Kristof Szot

List of Publications by Citations

128 papers	9,523 citations	31 h-index	97 g-index
137 ext. papers	10,294 ext. citations	3.5 avg, IF	6.01 L-index

#	Paper	IF	Citations
128	Redox-Based Resistive Switching Memories Nanoionic Mechanisms, Prospects, and Challenges. *Advanced Materials*, **2009**, 21, 2632-2663	24	3799
127	Switching the electrical resistance of individual dislocations in single-crystalline SrTiO3. *Nature Materials*, **2006**, 5, 312-20	27	1406
126	Resistive switching mechanism of TiO2 thin films grown by atomic-layer deposition. *Journal of Applied Physics*, **2005**, 98, 033715	2.5	938
125	Localized metallic conductivity and self-healing during thermal reduction of SrTiO3. *Physical Review Letters*, **2002**, 88, 075508	7.4	250
124	TiO2--a prototypical memristive material. *Nanotechnology*, **2011**, 22, 254001	3.4	237
123	Surfaces of reduced and oxidized SrTiO3 from atomic force microscopy. *Physical Review B*, **1999**, 60, 5909-5926	3.3	216
122	Piezoresponse force microscopy of lead titanate nanograins possibly reaching the limit of ferroelectricity. *Applied Physics Letters*, **2002**, 81, 5231-5233	3.4	151
121	Nanoscale resistive switching in SrTiO3 thin films. *Physica Status Solidi - Rapid Research Letters*, **2007**, 1, R86-R88	2.5	131
120	Bremsstrahlung isochromat spectra and density-of-states calculations for the 3d and 4d transition metals. *Physical Review B*, **1984**, 30, 6921-6930	3.3	123
119	Formation of micro-crystals on the (100) surface of SrTiO3 at elevated temperatures. *Surface Science*, **2000**, 460, 112-128	1.8	113
118	Size distribution of Ge islands grown on Si(001). *Applied Physics Letters*, **1997**, 71, 410-412	3.4	98
117	Ionic conduction in zirconia films of nanometer thickness. *Acta Materialia*, **2005**, 53, 5161-5166	8.4	96
116	Method to distinguish ferroelectric from nonferroelectric origin in case of resistive switching in ferroelectric capacitors. *Applied Physics Letters*, **2008**, 92, 062907	3.4	83
115	Restructuring of the surface region in SrTiO3. *Applied Physics A: Materials Science and Processing*, **1996**, 64, 55-59	2.6	71
114	Towards the limit of ferroelectric nanosized grains. *Nanotechnology*, **2003**, 14, 250-253	3.4	66
113	The influence of copper top electrodes on the resistive switching effect in TiO2 thin films studied by conductive atomic force microscopy. *Applied Physics Letters*, **2009**, 95, 013109	3.4	64
112	Piezoresponse in the light of surface adsorbates: Relevance of defined surface conditions for perovskite materials. *Applied Physics Letters*, **2004**, 85, 2896-2898	3.4	64

