Eckhard Quandt

List of Publications by Citations

293 papers	7,828 citations	46 h-index	76 g-index
304 ext. papers	8,767 ext. citations	4.2 avg, IF	5.96 L-index

#	Paper	IF	Citations
293	New materials for micro-scale sensors and actuators. *Materials Science and Engineering Reports*, **2007**, 56, 1-129	30.9	384
292	Determination of elastic modulus of thin layers using nanoindentation. *Journal of Materials Research*, **1997**, 12, 2475-2484	2.5	303
291	Shape memory alloys. Ultralow-fatigue shape memory alloy films. *Science*, **2015**, 348, 1004-7	33.3	274
290	Caloric Effects in Ferroic Materials: New Concepts for Cooling. *Advanced Engineering Materials*, **2012**, 14, 10-19	3.5	242
289	Exchange biasing of magnetoelectric composites. *Nature Materials*, **2012**, 11, 523-9	27	207
288	Giant magnetoelectric coefficients in (Fe90Co10)78Si12B10-AlN thin film composites. *Applied Physics Letters*, **2010**, 96, 182501	3.4	195
287	High cyclic stability of the elastocaloric effect in sputtered TiNiCu shape memory films. *Applied Physics Letters*, **2012**, 101, 091903	3.4	170
286	Evolution of temperature profiles in TiNi films for elastocaloric cooling. *Acta Materialia*, **2014**, 81, 9-20	8.4	150
285	A Love-wave biosensor using nucleic acids as ligands. *Sensors and Actuators B: Chemical*, **2004**, 101, 308-315	3.5	144
284	Preparation and applications of magnetostrictive thin films. *Journal of Applied Physics*, **1994**, 76, 7000-7002	2.5	113
283	Sputter deposition of TiNi, TiNiPd and TiPd films displaying the two-way shape-memory effect. *Sensors and Actuators A: Physical*, **1996**, 53, 434-439	3.9	109
282	MEMS magnetic field sensor based on magnetoelectric composites. *Journal of Micromechanics and Microengineering*, **2012**, 22, 065024	2	106
281	Sensitivity enhancement of magnetoelectric sensors through frequency-conversion. *Sensors and Actuators A: Physical*, **2012**, 183, 16-21	3.9	103
280	First observation of light-induced spin change in vacuum deposited thin films of iron spin crossover complexes. *Dalton Transactions*, **2011**, 40, 6364-6	4.3	102
279	Thin film shape memory microvalves with adjustable operation temperature. *Sensors and Actuators A: Physical*, **2000**, 83, 214-219	3.9	102
278	Monitoring complex formation in the blood-coagulation cascade using aptamer-coated SAW sensors. *Biosensors and Bioelectronics*, **2005**, 20, 2044-52	11.8	100
277	Recent developments in shape memory thin film technology. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2004**, 378, 40-46	5.3	86

