

Gael Sebald

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

108
papers

2,742
citations

27
h-index

48
g-index

115
ext. papers

3,100
ext. citations

3.3
avg, IF

5.2
L-index

#	Paper	IF	Citations
108	An anisotropic vector hysteresis model of ferromagnetic behavior under alternating and rotational magnetic field. <i>Journal of Magnetism and Magnetic Materials</i> , 2022 , 549, 169045	2.8	1
107	A universal method based on fractional derivatives for modeling magnetic losses under alternating and rotational magnetization conditions. <i>Journal of Magnetism and Magnetic Materials</i> , 2022 , 550, 169071	2.8	1
106	Magnetic behavior of magneto-rheological foam under uniaxial compression strain. <i>Smart Materials and Structures</i> , 2022 , 31, 025018	3.4	0
105	Combining a fractional diffusion equation and a fractional viscosity-based magneto dynamic model to simulate the ferromagnetic hysteresis losses. <i>AIP Advances</i> , 2022 , 12, 035029	1.5	0
104	Fractional operators for the magnetic dynamic behavior of ferromagnetic specimens: An overview. <i>AIP Advances</i> , 2021 , 11, 035309	1.5	1
103	Physical behavior of electrostrictive polymers. Part 1: Polarization forces. <i>Computational Materials Science</i> , 2021 , 190, 110294	3.2	1
102	Heusler alloy-based heat engine using pyroelectric conversion for small-scale thermal energy harvesting. <i>Applied Energy</i> , 2021 , 288, 116617	10.7	4
101	Anomalous fractional magnetic field diffusion through cross-section of a massive toroidal ferromagnetic core. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2021 , 92, 105450	3.7	3
100	Comparison of electromagnetic inspection methods for creep-degraded high chromium ferritic steels. <i>NDT and E International</i> , 2021 , 118, 102399	4.1	3
99	Identification of the ferromagnetic hysteresis simulation parameters using classic non-destructive testing equipment. <i>Journal of Magnetism and Magnetic Materials</i> , 2021 , 531, 167971	2.8	4
98	Low-frequency behavior of laminated electric steel sheet: Investigation of ferromagnetic hysteresis loops and incremental permeability. <i>Journal of Magnetism and Magnetic Materials</i> , 2021 , 538, 168278	2.8	2
97	Fractional derivative resolution of the anomalous magnetic field diffusion through a ferromagnetic steel rod: Application to eddy current testing. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2021 , 103, 105953	3.7	1
96	Coarse-Grained Lattice Modeling and Monte Carlo Simulations of Stress Relaxation in Strain-Induced Crystallization of Rubbers. <i>Polymers</i> , 2020 , 12,	4.5	1
95	Regenerative cooling using elastocaloric rubber: Analytical model and experiments. <i>Journal of Applied Physics</i> , 2020 , 127, 094903	2.5	5
94	Anomalous fractional diffusion equation for magnetic losses in a ferromagnetic lamination. <i>European Physical Journal Plus</i> , 2020 , 135, 1	3.1	5
93	Optimization of magneto-rheological elastomers for energy harvesting applications. <i>Smart Materials and Structures</i> , 2020 , 29, 075017	3.4	5
92	Analysis of magneto rheological elastomers for energy harvesting systems. <i>International Journal of Applied Electromagnetics and Mechanics</i> , 2020 , 64, 439-446	0.4	1