111	Impact of the electroforming process on the device stability of epitaxial Fe-doped SrTiO3 resistive switching cells. *Journal of Applied Physics*, **2009**, 106, 114507	2.5	62
110	Realization of regular arrays of nanoscale resistive switching blocks in thin films of Nb-doped SrTiO3. *Applied Physics Letters*, **2008**, 93, 023110	3.4	53
109	Birefringence aboveTcin single crystals of barium titanate. *Journal of Physics Condensed Matter*, **2008**, 20, 142202	1.8	52
108	Nature of the Resistive Switching Phenomena in TiO2 and SrTiO3. *Solid State Physics*, **2014**, 353-559	2	46
107	Electrostrictive and Piezoelectric Effect in BaTiO3 and PbZrO3. *Ferroelectrics*, **2006**, 336, 61-67	0.6	45
106	Spectroscopic study of the electric field induced valence change of Fe-defect centers in SrTiO3. *Physical Chemistry Chemical Physics*, **2011**, 13, 20779-86	3.6	43
105	Electro-degradation and resistive switching of Fe-doped SrTiO3 single crystal. *Journal of Applied Physics*, **2013**, 113, 083713	2.5	41
104	Cluster-like resistive switching of SrTiO3:Nb surface layers. *New Journal of Physics*, **2013**, 15, 103017	2.9	40
103	Dielectric and pyroelectric properties of Nb-doped Pb(Zr0.92Ti0.08)O3 ceramics. *Journal of the European Ceramic Society*, **2000**, 20, 1003-1010	6	39
102	Microscopic nature of the metal to insulator phase transition induced through electroreduction in single-crystal KNbO3. *Applied Physics Letters*, **1992**, 60, 1190-1192	3.4	38
101	Analysis of shape effects on the piezoresponse in ferroelectric nanograins with and without adsorbates. *Applied Physics Letters*, **2005**, 87, 082901	3.4	37
100	Comparison of in-plane and out-of-plane optical amplification in AFM measurements. *Review of Scientific Instruments*, **2005**, 76, 046101	1.7	33
99	Influence of Dislocations in Transition Metal Oxides on Selected Physical and Chemical Properties. *Crystals*, **2018**, 8, 241	2.3	31
98	Detection of Fe2+ valence states in Fe doped SrTiO3 epitaxial thin films grown by pulsed laser deposition. *Physical Chemistry Chemical Physics*, **2013**, 15, 8311-7	3.6	29
97	Controlled local filament growth and dissolution in Ag□e□e. *Physica Status Solidi - Rapid Research Letters*, **2008**, 2, 129-131	2.5	27
96	Quasi-two-dimensional conducting layer on TiO2 (110) introduced by sputtering as a template for resistive switching. *Applied Physics Letters*, **2013**, 102, 131604	3.4	26
95	Microscopy (AFM, TEM, SEM) studies of oxide scale formation on FeCrAl based ODS alloys. *Solid State Ionics*, **1999**, 117, 13-20	3.3	26
94	In situ study of redox processes on the surface of SrTiO3 single crystals. *Applied Surface Science*, **2018**, 432, 46-52	6.7	24

93	XPS studies of perovskites surface instability caused by Ar+ ion and electron bombardment and metal deposition. *Vacuum*, **2009**, 83, S69-S72	3.7	24
92	Photoemission study of SrTiO3 surface layers instability upon metal deposition. *Applied Physics A: Materials Science and Processing*, **2007**, 89, 451-455	2.6	23
91	Surface chemistry and molecular reactions on KNbO3 single crystal surfaces. *Surface Science*, **1993**, 280, 179-184	1.8	23
90	Layer structures BaO-BaTiO3 in the region of p-type conductivity on the surface of BaTiO3. *Applied Physics A: Solids and Surfaces*, **1991**, 53, 563-567		22
89	Resistive Switching of a Quasi-Homogeneous Distribution of Filaments Generated at Heat-Treated TiO2 (110)-Surfaces. *Advanced Functional Materials*, **2015**, 25, 6382-6389	15.6	21
88	Insulator-to-metal transition of SrTiO3:Nb single crystal surfaces induced by Ar+ bombardment. *Applied Physics Letters*, **2013**, 102, 101603	3.4	21
87	Surface defect segregation in the perovskite-type ferroelectric KNbO3. *Applied Physics Letters*, **1986**, 48, 490-492	3.4	21
86	Nano-scale chemical and structural segregation induced in surface layer of NaNbO3 crystals with thermal treatment at oxidising conditions studied by XPS, AFM, XRD, and electric properties tests. *Phase Transitions*, **2009**, 82, 662-682	1.3	20
85	Surface layer of SrRuO3 epitaxial thin films under oxidizing and reducing conditions. *Journal of Applied Physics*, **2007**, 101, 023701	2.5	20
84	The role of water in resistive switching in graphene oxide. *Applied Physics Letters*, **2015**, 106, 263104	3.4	19
83	Insulator□metal transition in Mn-doped NaNbO3 induced by chemical and thermal treatment. *Phase Transitions*, **2008**, 81, 977-986	1.3	19
82	Surface layer on KNbO3 and the hysteresis loop anomaly. *Journal of Physics and Chemistry of Solids*, **1996**, 57, 1765-1775	3.9	19
81	Dielectric properties and phase transition in SrBi2Nb2O9□SrBi2Ta2O9 solid solution. *Ceramics International*, **2009**, 35, 2351-2355	5.1	18
80	Sample-tip interaction of piezoresponse force microscopy in ferroelectric nanostructures. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **2006**, 53, 2253-60	3.2	18
79	Chemical inhomogeneity in the near-surface region of KTaO3evolving at elevated temperatures. *Journal of Physics Condensed Matter*, **2000**, 12, 4687-4697	1.8	18
78	Non-Linear Properties of BaTiO3 above T C. *Ferroelectrics*, **2008**, 375, 165-169	0.6	17
77	Electrical conductivity and segregation effects of doped SrTiO3 thin films. *Journal of the European Ceramic Society*, **2001**, 21, 1673-1676	6	17
76	Inhomogeneity of donor doping in SrTiO3 substrates studied by fluorescence-lifetime imaging microscopy. *Applied Physics Letters*, **2013**, 103, 162904	3.4	15