276	Piezoelectric properties of 0.5(Ba0.7Ca0.3TiO3) □0.5[Ba(Zr0.2Ti0.8)O3] ferroelectric lead-free laser deposited thin films. *Journal of Applied Physics*, **2011**, 109, 104101	2.5	82
275	Giant magnetostrictive thin films for applications in microelectromechanical systems (invited). *Journal of Applied Physics*, **2000**, 87, 4691-4695	2.5	77
274	Low damping resonant magnetoelectric sensors. *Applied Physics Letters*, **2010**, 97, 152503	3.4	76
273	Phase engineering and supercompatibility of shape memory alloys. *Materials Today*, **2018**, 21, 265-277	21.8	76
272	Giant magnetoelectric effect in vacuum. *Applied Physics Letters*, **2013**, 102, 232905	3.4	75
271	Local Evolution of the Elastocaloric Effect in TiNi-Based Films. *Shape Memory and Superelasticity*, **2015**, 1, 142-152	2.8	74
270	Giant Magnetoelectric Effect in Thin-Film Composites. *Journal of the American Ceramic Society*, **2013**, 96, 1673-1681	3.8	74
269	Giant magnetostrictive multilayers (invited). *Journal of Applied Physics*, **1999**, 85, 6232-6237	2.5	73
268	Highly sensitive wafer-level packaged MEMS magnetic field sensor based on magnetoelectric composites. *Sensors and Actuators A: Physical*, **2013**, 189, 321-327	3.9	71
267	Shape memory microvalves based on thin films or rolled sheets. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **1999**, 273-275, 784-788	5.3	71
266	Magnetostrictive actuation in microsystems. *Sensors and Actuators A: Physical*, **2000**, 81, 275-280	3.9	69
265	Noise Performance of Magnetometers With Resonant Thin-Film Magnetoelectric Sensors. *IEEE Transactions on Instrumentation and Measurement*, **2011**, 60, 2995-3001	5.2	67
264	Giant magnetostrictive spring magnet type multilayers. *Journal of Applied Physics*, **1997**, 81, 5420-5422	2.5	67
263	Nanostructured magnetic FeNiCo/Teflon multilayers for high-frequency applications in the gigahertz range. *Applied Physics Letters*, **2006**, 89, 242501	3.4	67
262	Fully integrable magnetic field sensor based on delta-E effect. *Applied Physics Letters*, **2011**, 99, 223502	3.4	64
261	Optimization of the /spl Delta/E effect in thin films and multilayers by magnetic field annealing. *IEEE Transactions on Magnetics*, **2002**, 38, 2829-2831	2	61
260	Wide Band Low Noise Love Wave Magnetic Field Sensor System. *Scientific Reports*, **2018**, 8, 278	4.9	60
259	Discrimination of single mutations in cancer-related gene fragments with a surface acoustic wave sensor. *Analytical Chemistry*, **2006**, 78, 4865-71	7.8	59

258	Highly sensitive strain sensors based on magnetic tunneling junctions. *Applied Physics Letters*, **2002**, 81, 313-315	3.4	58
257	Low temperature aluminum nitride thin films for sensory applications. *AIP Advances*, **2016**, 6, 075115	1.5	58
256	Phase modulated magnetoelectric delta-E effect sensor for sub-nano tesla magnetic fields. *Applied Physics Letters*, **2015**, 107, 152402	3.4	57
255	Multitarget sputtering of high magnetostrictive Tb-Dy-Fe films. *Journal of Applied Physics*, **1994**, 75, 5653-5655	2.5	54
254	Deposition of Nanocomposites by Plasmas. *Contributions To Plasma Physics*, **2007**, 47, 537-544	1.4	52
253	Micropatterned Freestanding Superelastic TiNi Films. *Advanced Engineering Materials*, **2013**, 15, 66-69	3.5	51
252	Self-Biased Magnetoelectric Composites: An Overview and Future Perspectives. *Energy Harvesting and Systems*, **2016**, 3, 1-42	4.4	48
251	Corrosion performance and mechanical properties of sputter-deposited MgY and MgGd alloys. *Corrosion Science*, **2014**, 78, 43-54	6.8	48
250	Time-of-flight magnetic flow cytometry in whole blood with integrated sample preparation. *Lab on A Chip*, **2013**, 13, 1035-8	7.2	48
249	Inverse bilayer magnetoelectric thin film sensor. *Applied Physics Letters*, **2016**, 109, 022901	3.4	47
248	Ultra-Low Fatigue Quaternary TiNi-Based Films for Elastocaloric Cooling. *Shape Memory and Superelasticity*, **2016**, 2, 95-103	2.8	46
247	Functional Polymer Nanocomposites. *Polymers and Polymer Composites*, **2008**, 16, 471-481	0.8	46
246	Exchange biased magnetoelectric composites for magnetic field sensor application by frequency conversion. *Journal of Applied Physics*, **2015**, 117, 17B513	2.5	45
245	Magnetic anisotropy and domain patterning of amorphous films by He-ion irradiation. *Applied Physics Letters*, **2005**, 86, 162502	3.4	45
244	Fabrication and simulation of magnetostrictive thin-film actuators. *Sensors and Actuators A: Physical* , **1995**, 50, 105-109	3.9	45
243	Giant magnetostrictive thin film materials and applications. *Journal of Alloys and Compounds*, **1997**, 258, 126-132	5.7	43
242	Electrically modulated magnetoelectric sensors. *Applied Physics Letters*, **2016**, 108, 182902	3.4	43
241	Magnetoelectric thin film composites with interdigital electrodes. *Applied Physics Letters*, **2013**, 103, 032902	3.4	42

