Gael Sebald

List of Publications by Year
in descending order

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115 papers	3,469 citations	159573 30 h-index	155644 55 g-index
115 all docs	115 docs citations	115 times ranked	2447 citing authors

#	Article	IF	Citations
1	On thermoelectric and pyroelectric energy harvesting. Smart Materials and Structures, 2009, 18, 125006.	3.5	244
2	Pyroelectric energy conversion: Optimization principles. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2008, 55, 538-551.	3.0	218
3	Piezoelectric vibration control by synchronized switching on adaptive voltage sources: Towards wideband semi-active damping. Journal of the Acoustical Society of America, 2006, 119, 2815-2825.	1.1	174
4	Electrocaloric and pyroelectric properties of 0.75Pb(Mg1â^•3Nb2â^•3)O3â€“0.25PbTiO3 single crystals. Journal of Applied Physics, 2006, 100, 124112.	2.5	167
5	Energy harvesting based on Ericsson pyroelectric cycles in a relaxor ferroelectric ceramic. Smart Materials and Structures, 2008, 17, 015012.	3.5	156
6	Experimental Duffing oscillator for broadband piezoelectric energy harvesting. Smart Materials and Structures, 2011, 20, 102001.	3.5	152
7	Energy Harvesting from Ambient Vibrations and Heat. Journal of Intelligent Material Systems and Structures, 2009, 20, 609-624.	2.5	102
8	Enhanced electric field-induced strain in non-percolative carbon nanopowder/polyurethane composites. Journal Physics D: Applied Physics, 2006, 39, 3053-3057.	2.8	97
9	Ferroelectric electrocaloric conversion in 0.75(PbMg1/3Nb2/3O3)â€“0.25(PbTiO3) ceramics. Journal Physics D: Applied Physics, 2006, 39, 4491-4496.	2.8	92
10	Nonlinear pyroelectric energy harvesting from relaxor single crystals. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2009, 56, 693-699.	3.0	90
11	Solar micro-energy harvesting based on thermoelectric and latent heat effects. Part I: Theoretical analysis. Sensors and Actuators A: Physical, 2010, 163, 277-283.	4.1	84
12	Simulation of a Duffing oscillator for broadband piezoelectric energy harvesting. Smart Materials and Structures, 2011, 20, 075022.	3.5	83
13	Materials, structures and power interfaces for efficient piezoelectric energy harvesting. Journal of Electroceramics, 2009, 22, 171-179.	2.0	69
14	Electrocaloric properties of high dielectric constant ferroelectric ceramics. Journal of the European Ceramic Society, 2007, 27, 4021-4024.	5.7	68
15	Energy harvesting based on FE-FE transition in ferroelectric single crystals. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2008, 55, 279-285.	3.0	67
16	Toward Heat Energy Harvesting using Pyroelectric Material. Journal of Intelligent Material Systems and Structures, 2009, 20, 265-271.	2.5	61
17	Elastocaloric modeling of natural rubber. Applied Thermal Engineering, 2013, 57, 33-38.	6.0	58
18	Elastocaloric effect dependence on pre-elongation in natural rubber. Applied Physics Letters, 2015, 107, .	3.3	48