75	SrZrO3 Nanopatterning Using Self-Organized SrRuO3 as a Template. *Advanced Materials*, **2005**, 17, 281-284	24	15
74	Current channeling along extended defects during electroreduction of SrTiO. *Scientific Reports*, **2019**, 9, 2502	4.9	14
73	Precursor dynamics to the structural instability in SrTiO3. *Phase Transitions*, **2012**, 85, 939-948	1.3	14
72	Metal-organic chemical-vapor deposition of (Ba,Sr)TiO3: Nucleation and growth on Pt-(111). *Journal of Applied Physics*, **2005**, 98, 084904	2.5	14
71	Electronic structure of some Heusler alloys based on aluminum and tin. *Physical Review B*, **2002**, 65,	3.3	14
70	Restructuring the surface region of donor doped SrTiO3 single crystals under oxidizing conditions. *Ferroelectrics*, **1999**, 224, 323-329	0.6	14
69	Local surface conductivity of transition metal oxides mapped with true atomic resolution. *Nanoscale*, **2018**, 10, 11498-11505	7.7	14
68	Local conductivity of epitaxial Fe-doped SrTiO3 thin films. *Phase Transitions*, **2011**, 84, 483-488	1.3	13
67	Self-reduction of the native TiO (110) surface during cooling after thermal annealing - in-operando investigations. *Scientific Reports*, **2019**, 9, 12563	4.9	12
66	SrTiO3 surface modification upon low energy Ar+ bombardment studied by XPS. *Vacuum*, **2016**, 131, 14-21	3.7	12
65	Low temperature reduction in Ta□ and Nb□ thin films. *Journal Physics D: Applied Physics*, **2014**, 47, 135301	3	12
64	Electronic structure of epitaxial Fe-doped SrTiO3 thin films. *Phase Transitions*, **2011**, 84, 489-500	1.3	12
63	Nature of the surface layer in ABO 3 -type perovskites at elevated temperatures. *Applied Physics A: Materials Science and Processing*, **1996**, 62, 335-343	2.6	12
62	Stability and Decomposition of Perovskite-Type Titanates upon High-Temperature Reduction. *Physica Status Solidi - Rapid Research Letters*, **2017**, 11, 1700222	2.5	11
61	Metal□Insulator transition induced by non-stoichiometry of surface layer and molecular reactions on single crystal KTaO3. *Surface Science*, **2012**, 606, 1252-1262	1.8	11
60	The thermal stability of Pt/Ir coated AFM tips for resistive switching measurements. *Applied Surface Science*, **2011**, 257, 7627-7632	6.7	11
59	Nature of the surface layer in ABO3-type perovskites at elevated temperatures. *Applied Physics A: Materials Science and Processing*, **1996**, 62, 335-343	2.6	11
58	Impact of composition and crystallization behavior of atomic layer deposited strontium titanate films on the resistive switching of Pt/STO/TiN devices. *Journal of Applied Physics*, **2014**, 116, 064503	2.5	10