91	Non-destructive testing on creep degraded 12% Cr-Mo-W-V ferritic test samples using Barkhausen noise. <i>Journal of Magnetism and Magnetic Materials</i> , 2020 , 498, 166102	2.8	15
90	Elastocaloric properties of thermoplastic polyurethane. <i>Applied Physics Letters</i> , 2020 , 117, 193903	3.4	1
89	A Unique Fractional Derivative Operator to Simulate All Dynamic Piezoceramic Dielectric Manifestations: From Aging to Frequency-Dependent Hysteresis. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2020 , 67, 197-206	3.2	7
88	Physical interpretation of the microstructure for aged 12 Cr-Mo-V-W steel creep test samples based on simulation of magnetic incremental permeability. <i>Journal of Magnetism and Magnetic Materials</i> , 2019 , 486, 165250	2.8	10
87	Magnetic particle chains embedded in elastic polymer matrix under pure transverse shear and energy conversion. <i>Journal of Magnetism and Magnetic Materials</i> , 2019 , 481, 39-49	2.8	17
86	Magnetic incremental permeability non-destructive evaluation of 12 Cr-Mo-W-V steel creep test samples with varied ageing levels and thermal treatments. <i>NDT and E International</i> , 2019 , 104, 42-50	4.1	17
85	Monte Carlo Study of Rubber Elasticity on the Basis of Finsler Geometry Modeling. <i>Symmetry</i> , 2019 , 11, 1124	2.7	1
84	A Space Discretized Ferromagnetic Model for Non-Destructive Eddy Current Evaluation. <i>IEEE Transactions on Magnetics</i> , 2018 , 54, 1-4	2	13
83	Fractional model of magnetic field penetration into a toroidal soft ferromagnetic sample. <i>International Journal of Dynamics and Control</i> , 2018 , 6, 89-96	1.7	10
82	Preisach Model Extended With Dynamic Fractional Derivation Contribution. <i>IEEE Transactions on Magnetics</i> , 2018 , 54, 1-4	2	14
81	Experimental sea wave energy extractor based on piezoelectric Ericsson cycles. <i>Journal of Intelligent Material Systems and Structures</i> , 2018 , 29, 1102-1112	2.3	13
80	Mathematical Modeling of Rubber Elasticity. <i>Journal of Physics: Conference Series</i> , 2018 , 1141, 012081	0.3	2
79	Dynamic Magnetic Scalar Hysteresis Lump Model Based on Jiles-Atherton Quasi-Static Hysteresis Model Extended With Dynamic Fractional Derivative Contribution. <i>IEEE Transactions on Magnetics</i> , 2018 , 54, 1-5	2	10
78	Characterization and modeling of magnetic domain wall dynamics using reconstituted hysteresis loops from Barkhausen noise. <i>Journal of Magnetism and Magnetic Materials</i> , 2017 , 432, 231-238	2.8	27
77	Temperature dependence of the elastocaloric effect in natural rubber. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2017 , 381, 2112-2116	2.3	18
76	Energy conversion in magneto-rheological elastomers. <i>Science and Technology of Advanced Materials</i> , 2017 , 18, 766-778	7.1	20
75	Anisotropic magnetorheological elastomers for mechanical to electrical energy conversion. <i>Journal of Applied Physics</i> , 2017 , 122, 103902	2.5	9
74	Huge gain in pyroelectric energy conversion through epitaxy for integrated self-powered nanodevices. <i>Nano Energy</i> , 2017 , 41, 43-48	17.1	9