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19	Low frequency modelling of hysteresis behaviour and dielectric permittivity in ferroelectric ceramics under electric field. Journal Physics D: Applied Physics, 2007, 40, 551-555.	2.8	43
20	Structural, dielectric, ferroelectric, and electrocaloric properties of 2% Gd2O3 doping (Na0.5Bi0.5)0.94Ba0.06TiO3 ceramics. Journal of Applied Physics, 2016, 120, .	2.5	41
21	Comparison of direct and indirect measurement of the elastocaloric effect in natural rubber. Applied Physics Letters, 2016, 108, .	3.3	41
22	Evaluation of macroscopic polarization and actuation abilities of electrostrictive dipolar polymers using the microscopic Debye/Langevin formalism. Journal Physics D: Applied Physics, 2012, 45, 205401.	2.8	40
23	Differential scanning calorimeter and infrared imaging for electrocaloric characterization of poly(vinylidene fluoride-trifluoroethylene-chlorofluoroethylene) terpolymer. Applied Physics Letters, 2012, 101, .	3.3	40
24	Magnetic incremental permeability non-destructive evaluation of 12 Cr-Mo-W-V steel creep test samples with varied ageing levels and thermal treatments. NDT and E International, 2019, 104, 42-50.	3.7	37
25	A model based on dry friction for modeling hysteresis in ferroelectric materials. Journal of Applied Physics, 2004, 96, 2785-2791.	2.5	35
26	Dynamical hysteresis model of ferroelectric ceramics under electric field using fractional derivatives. Journal Physics D: Applied Physics, 2007, 40, 6048-6054.	2.8	34
27	Analysis of AC-DC conversion for energy harvesting using an electrostrictive polymer P(VDF-TrFE-CFE). IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2011, 58, 30-42.	3.0	34
28	Characterization and modeling of magnetic domain wall dynamics using reconstituted hysteresis loops from Barkhausen noise. Journal of Magnetism and Magnetic Materials, 2017, 432, 231-238.	2.3	33
29	Temperature dependence of the elastocaloric effect in natural rubber. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 2112-2116.	2.1	33
30	Comparison of elastocaloric effect of natural rubber with other caloric effects on different-scale cooling application cases. Applied Thermal Engineering, 2017, 111, 914-926.	6.0	32
31	Fractional derivative operators for modeling the dynamic polarization behavior as a function of frequency and electric field amplitude. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2009, 56, 437-443.	3.0	31
32	Elastocaloric effect in poly(vinylidene fluoride-trifluoroethylene-chlorotrifluoroethylene) terpolymer. Applied Physics Letters, 2016, 108, .	3.3	31
33	Dynamics of magnetic field penetration into soft ferromagnets. Journal of Applied Physics, 2015, 117, .	2.5	29
34	Time fractional derivatives for voltage creep in ferroelectric materials: theory and experiment. Journal Physics D: Applied Physics, 2008, 41, 125410.	2.8	28
35	High nonlinearities in Langevin transducer: A comprehensive model. Ultrasonics, 2011, 51, 1006-1013.	3.9	28
36	Energy conversion in magneto-rheological elastomers. Science and Technology of Advanced Materials, 2017, 18, 766-778.	6.1	26

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37	Modeling of elastic nonlinearities in ferroelectric materials including nonlinear losses: application to nonlinear resonance mode of relaxors single crystals. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2005, 52, 596-603.	3.0	25
38	Segregation study and segregation modeling of Ti in Pb[(Mg1/3Nb2/3)0.60Ti0.40]O3 single crystal grown by Bridgman method. Materials Research Bulletin, 2006, 41, 1069-1076.	5.2	25
39	Investigations on ferroelectric PMNâ€“PT and PZNâ€“PT single crystals ability for power or resonant actuators. Ultrasonics, 2004, 42, 501-505.	3.9	23
40	Modeling and Characterization of Piezoelectric Fibers with Metal Core. Japanese Journal of Applied Physics, 2005, 44, 6156-6163.	1.5	23
41	The use of fractional derivation in modeling ferroelectric dynamic hysteresis behavior over large frequency bandwidth. Journal of Applied Physics, 2010, 107, .	2.5	23
42	Experimental sea wave energy extractor based on piezoelectric Ericsson cycles. Journal of Intelligent Material Systems and Structures, 2018, 29, 1102-1112.	2.5	23
43	Regenerative cooling using elastocaloric rubber: Analytical model and experiments. Journal of Applied Physics, 2020, 127, .	2.5	22
44	Mechanism of depolarization with temperature for <0 0 1> (1 â^'x)Pb(Zn1/3Nb2/3)O3â€“xPbTiO3 single crystals. Acta Materialia, 2009, 57, 2243-2249.	7.9	21
45	Characterization of pure and substituted 0.955Pb(Zn1/3Nb2/3)O3â€“0.045PbTiO3. Journal of Crystal Growth, 2005, 275, 580-588.	1.5	20
46	Energy Harvester of 1.5 cm3 Giving Output Power of 2.6 mW with Only 1 G Acceleration. Journal of Intelligent Material Systems and Structures, 2011, 22, 415-420.	2.5	19
47	Dramatic effect of thermal expansion mismatch on the structural, dielectric, ferroelectric and pyroelectric properties of low-cost epitaxial PZT films on SrTiO₃and Si. CrystEngComm, 2016, 18, 1887-1891.	2.6	19
48	Non-destructive testing on creep degraded 12% Cr-Mo-W-V ferritic test samples using Barkhausen noise. Journal of Magnetism and Magnetic Materials, 2020, 498, 166102.	2.3	19
49	Composition dependence of 90Â° domain switching in Pb(Mg1/3Nb2/3)1â^'xTixO3 system. Solid State Sciences, 2008, 10, 1020-1027.	3.2	18
50	Energy harvesting based on piezoelectric Ericsson cycles in a piezoceramic material. European Physical Journal: Special Topics, 2013, 222, 1733-1743.	2.6	18
51	Magnetic particle chains embedded in elastic polymer matrix under pure transverse shear and energy conversion. Journal of Magnetism and Magnetic Materials, 2019, 481, 39-49.	2.3	18
52	Converse electrostrictive effect in dielectric polymers. Sensors and Actuators B: Chemical, 2014, 190, 259-264.	7.8	17
53	Preisachâ€™s Model Extended With Dynamic Fractional Derivation Contribution. IEEE Transactions on Magnetics, 2018, 54, 1-4.	2.1	17
54	Morphotropic PMNâ€“PT system investigated by comparison between ceramics and crystal. Journal of the European Ceramic Society, 2005, 25, 2509-2513.	5.7	16