240	TiNi-based films for elastocaloric microcooling□Fatigue life and device performance. *APL Materials*, **2016**, 4, 064102	5.7	42
239	Magnetoelectric magnetic field sensors. *MRS Bulletin*, **2018**, 43, 834-840	3.2	41
238	Evaluation of magnetoelectric sensor systems for cardiological applications. *Measurement: Journal of the International Measurement Confederation*, **2018**, 116, 230-238	4.6	40
237	SAW Sensor System for Marker-Free Molecular Interaction Analysis. *Analytical Letters*, **2006**, 39, 1747-1757	2.2	40
236	Successive occurrence of ferromagnetic and shape memory properties during crystallization of NiMnGa freestanding films. *Journal of Magnetism and Magnetic Materials*, **2006**, 302, 421-428	2.8	39
235	The ferromagnetic shape memory system Fe□Pd□. *Acta Materialia*, **2010**, 58, 5949-5961	8.4	38
234	Elastocaloric Cooling on the Miniature Scale: A Review on Materials and Device Engineering. *Energy Technology*, **2018**, 6, 1588-1604	3.5	37
233	Integration of two degree-of-freedom magnetostrictive actuation and piezoresistive detection: application to a two-dimensional optical scanner. *Journal of Microelectromechanical Systems*, **2002**, 11, 355-361	2.5	37
232	Multimode delta-E effect magnetic field sensors with adapted electrodes. *Applied Physics Letters*, **2016**, 108, 222401	3.4	37
231	Pushing the detection limit of thin film magnetoelectric heterostructures. *Journal of Materials Research*, **2017**, 32, 1009-1019	2.5	35
230	Pressure sensor based on magnetic tunnel junctions. *Journal of Applied Physics*, **2009**, 105, 07C914	2.5	34
229	Determination of elastic modulus of thin films and small specimens using beam bending methods. *Journal of Materials Research*, **1999**, 14, 2152-2161	2.5	33
228	Magnetic properties and microstructure of giant magnetostrictive TbFe/FeCo multilayers. *Journal of Applied Physics*, **1998**, 83, 7267-7269	2.5	32
227	Biofunctional structural design of SAW sensor chip surfaces in a microfluidic sensor system. *Sensors and Actuators B: Chemical*, **2007**, 124, 46-52	8.5	31
226	High-frequency magnetoelastic materials for remote-interrogated stress sensors. *Journal of Magnetism and Magnetic Materials*, **2002**, 242-245, 1126-1131	2.8	31
225	Elastic modulus of TbDyFe films□ comparison of nanoindentation and bending measurements. *Thin Solid Films*, **1996**, 287, 208-213	2.2	30
224	Tuning fork for noise suppression in magnetoelectric sensors. *Sensors and Actuators A: Physical*, **2016**, 237, 91-95	3.9	29
223	Mechanical-Resonance-Enhanced Thin-Film Magnetoelectric Heterostructures for Magnetometers, Mechanical Antennas, Tunable RF Inductors, and Filters. *Materials*, **2019**, 12,	3.5	29