73	Comparison of elastocaloric effect of natural rubber with other caloric effects on different-scale cooling application cases. <i>Applied Thermal Engineering</i> , 2017 , 111, 914-926	5.8	18
72	Characterization of fractional order for high-frequency bandwidth model of dielectric ferroelectrics. <i>Journal of Intelligent Material Systems and Structures</i> , 2016 , 27, 437-443	2.3	5
71	Validity of Flory's model for describing equilibrium strain-induced crystallization (SIC) and thermal behavior in natural rubber. <i>Polymer</i> , 2016 , 103, 41-45	3.9	5
70	Fatigue effect of elastocaloric properties in natural rubber. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2016 , 374,	3	10
69	Modeling of hysteretic behavior in ferroelectric polymers. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 2016 , 54, 499-508	2.6	4
68	Dramatic effect of thermal expansion mismatch on the structural, dielectric, ferroelectric and pyroelectric properties of low-cost epitaxial PZT films on SrTiO ₃ and Si. <i>CrystEngComm</i> , 2016 , 18, 1887-1891	2.3	18
67	Pyroelectricity of Pb(Zr _{0.52} Ti _{0.48})O ₃ films grown by sol-gel process on silicon. <i>Thin Solid Films</i> , 2016 , 601, 80-83	2.2	4
66	Structural, dielectric, ferroelectric, and electrocaloric properties of 2% Gd ₂ O ₃ doping (Na _{0.5} Bi _{0.5}) _{0.94} Ba _{0.06} TiO ₃ ceramics. <i>Journal of Applied Physics</i> , 2016 , 120, 054102	2.5	30
65	Elastocaloric effect in poly(vinylidene fluoride-trifluoroethylene-chlorotrifluoroethylene) terpolymer. <i>Applied Physics Letters</i> , 2016 , 108, 242904	3.4	20
64	Comparison of direct and indirect measurement of the elastocaloric effect in natural rubber. <i>Applied Physics Letters</i> , 2016 , 108, 041901	3.4	29
63	Modeling energy losses in power ultrasound transducers 2015 , 241-256		1
62	Elastocaloric effect dependence on pre-elongation in natural rubber. <i>Applied Physics Letters</i> , 2015 , 107, 081905	3.4	34
61	Dynamics of magnetic field penetration into soft ferromagnets. <i>Journal of Applied Physics</i> , 2015 , 117, 243907	2.5	25
60	Analysis of thermal energy harvesting using ferromagnetic materials. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2014 , 378, 3151-3154	2.3	7
59	Energy Harvesting from Temperature: Use of Pyroelectric and Electrocaloric Properties. <i>Engineering Materials</i> , 2014 , 225-249	0.4	2
58	Converse electrostrictive effect in dielectric polymers. <i>Sensors and Actuators B: Chemical</i> , 2014 , 190, 259-264	8.5	16
57	Energy harvesting based on piezoelectric Ericsson cycles in a piezoceramic material. <i>European Physical Journal: Special Topics</i> , 2013 , 222, 1733-1743	2.3	14
56	. <i>IEEE Transactions on Power Electronics</i> , 2013 , 28, 3941-3948	7.2	8

55	Elastocaloric modeling of natural rubber. <i>Applied Thermal Engineering</i> , 2013 , 57, 33-38	5.8	38
54	Fractional derivative operators for modeling piezoceramic polarization behaviors under dynamic mechanical stress excitation. <i>Sensors and Actuators A: Physical</i> , 2013 , 189, 74-79	3.9	10
53	Evaluation of macroscopic polarization and actuation abilities of electrostrictive dipolar polymers using the microscopic Debye/Langevin formalism. <i>Journal Physics D: Applied Physics</i> , 2012 , 45, 205401	3	36
52	Electro-thermo-elastomers for artificial muscles. <i>Sensors and Actuators A: Physical</i> , 2012 , 180, 105-112	3.9	8
51	Differential scanning calorimeter and infrared imaging for electrocaloric characterization of poly(vinylidene fluoride-trifluoroethylene-chlorofluoroethylene) terpolymer. <i>Applied Physics Letters</i> , 2012 , 101, 022907	3.4	33
50	Analysis of ac-dc conversion for energy harvesting using an electrostrictive polymer P(VDF-TrFE-CFE). <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2011 , 58, 30-42	3.2	28
49	Energy Harvester of 1.5 cm ³ Giving Output Power of 2.6 mW with Only 1 G Acceleration. <i>Journal of Intelligent Material Systems and Structures</i> , 2011 , 22, 415-420	2.3	18
48	High nonlinearities in Langevin transducer: a comprehensive model. <i>Ultrasonics</i> , 2011 , 51, 1006-13	3.5	20
47	Simulation of a Duffing oscillator for broadband piezoelectric energy harvesting. <i>Smart Materials and Structures</i> , 2011 , 20, 075022	3.4	60
46	Experimental Duffing oscillator for broadband piezoelectric energy harvesting. <i>Smart Materials and Structures</i> , 2011 , 20, 102001	3.4	112
45	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. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2011 , 375, 1699-1702	2.3	13
44	High frequency bandwidth polarization and strain control using a fractional derivative inverse model. <i>Smart Materials and Structures</i> , 2010 , 19, 045010	3.4	9
43	The use of fractional derivation in modeling ferroelectric dynamic hysteresis behavior over large frequency bandwidth. <i>Journal of Applied Physics</i> , 2010 , 107, 114108	2.5	21
42	Solar micro-energy harvesting based on thermoelectric and latent heat effects. Part I: Theoretical analysis. <i>Sensors and Actuators A: Physical</i> , 2010 , 163, 277-283	3.9	66
41	Pyroelectric/electrocaloric energy scavenging and cooling capabilities in ferroelectric materials. <i>International Journal of Applied Electromagnetics and Mechanics</i> , 2009 , 31, 41-46	0.4	4
40	Stress/electrical scaling in ferroelectrics. <i>Journal of Applied Physics</i> , 2009 , 105, 124103	2.5	5
39	Materials, structures and power interfaces for efficient piezoelectric energy harvesting. <i>Journal of Electroceramics</i> , 2009 , 22, 171-179	1.5	44
38	Mechanism of depolarization with temperature for (1-x)Pb(Zn _{1/3} Nb _{2/3})O ₃ -xPbTiO ₃ single crystals. <i>Acta Materialia</i> , 2009 , 57, 2243-2249	8.4	19