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55	Fatigue effect of elastocaloric properties in natural rubber. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150302.	3.4	16
56	A Space Discretized Ferromagnetic Model for Non-Destructive Eddy Current Evaluation. IEEE Transactions on Magnetics, 2018, 54, 1-4.	2.1	16
57	Fractional model of magnetic field penetration into a toroidal soft ferromagnetic sample. International Journal of Dynamics and Control, 2018, 6, 89-96.	2.5	16
58	Dynamic Magnetic Scalar Hysteresis Lump Model Based on Jilesâ€“Atherton Quasi-Static Hysteresis Model Extended With Dynamic Fractional Derivative Contribution. IEEE Transactions on Magnetics, 2018, 54, 1-5.	2.1	16
59	Physical interpretation of the microstructure for aged 12 Cr-Mo-V-W steel creep test samples based on simulation of magnetic incremental permeability. Journal of Magnetism and Magnetic Materials, 2019, 486, 165250.	2.3	16
60	Modelling the lateral resonance mode of piezoelectric fibres with metal core. Journal Physics D: Applied Physics, 2005, 38, 3733-3740.	2.8	15
61	Electro-thermo-elastomers for artificial muscles. Sensors and Actuators A: Physical, 2012, 180, 105-112.	4.1	14
62	Comparison of electromagnetic inspection methods for creep-degraded high chromium ferritic steels. NDT and E International, 2021, 118, 102399.	3.7	14
63	Characterization of an electroactive polymer simultaneously driven by an electrical field and a mechanical excitation: An easy means of measuring the dielectric constant, the Young modulus and the electrostrictive coefficients. Physics Letters, Section A: General, Atomic and Solid State Physics, 2011, 375, 1699-1702.	2.1	13
64	Fractional derivative operators for modeling piezoceramic polarization behaviors under dynamic mechanical stress excitation. Sensors and Actuators A: Physical, 2013, 189, 74-79.	4.1	13
65	Elastocaloric properties of thermoplastic polyurethane. Applied Physics Letters, 2020, 117, .	3.3	13
66	Optimization of magneto-rheological elastomers for energy harvesting applications. Smart Materials and Structures, 2020, 29, 075017.	3.5	13
67	Correlation between macroscopic properties and microscopic parameters versus stress in tetragonal Pb(Mg1â^•3Nb2â^•3)0.6Ti0.4O3 ferroelectric ceramics. Journal of Applied Physics, 2006, 100, 074104.	2.5	12
68	Self-sensing High Speed Controller for Piezoelectric Actuator. Journal of Intelligent Material Systems and Structures, 2008, 19, 395-405.	2.5	12
69	Nonlinear Technique for Energy Exchange Optimization in Piezoelectric Actuators. IEEE Transactions on Power Electronics, 2013, 28, 3941-3948.	7.9	12
70	Validity of Flory's model for describing equilibrium strain-induced crystallization (SIC) and thermal behavior in natural rubber. Polymer, 2016, 103, 41-45.	3.8	12
71	Stability of morphotropic <110> oriented 0.65PMN-0.35PT single crystals. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2004, 51, 1491-1498.	3.0	11
72	Electromechanical characterization of 0.55Pb(Ni1â^•3Nb2â^•3)O3â€“0.45Pb(Zr0.3Ti0.7)O3 fibers with Pt core. Journal of Applied Physics, 2006, 100, 054106.	2.5	11