222	Advanced magneto-optical microscopy: Imaging from picoseconds to centimeters - imaging spin waves and temperature distributions (invited). *AIP Advances*, **2016**, 6, 055605	1.5	29
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220	Magnetoelastic and magnetostatic interactions in exchange-spring multilayers. *Physical Review B*, **2005**, 72,	3.3	28
219	Comparison of the corrosion behaviour of bulk and thin film magnesium alloys. *Corrosion Science*, **2010**, 52, 3973-3977	6.8	27
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217	First experimental test of a new monochromated and aberration-corrected 200 kV field-emission scanning transmission electron microscope. *Ultramicroscopy*, **2006**, 106, 963-9	3.1	27
216	Micro-sensor coupling magnetostriction and magnetoresistive phenomena. *Journal of Magnetism and Magnetic Materials*, **2002**, 242-245, 1132-1135	2.8	27
215	Giant magnetostrictive thin film materials and applications. *Journal of Alloys and Compounds*, **1997**, 258, 126-132	5.7	27
214	Mesoscale simulation of elastocaloric cooling in SMA films. *Acta Materialia*, **2017**, 136, 105-117	8.4	26
213	Dual wavelength magneto-optical imaging of magnetic thin films. *Applied Physics Letters*, **2013**, 103, 142410	3.4	25
212	. *IEEE Transactions on Magnetics*, **1997**, 33, 2163-2166	2	24
211	Integration of crossed anisotropy magnetic core into toroidal thin-film inductors. *IEEE Transactions on Microwave Theory and Techniques*, **2005**, 53, 2096-2100	4.1	24
210	Magnetism, elasticity, and magnetostriction of FeCoGa alloys. *Journal of Applied Physics*, **2003**, 93, 8627-8629	2.5	24
209	Strain sensors based on magnetostrictive GMR/TMR structures. *IEEE Transactions on Magnetics*, **2002**, 38, 2826-2828	2	24
208	Energy transduction ferroic materials. *Materials Today*, **2018**, 21, 771-784	21.8	23
207	Comparison of the Fatigue Performance of Commercially Produced Nitinol Samples versus Sputter-Deposited Nitinol. *Journal of Materials Engineering and Performance*, **2014**, 23, 2437-2445	1.6	23
206	Origin of hysteretic magnetoelastic behavior in magnetoelectric 2-2 composites. *Applied Physics Letters*, **2014**, 105, 202406	3.4	23
205	The biocompatibility and mechanical properties of cylindrical NiTi thin films produced by magnetron sputtering. *Materials Science and Engineering C*, **2012**, 32, 2523-2528	8.3	23

204	Local setting of magnetic anisotropy in amorphous films by Co ion implantation. *Journal Physics D: Applied Physics*, **2009**, 42, 055006	3	23
203	Combination of a SAW-biosensor with MALDI mass spectrometric analysis. *Biosensors and Bioelectronics*, **2008**, 23, 1496-502	11.8	23
202	Giant magnetostrictive TbFe/Fe multilayers. *Journal of Alloys and Compounds*, **1997**, 258, 133-137	5.7	22
201	Positive/negative magnetostrictive GMR trilayer systems as strain gauges. *Journal of Magnetism and Magnetic Materials*, **2005**, 290-291, 795-799	2.8	22
200	Fabrication of two-dimensional hybrid photonic crystals utilizing electron beam lithography. *Microelectronic Engineering*, **2005**, 78-79, 442-447	2.5	22
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194	Magnetic vector field sensor using magnetoelectric thin-film composites. *IEEE Transactions on Magnetics*, **2005**, 41, 3667-3669	2	21
193	Effect of crystallographic compatibility and grain size on the functional fatigue of sputtered TiNiCuCo thin films. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2016**, 374,	3	20
192	Adaptive Readout Schemes for Thin-Film Magnetoelectric Sensors Based on the delta-E Effect. *IEEE Sensors Journal*, **2016**, 16, 4891-4900	4	20
191	Electrically modulated magnetoelectric AlN/FeCoSiB film composites for DC magnetic field sensing. *Journal Physics D: Applied Physics*, **2018**, 51, 354002	3	20
190	Polycrystalline and amorphous MgZnCa thin films. *Corrosion Science*, **2012**, 63, 234-238	6.8	20
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188	Shape memory effect and magnetostriction of sputtered NiMnGa thin films **2003**,		20
187	AlScN-based MEMS magnetoelectric sensor. *Applied Physics Letters*, **2020**, 117, 132903	3.4	20

