅ (R=La, Nd, Sm, Eu and Gd) of tetragonal tungsten bronze-type ferroelectrics. Solid State Communications, 2004, 130, 777-781.	1.9	10
99	Ferroelectric transition in an epitaxial barium titanate thin film: Raman spectroscopy and x-ray diffraction study. Journal of Applied Physics, 2003, 94, 3307-3312.	2.5	138
100	Anomalous Light Scattering in Quartz: Ferroelastic-ELT Versus Non Equilibrium-EQT Model. Ferroelectrics, 2003, 290, 97-104.	0.6	2
101	Domain Proximity and Ferroelectric Transition in Ferro-Paraelectric Superlattices. Ferroelectrics, 2003, 291, 169-175.	0.6	3
102	Ferroelectric Phase in Barium Titanate Epitaxial Thin Film. Ferroelectrics, 2003, 291, 55-64.	0.6	6
103	Interaction of vortices in superconductors with $\hat{\rho}$ close to 1/2. Physical Review B, 2002, 65, .	3.2	26
104	Conductivity and field and current distributions in a two-component system composed of regular triangles. Journal of Experimental and Theoretical Physics, 2002, 94, 203-215.	0.9	4
105	Theory of superconductors with $\hat{\rho}$ close to 1/2. Physical Review B, 2001, 63, .	3.2	43
106	Thermodynamics of the incommensurate state in Rb ₂ WO ₄ : The Lifshitz point in A ₂ BX ₄ compounds. Physical Review B, 2000, 61, 3147-3150.	3.2	11
107	Comment on 'Inhomogeneities and birefringence in quartz'. Journal of Physics Condensed Matter, 1999, 11, 8169-8173.	1.8	3
108	Phase transition between the cholesteric and twist grain boundary C phases. Physical Review E, 1998, 57, 574-581.	2.1	25

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109	Basal-plane incommensurate phases in hexagonal-close-packed structures. <i>Physical Review B</i> , 1998, 57, 5086-5092.	3.2	21
110	Domain textures of multi-qmodulated phases. <i>Ferroelectrics</i> , 1997, 191, 267-273.	0.6	7
111	Superconducting RNi ₂ B ₂ C (R = Y, Lu) nanoparticles: Size effects and weak links. <i>Advanced Materials</i> , 1997, 9, 503-506.	21.0	5
112	Insulator-metal transition in Rb ₄ C ₆₀ under pressure: Jahn-Teller theory versus NMR experiments. <i>Synthetic Metals</i> , 1996, 77, 205-208.	3.9	11
113	TGB C phase in liquid crystals—the analog of vortex state in space modulated superconductors. <i>European Physical Journal D</i> , 1996, 46, 1835-1836.	0.4	0
114	Insulator-metal transition in Rb ₄ C ₆₀ under pressure from ¹³ C-NMR. <i>Journal of Physics and Chemistry of Solids</i> , 1996, 57, 143-152.	4.0	47
115	A novel type of incommensurate phase in quartz: The elongated-triangle phase. <i>JETP Letters</i> , 1996, 64, 410-415.	1.4	17
116	High-resolution ¹³ C NMR study of oxygen intercalation in C ₆₀ . <i>Physical Review B</i> , 1996, 53, 7535-7538.	3.2	17
117	Nearly isotropic d-wave pairing in UPt ₃ . <i>Physica B: Condensed Matter</i> , 1995, 206-207, 577-579.	2.7	0
118	Electronic localization in Rb ₄ C ₆₀ from bulk magnetic measurements. <i>Physical Review B</i> , 1995, 51, 3978-3980.	3.2	38
119	Intercalation in C ₆₀ : High resolution ¹³ C NMR results. <i>Synthetic Metals</i> , 1995, 70, 1431-1434.	3.9	1
120	Phase transitions in the mixed state of superconductors with anisotropic pairing. <i>Physica B: Condensed Matter</i> , 1994, 194-196, 1971-1972.	2.7	0
121	High-resolution NMR in alkali intercalated C ₆₀ . <i>Physica C: Superconductivity and Its Applications</i> , 1994, 235-240, 767-768.	1.2	0
122	Model of isotropic d-wave pairing in UPt ₃ . <i>Physica C: Superconductivity and Its Applications</i> , 1994, 235-240, 2447-2448.	1.2	0
123	High-resolution ¹³ C nuclear magnetic resonance in alkali intercalated fullerene C ₆₀ . <i>Journal of Chemical Physics</i> , 1994, 101, 4585-4592.	3.0	23
124	Symmetry of the mixed state of superconductors with anisotropic pairing. <i>Physica C: Superconductivity and Its Applications</i> , 1993, 206, 373-386.	1.2	3
125	Comment on Ginzburg-Landau theory of the phase diagram of superconducting UPt ₃ . <i>Physical Review Letters</i> , 1993, 71, 1957-1957.	7.8	3
126	Symmetry of electronic states in antiferromagnets; applications to CuO ₂ planes. <i>Physica C: Superconductivity and Its Applications</i> , 1991, 185-189, 1583-1584.	1.2	0

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127	Superconducting mixed state symmetry for an anisotropic pairing near H_{c2} and phase transitions in $U\text{Pt}_3$. <i>Physica C: Superconductivity and Its Applications</i> , 1991, 185-189, 2629-2630.	1.2	1
128	ASSESSING VEGETATION STRUCTURAL CHANGES IN OASIS AGRO-ECOSYSTEMS USING SENTINEL-2 IMAGE TIME SERIES: CASE STUDY FOR DRÄA-TAFILALET REGION MOROCCO. <i>International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives</i> , 0, XLII-4/W12, 69-73.	0.2	1