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73	Anisotropic magnetorheological elastomers for mechanical to electrical energy conversion. Journal of Applied Physics, 2017, 122, .	2.5	11
74	Huge gain in pyroelectric energy conversion through epitaxy for integrated self-powered nanodevices. Nano Energy, 2017, 41, 43-48.	16.0	11
75	Heusler alloy-based heat engine using pyroelectric conversion for small-scale thermal energy harvesting. Applied Energy, 2021, 288, 116617.	10.1	11
76	High frequency bandwidth polarization and strain control using a fractional derivative inverse model. Smart Materials and Structures, 2010, 19, 045010.	3.5	9
77	Identification of the ferromagnetic hysteresis simulation parameters using classic non-destructive testing equipment. Journal of Magnetism and Magnetic Materials, 2021, 531, 167971.	2.3	9
78	Temperature dependence of piezoelectric properties of PMN-PT and PZN-PT single crystals. European Physical Journal Special Topics, 2005, 126, 53-57.	0.2	8
79	Depolarization mechanism under compressive stress in Pb(Mg1/3Nb2/3)1â^'xTixO3 system. Journal of Applied Physics, 2007, 102, 064104.	2.5	8
80	Microâ€“macro correlation in ferroelectric materials: Depolarization mechanism for different excitations. Acta Materialia, 2008, 56, 215-221.	7.9	8
81	Analysis of thermal energy harvesting using ferromagnetic materials. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 3151-3154.	2.1	8
82	A Unique Fractional Derivative Operator to Simulate All Dynamic Piezoceramic Dielectric Manifestations: From Aging to Frequency-Dependent Hysteresis. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2020, 67, 197-206.	3.0	8
83	Anomalous fractional diffusion equation for magnetic losses in a ferromagnetic lamination. European Physical Journal Plus, 2020, 135, 1.	2.6	8
84	Anomalous fractional magnetic field diffusion through cross-section of a massive toroidal ferromagnetic core. Communications in Nonlinear Science and Numerical Simulation, 2021, 92, 105450.	3.3	8
85	Low-frequency behavior of laminated electric steel sheet: Investigation of ferromagnetic hysteresis loops and incremental permeability. Journal of Magnetism and Magnetic Materials, 2021, 538, 168278.	2.3	8
86	An anisotropic vector hysteresis model of ferromagnetic behavior under alternating and rotational magnetic field. Journal of Magnetism and Magnetic Materials, 2022, 549, 169045.	2.3	8
87	Synthesis and characterization of 0.65Pb(Mg1/3Nb2/3)O3â€“0.35PbTiO3 fibers with Pt core. Materials Research Bulletin, 2008, 43, 493-501.	5.2	7
88	Fractional operators for the magnetic dynamic behavior of ferromagnetic specimens: An overview. AIP Advances, 2021, 11, .	1.3	7
89	Stress/electrical scaling in ferroelectrics. Journal of Applied Physics, 2009, 105, .	2.5	6
90	A universal method based on fractional derivatives for modeling magnetic losses under alternating and rotational magnetization conditions. Journal of Magnetism and Magnetic Materials, 2022, 550, 169071.	2.3	6