186	Thermal-Mechanical Noise in Resonant Thin-Film Magnetoelectric Sensors. *IEEE Sensors Journal*, **2017**, 17, 2338-2348	4	19
185	Influence of the quality factor on the signal to noise ratio of magnetoelectric sensors based on the delta-E effect. *Applied Physics Letters*, **2019**, 114, 183504	3.4	19
184	Exchange biased magnetoelectric composites for vector field magnetometers. *Journal of Applied Physics*, **2013**, 113, 17C725	2.5	19
183	Microscopic magnetic and high-frequency properties of a stress sensor using FeCoBSi magnetostrictive thin films. *IEEE Transactions on Magnetics*, **2005**, 41, 3691-3693	2	19
182	Materials development for thin film actuators. *Microsystem Technologies*, **1995**, 1, 178-184	1.7	19
181	Modeling and Analysis of Noise Sources for Thin-Film Magnetoelectric Sensors Based on the Delta-E Effect. *IEEE Transactions on Instrumentation and Measurement*, **2017**, 66, 2771-2779	5.2	18
180	Thin magnesium layer confirmed as an antibacterial and biocompatible implant coating in a co-culture model. *Molecular Medicine Reports*, **2017**, 15, 1624-1630	2.9	18
179	Magnetic anisotropy controlled FeCoSiB thin films for surface acoustic wave magnetic field sensors. *Applied Physics Letters*, **2020**, 116, 073503	3.4	18
178	Revisiting magnetic stripe domains anisotropy gradient and stripe asymmetry. *Journal of Applied Physics*, **2013**, 113, 073903	2.5	18
177	Sputter deposition of NiTi to investigate the Ti loss rate as a function of composition from cast melted targets. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2004**, 378, 429-433	5.3	18
176	Time-resolved scanning electron microscopy with polarization analysis. *Applied Physics Letters*, **2016** , 108, 142401	3.4	18
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174	High ultimate tensile stress in nano-grained superelastic NiTi thin films. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2006**, 415, 304-308	5.3	17
173	Application of a multilayered magnetostrictive film to a micromachined 2-D optical scanner. *Journal of Microelectromechanical Systems*, **2004**, 13, 264-271	2.5	17
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171	Antiparallel exchange biased multilayers for low magnetic noise magnetic field sensors. *Applied Physics Letters*, **2019**, 114, 192410	3.4	16
170	Noise of a JFET Charge Amplifier for Piezoelectric Sensors. *IEEE Sensors Journal*, **2017**, 17, 7364-7371	4	16
169	Highly strain-sensitive magnetostrictive tunnel magnetoresistance junctions. *Journal of Magnetism and Magnetic Materials*, **2015**, 384, 308-313	2.8	16

168	Self-sensing atomic force microscopy cantilevers based on tunnel magnetoresistance sensors. *Applied Physics Letters*, **2013**, 102, 153104	3.4	16
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165	Fabrication of TiNi thin film stents. *Smart Materials and Structures*, **2009**, 18, 104010	3.4	16
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162	Magnetoelastic thin films for high-frequency applications. *IEEE Transactions on Magnetics*, **2001**, 37, 2690-2692		16
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160	Non-contact strain measurements based on inverse magnetostriction. *Sensors and Actuators A: Physical*, **2010**, 158, 224-230	3.9	15
159	Analysis of proteolytic degradation of a crude protein mixture using a surface acoustic wave sensor. *Biosensors and Bioelectronics*, **2007**, 22, 2360-5	11.8	15
158	Structuring of sputtered superelastic NiTi thin films by photolithography and etching. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2008**, 481-482, 623-625	5.3	15
157	High-frequency properties of FeCoSiB thin films with crossed anisotropy. *IEEE Transactions on Magnetics*, **2004**, 40, 2703-2705	2	15
156	The impact of O/Ar ratio on morphology and functional properties in reactive sputtering of metal oxide thin films. *Nanotechnology*, **2019**, 30, 235603	3.4	14
155	Magnetron Sputtering a New Fabrication Method of Iron Based Biodegradable Implant Materials. *Advances in Materials Science and Engineering*, **2015**, 2015, 1-9	1.5	14
154	Characterization of magnetic tunnel junctions (MTJ) with magnetostrictive free layer materials. *Journal of Magnetism and Magnetic Materials*, **2004**, 272-276, 2023-2024	2.8	14
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152	Fast corroding, thin magnesium coating displays antibacterial effects and low cytotoxicity. *Biofouling*, **2017**, 33, 294-305	3.3	13
151	Noise Analysis and Comparison of Phase- and Frequency-Detecting Readout Systems: Application to SAW Delay Line Magnetic Field Sensor. *IEEE Sensors Journal*, **2019**, 19, 8000-8008	4	13