57	Influence of adsorbates on the piezoresponse of KNbO3. *Physica Status Solidi (A) Applications and Materials Science*, **2006**, 203, 616-621	1.6	10
56	Contributions to in-plane piezoresponse on axially symmetrical samples. *Review of Scientific Instruments*, **2005**, 76, 106108	1.7	10
55	Cation Loss of BaCa0.393Nb0.606O2.91 in Aqueous Media: Amorphization at Room Temperature. *Journal of Solid State Chemistry*, **2000**, 149, 262-275	3.3	10
54	Experimental Determination of the Electronic Structure of Solid C 60 ; Evidence for Extended Solidlike Electronic States. *Europhysics Letters*, **1991**, 16, 437-442	1.6	10
53	Impact of Fe doping on the electronic structure of SrTiO thin films determined by resonant photoemission. *Journal of Chemical Physics*, **2018**, 148, 154702	3.9	9
52	Tuning the surface structure and conductivity of niobium-doped rutile TiO single crystals via thermal reduction. *Physical Chemistry Chemical Physics*, **2017**, 19, 30339-30350	3.6	9
51	Insulator□emiconductor□metallic state transition induced by electric fields in Mn-doped NaNbO3. *Physica Status Solidi - Rapid Research Letters*, **2009**, 3, 127-129	2.5	9
50	A bottom-up process of self-formation of highly conductive titanium oxide (TiO) nanowires on reduced SrTiO. *Nanoscale*, **2018**, 11, 89-97	7.7	9
49	In-situ four-tip STM investigation of the transition from 2D to 3D charge transport in SrTiO. *Scientific Reports*, **2019**, 9, 2476	4.9	8
48	Electrically controlled transformation of memristive titanates into mesoporous titanium oxides via incongruent sublimation. *Scientific Reports*, **2018**, 8, 3774	4.9	8
47	Kelvin probe force microscopy work function characterization of transition metal oxide crystals under ongoing reduction and oxidation. *Beilstein Journal of Nanotechnology*, **2019**, 10, 1596-1607	3	8
46	Self-neutralization via electroreduction in photoemission from SrTiO3 single crystals. *Applied Physics A: Materials Science and Processing*, **2009**, 97, 449-454	2.6	8
45	Towards a better understanding of surfaces of hydrogenated amorphous silicon: investigation by STM and AFM. *Journal of Non-Crystalline Solids*, **1998**, 227-230, 78-82	3.9	8
44	Inhomogeneity and Segregation Effect in the Surface Layer of Fe-Doped SrTiO3 Single Crystals. *Crystals*, **2020**, 10, 33	2.3	7
43	Effect of resistive switching and electrically driven insulator□onductor transition in PbZrO3 single crystals. *Physica Status Solidi (A) Applications and Materials Science*, **2013**, 210, 507-512	1.6	7
42	High temperature conductivity behavior of doped SrTiO3 thin films. *Integrated Ferroelectrics*, **2001**, 33, 363-372	0.8	7
41	Significance of crystallographic grain orientation for oxide scale formation on FeCrAl ODS alloys studied by AFM and MCs+-SIMS. *Materials at High Temperatures*, **2000**, 17, 159-163	1.1	7
40	Unconventional Co-Existence of Insulating Nano-Regions and Conducting Filaments in Reduced SrTiO3: Mode Softening, Local Piezoelectricity, and Metallicity. *Crystals*, **2020**, 10, 437	2.3	6

39	The Electronic Properties of Extended Defects in SrTiO3: A Case Study of a Real Bicrystal Boundary. *Crystals*, **2020**, 10, 665	2.3	6
38	Features of surface layer of LiNbO3 as-received single crystals: Studied in situ on treatment samples modified by elevated temperature. *Solid State Ionics*, **2016**, 290, 31-39	3.3	5
37	Fast mapping of inhomogeneities in the popular metallic perovskite Nb:SrTiO3 by confocal Raman microscopy. *Physica Status Solidi - Rapid Research Letters*, **2014**, 08, 781-784	2.5	5
36	BiFeO3 single crystal as resistive switching element for application in microelectronic devices. *Phase Transitions*, **2013**, 86, 284-289	1.3	5
35	Influence of grain-boundary defects on electric transport in CeRhSn with a non-Fermi-liquid ground state. *Physical Review B*, **2005**, 72,	3.3	5
34	Mapping the conducting channels formed along extended defects in SrTiO by means of scanning near-field optical microscopy. *Scientific Reports*, **2020**, 10, 17763	4.9	5
33	Electrical nanopatterning of TiO2 single crystal surfaces in situ via local resistance and potential switching. *APL Materials*, **2018**, 6, 066105	5.7	5
32	Thermal hysteresis of local instabilities in paraelectric phase of PbZr0.96Sn0.04 O3 single crystals. *Journal of Applied Physics*, **2013**, 113, 187209	2.5	4
31	Importance of oxidation and reduction of barium titanate in material science. *Ferroelectrics*, **1997**, 202, 1-10	0.6	4
30	AFM and STM investigations of hydrogenated amorphous silicon: topography and barrier heights. *FreseniuspJournal of Analytical Chemistry*, **1997**, 358, 338-340		4
29	MOCVD of (Ba,Sr)TiO3: Nucleation and Growth. *Integrated Ferroelectrics*, **2003**, 57, 1175-1184	0.8	4
28	Contact mode potentiometric measurements with an atomic force microscope on high resistive perovskite thin films. *Journal of the European Ceramic Society*, **2005**, 25, 2353-2356	6	4
27	Segregation phenomena in thin films of BaTiO3. *Integrated Ferroelectrics*, **2001**, 33, 303-310	0.8	4
26	Hafnium carbide formation in oxygen deficient hafnium oxide thin films. *Applied Physics Letters*, **2016**, 108, 252903	3.4	4
25	Domain Switching and Self- Polarization in Perovskite Thin Films **2004**, 135-155		4
24	Insulator-metal transition associated with resistive switching in real SrTiO3 and TiO2 crystals **2015**,		3
23	Thermal Treatment Effects in PbTiO3 Crystals Studied by XPS and Electric Conductivity Tests. *Ferroelectrics*, **2014**, 466, 51-62	0.6	3
22	Resistive switching in Sr1-0.05La0.05TiO3 **2012**,		3