37	Toward Heat Energy Harvesting using Pyroelectric Material. <i>Journal of Intelligent Material Systems and Structures</i> , 2009 , 20, 265-271	2.3	52
36	Fractional derivative operators for modeling the dynamic polarization behavior as a function of frequency and electric field amplitude. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2009 , 56, 437-43	3.2	31
35	Nonlinear pyroelectric energy harvesting from relaxor single crystals. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2009 , 56, 693-9	3.2	79
34	Energy Harvesting from Ambient Vibrations and Heat. <i>Journal of Intelligent Material Systems and Structures</i> , 2009 , 20, 609-624	2.3	87
33	On thermoelectric and pyroelectric energy harvesting. <i>Smart Materials and Structures</i> , 2009 , 18, 125006	3.4	196
32	Synthesis and characterization of 0.65Pb(Mg _{1/3} Nb _{2/3})O ₃ -0.35PbTiO ₃ fibers with Pt core. <i>Materials Research Bulletin</i> , 2008 , 43, 493-501	5.1	5
31	Composition dependence of 90° domain switching in Pb(Mg _{1/3} Nb _{2/3}) _{1-x} Ti _x O ₃ system. <i>Solid State Sciences</i> , 2008 , 10, 1020-1027	3.4	14
30	Energy harvesting based on Ericsson pyroelectric cycles in a relaxor ferroelectric ceramic. <i>Smart Materials and Structures</i> , 2008 , 17, 015012	3.4	140
29	Pyroelectric energy conversion: optimization principles. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2008 , 55, 538-51	3.2	183
28	Time fractional derivatives for voltage creep in ferroelectric materials: theory and experiment. <i>Journal Physics D: Applied Physics</i> , 2008 , 41, 125410	3	26
27	Energy harvesting based on FE-FE transition in ferroelectric single crystals. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2008 , 55, 279-85	3.2	57
26	Self-sensing High Speed Controller for Piezoelectric Actuator. <i>Journal of Intelligent Material Systems and Structures</i> , 2008 , 19, 395-405	2.3	9
25	Ambient energy harvesting using ferroelectric materials 2008 ,		2
24	Micro/macro correlation in ferroelectric materials: Depolarization mechanism for different excitations. <i>Acta Materialia</i> , 2008 , 56, 215-221	8.4	7
23	Dynamical hysteresis model of ferroelectric ceramics under electric field using fractional derivatives. <i>Journal Physics D: Applied Physics</i> , 2007 , 40, 6048-6054	3	30
22	Electrocaloric properties of high dielectric constant ferroelectric ceramics. <i>Journal of the European Ceramic Society</i> , 2007 , 27, 4021-4024	6	61
21	Low frequency modelling of hysteresis behaviour and dielectric permittivity in ferroelectric ceramics under electric field. <i>Journal Physics D: Applied Physics</i> , 2007 , 40, 551-555	3	40
20	Depolarization mechanism under compressive stress in Pb(Mg _{1/3} Nb _{2/3}) _{1-x} Ti _x O ₃ system. <i>Journal of Applied Physics</i> , 2007 , 102, 064104	2.5	7