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91	High-frequency response and wavelength dispersion of the linear electro-optic effect in PZN-PT (88/12) single crystal. Applied Physics B: Lasers and Optics, 2005, 80, 413-417.	2.2	5
92	Pyroelectric/electrocaloric energy scanvenging and cooling capabilities in ferroelectric materials. International Journal of Applied Electromagnetics and Mechanics, 2009, 31, 41-46.	0.6	5
93	Characterization of fractional order for high-frequency bandwidth model of dielectric ferroelectrics. Journal of Intelligent Material Systems and Structures, 2016, 27, 437-443.	2.5	5
94	Physical behavior of electrostrictive polymers. Part 1: Polarization forces. Computational Materials Science, 2021, 190, 110294.	3.0	5
95	Magnetic behavior of magneto-rheological foam under uniaxial compression strain. Smart Materials and Structures, 2022, 31, 025018.	3.5	5
96	Modeling energy losses in power ultrasound transducers. , 2015, , 241-256.		4
97	Modeling of hysteretic behavior in ferroelectric polymers. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 499-508.	2.1	4
98	Pyroelectricity of Pb(Zr0.52Ti0.48)O3 films grown by solâ€“gel process on silicon. Thin Solid Films, 2016, 601, 80-83.	1.8	4
99	Combining a fractional diffusion equation and a fractional viscosity-based magneto dynamic model to simulate the ferromagnetic hysteresis losses. AIP Advances, 2022, 12, .	1.3	4
100	Fractional derivative resolution of the anomalous magnetic field diffusion through a ferromagnetic steel rod: Application to eddy current testing. Communications in Nonlinear Science and Numerical Simulation, 2021, 103, 105953.	3.3	3
101	Electrical steel dynamic behavior quantitated by inductance spectroscopy: Toward prediction of magnetic losses. Journal of Magnetism and Magnetic Materials, 2022, 560, 169672.	2.3	3
102	Ambient energy harvesting using ferroelectric materials. , 2008, , .		2
103	Energy Harvesting from Temperature: Use of Pyroelectric and Electrocaloric Properties. Engineering Materials, 2014, , 225-249.	0.6	2
104	Energy harvesting based on piezoelectric ericsson cycles in a piezoceramic material. , 2014, , .		2
105	Mathematical Modeling of Rubber Elasticity. Journal of Physics: Conference Series, 2018, 1141, 012081.	0.4	2
106	Monte Carlo Study of Rubber Elasticity on the Basis of Finsler Geometry Modeling. Symmetry, 2019, 11, 1124.	2.2	2
107	Analysis of magneto rheological elastomers for energy harvesting systems. International Journal of Applied Electromagnetics and Mechanics, 2020, 64, 439-446.	0.6	2
108	Piezoceramic coefficient hysteresis under high stress and electric field. , 0, , .		1

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109	Modeling hysteresis in ferroelectric materials with a dry friction concept. Journal of Advanced Science, 2005, 17, 13-16.	0.1	1
110	Electrocaloric Effect In Relaxor Ferroelectric Ceramics and Single Crystals. , 2006, , .		1
111	Coarse-Grained Lattice Modeling and Monte Carlo Simulations of Stress Relaxation in Strain-Induced Crystallization of Rubbers. Polymers, 2020, 12, 1267.	4.5	1
112	Electromechanical Behavior Of Two Phase Non Percolative Composites: Comparison Between Carbon Black / Polyurethane And PZT / Polyurethane Films. Applications of Ferroelectrics, IEEE International Symposium on, 2006, , .	0.0	0
113	Electrocaloric Effect In Relaxor Ferroelectric Ceramics and Single Crystals. Applications of Ferroelectrics, IEEE International Symposium on, 2006, , .	0.0	0
114	Time fractional derivative for frequency effect in ferroelectrics. , 2009, , .		0
115	Dynamic magnetic scalar hysteresis lump model, based on Jiles- Atherton quasi-static hysteresis model extended with dynamic fractional derivatives.. , 2018, , .		0