150	Capability of Sputtered Micro-patterned NiTi Thick Films. *Shape Memory and Superelasticity*, **2015**, 1, 286-293	2.8	13
149	Amorphous FeCoSiB for exchange bias coupled and decoupled magnetoelectric multilayer systems: Real-structure and magnetic properties. *Journal of Applied Physics*, **2014**, 116, 134302	2.5	13
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146	Shape memory alloy engine for high efficiency low-temperature gradient thermal to electrical conversion. *Applied Energy*, **2019**, 251, 113277	10.7	12
145	Cu-rich Ti52.8Ni22.2Cu22.5Co2.5 shape memory alloy films with ultra-low fatigue for elastocaloric applications. *Journal of Applied Physics*, **2020**, 127, 225105	2.5	12
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138	Nitinol: Tubing versus sputtered film - microcleanliness and corrosion behavior. *Journal of Biomedical Materials Research - Part B Applied Biomaterials*, **2016**, 104, 1176-81	3.5	11
137	Numerical simulation and experimental investigation of the elastocaloric cooling effect in sputter-deposited TiNiCuCo thin films. *Continuum Mechanics and Thermodynamics*, **2018**, 30, 53-68	3.5	10
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135	Bistability in a multiferroic composite resonator. *Applied Physics Letters*, **2018**, 113, 022903	3.4	10
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130	Cascaded SMA-Film Based Elastocaloric Cooling **2019**,		9
129	Correlation between phase compatibility and efficient energy conversion in Zr-doped Barium Titanate. *Scientific Reports*, **2020**, 10, 3496	4.9	9
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126	High-frequency magnetic properties of FeCoBSi/SiO/sub 2/ and (FeCo/CoB)/SiO/sub 2/ multilayer thin films. *IEEE Transactions on Magnetics*, **2003**, 39, 3166-3168	2	9
125	Zero Hysteresis in Shape-Memory Ti-Ni-X Films (X = Cu, Pd) Under Constraint. *Materials Research Society Symposia Proceedings*, **1999**, 604, 117		9
124	Method for Fabricating Miniaturized NiTi Self-Expandable Thin Film Devices with Increased Radiopacity. *Shape Memory and Superelasticity*, **2016**, 2, 391-398	2.8	9
123	Fabrication of self-expandable NiTi thin film devices with micro-electrode array for bioelectric sensing, stimulation and ablation. *Biomedical Microdevices*, **2016**, 18, 106	3.7	8
122	Microstructured Nickel-Titanium Thin Film Leaflets for Hybrid Tissue Engineered Heart Valves Fabricated by Magnetron Sputter Deposition. *Cardiovascular Engineering and Technology*, **2016**, 7, 69-77	2.2	8
121	Magnetoelastic hysteresis in 5M NiMnGa single crystals. *Scripta Materialia*, **2008**, 58, 1022-1024	5.6	8
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119	Fundamental Noise Limits and Sensitivity of Piezoelectrically Driven Magnetoelastic Cantilevers. *Journal of Microelectromechanical Systems*, **2020**, 29, 1347-1361	2.5	8
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113	Direct Link between Specific Magnetic Domain Activities and Magnetic Noise in Modulated Magnetoelectric Sensors. *Physical Review Applied*, **2020**, 13,	4.3	7
112	Fabrication and Characterization of Freestanding NiTi Based Thin Film Materials for Shape Memory Micro-actuator Applications. *Shape Memory and Superelasticity*, **2019**, 5, 327-335	2.8	7
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