19	Segregation study and segregation modeling of Ti in $\text{Pb}[(\text{Mg}_{1/3}\text{Nb}_{2/3})_{0.6}\text{Ti}_{0.4}\text{O}_3]$ single crystal grown by Bridgman method. <i>Materials Research Bulletin</i> , 2006 , 41, 1069-1076	5.1	24
18	Correlation between macroscopic properties and microscopic parameters versus stress in tetragonal $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})_{0.6}\text{Ti}_{0.4}\text{O}_3$ ferroelectric ceramics. <i>Journal of Applied Physics</i> , 2006 , 100, 074102-5	2.5	11
17	Piezoelectric vibration control by synchronized switching on adaptive voltage sources: Towards wideband semi-active damping. <i>Journal of the Acoustical Society of America</i> , 2006 , 119, 2815-2825	2.2	140
16	Electromechanical characterization of $0.55\text{Pb}(\text{Ni}_{1/3}\text{Nb}_{2/3})\text{O}_3-0.45\text{Pb}(\text{Zr}_{0.3}\text{Ti}_{0.7})\text{O}_3$ fibers with Pt core. <i>Journal of Applied Physics</i> , 2006 , 100, 054106	2.5	10
15	Electrocaloric Effect In Relaxor Ferroelectric Ceramics and Single Crystals 2006 ,		1
14	Electrocaloric and pyroelectric properties of $0.75\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3-0.25\text{PbTiO}_3$ single crystals. <i>Journal of Applied Physics</i> , 2006 , 100, 124112	2.5	145
13	Enhanced electric field-induced strain in non-percolative carbon nanopowder/polyurethane composites. <i>Journal Physics D: Applied Physics</i> , 2006 , 39, 3053-3057	3	91
12	Ferroelectric electrocaloric conversion in $0.75(\text{PbMg}_{1/3}\text{Nb}_{2/3}\text{O}_3)-0.25(\text{PbTiO}_3)$ ceramics. <i>Journal Physics D: Applied Physics</i> , 2006 , 39, 4491-4496	3	89
11	Modeling of elastic nonlinearities in ferroelectric materials including nonlinear losses: application to nonlinear resonance mode of relaxors single crystals. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2005 , 52, 596-603	3.2	22
10	Morphotropic PMNBT system investigated by comparison between ceramics and crystal. <i>Journal of the European Ceramic Society</i> , 2005 , 25, 2509-2513	6	15
9	Characterization of pure and substituted $0.955\text{Pb}(\text{Zn}_{1/3}\text{Nb}_{2/3})\text{O}_3-0.045\text{PbTiO}_3$. <i>Journal of Crystal Growth</i> , 2005 , 275, 580-588	1.6	19
8	High-frequency response and wavelength dispersion of the linear electro-optic effect in PZN-PT (88/12) single crystal. <i>Applied Physics B: Lasers and Optics</i> , 2005 , 80, 413-417	1.9	5
7	Modeling hysteresis in ferroelectric materials with a dry friction concept. <i>Journal of Advanced Science</i> , 2005 , 17, 13-16	0	1
6	Temperature dependence of piezoelectric properties of PMN-PT and PZN-PT single crystals. <i>European Physical Journal Special Topics</i> , 2005 , 126, 53-57		8
5	Modelling the lateral resonance mode of piezoelectric fibres with metal core. <i>Journal Physics D: Applied Physics</i> , 2005 , 38, 3733-3740	3	10
4	Modeling and Characterization of Piezoelectric Fibers with Metal Core. <i>Japanese Journal of Applied Physics</i> , 2005 , 44, 6156-6163	1.4	16
3	Investigations on ferroelectric PMN-PT and PZN-PT single crystals ability for power or resonant actuators. <i>Ultrasonics</i> , 2004 , 42, 501-5	3.5	21
2	Stability of morphotropic (110) oriented $0.65\text{PMN}-0.35\text{PT}$ single crystals. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2004 , 51, 1491-8	3.2	11

- 1 A model based on dry friction for modeling hysteresis in ferroelectric materials. *Journal of Applied Physics*, **2004**, 96, 2785-2791 2.5 32