21	Inhomogeneous Local Conductivity Induced by Thermal Reduction in BaTiO3 Thin Films and Single Crystals. *Integrated Ferroelectrics*, **2004**, 61, 43-49	0.8	3
20	Structural and Ferroelectric Properties of Epitaxial PbZr0.52Ti0.48O3 and BaTiO3 Thin Films Prepared on SrRuO3/SrTiO3(100) Substrates. *Materials Research Society Symposia Proceedings*, **2001**, 688, 1		3
19	Surface layers in PLZT 7/65/35 ceramics. *Ferroelectrics*, **1994**, 160, 137-144	0.6	3
18	Is Reduced Strontium Titanate a Semiconductor or a Metal?. *Crystals*, **2021**, 11, 744	2.3	3
17	Electrical Characterization of Perovskite Nanostructures by SPM **2007**, 746-775		3
16	Localized electrochemical redox reactions in yttria-stabilized zirconia single crystals. *JPhys Energy*, **2020**, 2, 034008	4.9	2
15	Influence of Proton Exchange on LiNbO3Crystals Structure. *Ferroelectrics*, **2014**, 466, 1-7	0.6	2
14	Temperature evolution of the crystal structure in SrTiO3 doped by W6+, Ni3+, Fe3+ and La3+. *Phase Transitions*, **2011**, 84, 1015-1027	1.3	2
13	Oxide scale formation and microstructural changes during high temperature exposure of mechanically alloyed ODS alloys studied by AFM, TEM and SIMS/SNMS. *Journal of Electron Microscopy*, **1999**, 48, 725-730		2
12	A physical method for investigating defect chemistry in solid metal oxides. *APL Materials*, **2021**, 9, 011106	5.7	2
11	Polarity in nanoscale in PbZrxSn1−xO3 single crystals **2012**,		1
10	Defects in alkaline earth titanate thin films - the conduction behavior of doped BST. *Integrated Ferroelectrics*, **2001**, 38, 229-237	0.8	1
9	Conductive AFM for Nanoscale Analysis of High-k Dielectric Metal Oxides. *Nanoscience and Technology*, **2019**, 29-70	0.6	0
8	Tuning the electronic properties of a clean TiO2(1 1 0) surface via repeated sputtering and annealing: A KPFM and LC-AFM study. *Applied Surface Science*, **2022**, 571, 151303	6.7	0
7	Structural stratification of Sr1−xCaxRuO3 thin films: Influence of aging process. *Physica Status Solidi (A) Applications and Materials Science*, **2013**, 210, 239-254	1.6	
6	High Speed and High Resolution Measurements on Submicron Capacitors for FeRAM Application. *Integrated Ferroelectrics*, **2003**, 53, 371-378	0.8	
5	Extrinsic Contributions to Piezoresponse Force Microscopy. *Materials Research Society Symposia Proceedings*, **2005**, 902, 1		
4	Nucleation and growth of thin (Ba,Sr)TiO3 films in a MOCVD reactor. *Materials Research Society Symposia Proceedings*, **2002**, 748, 1		

3	Atomic Force Microscopy Studies of the Surface Scale Formed During Oxidation of Incoloy Ma956. *Acta Physica Polonica A*, **1998**, 93, 399-402	0.6
2	Nanosession: Advanced Spectroscopy and Scattering123-132	
1	Nanosession: Variants of Resistive Switching247-258	