Hanus Seiner

List of Publications by Year
in descending order

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129 papers	2,596 citations	236925 25 h-index	243625 44 g-index
129 all docs	129 docs citations	129 times ranked	1544 citing authors

#	Article	IF	Citations
1	Highly mobile twinned interface in 10M modulated Niâ€“Mnâ€“Ga martensite: Analysis beyond the tetragonal approximation of lattice. Acta Materialia, 2011, 59, 7450-7463.	7.9	183
2	On the coupling between martensitic transformation and plasticity in NiTi: Experiments and continuum based modelling. Progress in Materials Science, 2018, 98, 249-298.	32.8	125
3	Elastic constants of bcc austenite and 2H orthorhombic martensite in CuAlNi shape memory alloy. Acta Materialia, 2005, 53, 3643-3661.	7.9	108
4	Determination of All 21 Independent Elastic Coefficients of Generally Anisotropic Solids by Resonant Ultrasound Spectroscopy: Benchmark Examples. Experimental Mechanics, 2014, 54, 1073-1085.	2.0	90
5	Beyond the strain recoverability of martensitic transformation in NiTi. International Journal of Plasticity, 2019, 116, 232-264.	8.8	89
6	A microstructural model of motion of macro-twin interfaces in Niâ€“Mnâ€“Ga 10M martensite. Journal of the Mechanics and Physics of Solids, 2014, 64, 198-211.	4.8	88
7	Temperature dependence of twinning stress of Type I and Type II twins in 10M modulated Niâ€“Mnâ€“Ga martensite. Scripta Materialia, 2012, 67, 25-28.	5.2	84
8	Different microstructures of mobile twin boundaries in 10 M modulated Niâ€“Mnâ€“Ga martensite. Acta Materialia, 2013, 61, 622-631.	7.9	81
9	On the plastic deformation accompanying cyclic martensitic transformation in thermomechanically loaded NiTi. International Journal of Plasticity, 2018, 111, 53-71.	8.8	75
10	Modal resonant ultrasound spectroscopy for ferroelastics. Applied Physics A: Materials Science and Processing, 2009, 96, 557-567.	2.3	55
11	The relationships between sputter deposition conditions, grain size, and phase transformation temperatures in NiTi thin films. Acta Materialia, 2014, 70, 79-91.	7.9	50
12	The effect of athermal and isothermal Ï‰ phase particles on elasticity of Î²-Ti single crystals. Acta Materialia, 2016, 110, 185-191.	7.9	46
13	Nucleation and growth of hierarchical martensite in epitaxial shape memory films. Acta Materialia, 2017, 132, 327-334.	7.9	46
14	Evolution of macroscopic elastic moduli of martensitic polycrystalline NiTi and NiTiCu shape memory alloys with pseudoplastic straining. Acta Materialia, 2017, 123, 146-156.	7.9	46
15	Application of ultrasonic methods to determine elastic anisotropy of polycrystalline copper processed by equal-channel angular pressing. Acta Materialia, 2010, 58, 235-247.	7.9	44
16	Evolution of martensitic microstructures in nanocrystalline NiTi wires deformed in tension. Acta Materialia, 2021, 218, 117166.	7.9	42
17	Youngâ€™s moduli of sputter-deposited NiTi films determined by resonant ultrasound spectroscopy: Austenite, R-phase, and martensite. Scripta Materialia, 2015, 101, 24-27.	5.2	41
18	Anisotropic elastic moduli and internal friction of graphene nanoplatelets/silicon nitride composites. Composites Science and Technology, 2013, 75, 93-97.	7.8	40

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19	Elastic properties of silicon nitride ceramics reinforced with graphene nanofillers. Materials and Design, 2015, 87, 675-680.	7.0	37
20	Temperature dependence of elastic properties in austenite and martensite of Ni-Mn-Ga epitaxial films. Acta Materialia, 2018, 145, 298-305.	7.9	37
21	2019, 171, 107703.	7.0	37
22	Thermomechanical model for NiTi-based shape memory alloys covering macroscopic localization of martensitic transformation. International Journal of Solids and Structures, 2021, 221, 117-129.	2.7	36
23	Combined effect of structural softening and magneto-elastic coupling on elastic coefficients of Ni Mn Ga austenite. Journal of Alloys and Compounds, 2013, 577, S131-S135.	5.5	30
24	Elastic moduli and elastic anisotropy of cold sprayed metallic coatings. Surface and Coatings Technology, 2016, 291, 342-347.	4.8	30
25	Building Hierarchical Martensite. Advanced Functional Materials, 2021, 31, 2005715.	14.9	30
26	Ultrasonic bandgaps in 3D-printed periodic ceramic microlattices. Ultrasonics, 2018, 82, 91-100.	3.9	27
27	Microstructure, martensitic transformation and anomalies in câ€²-softening in Coâ€“Niâ€“Al ferromagnetic shape memory alloys. Acta Materialia, 2013, 61, 5869-5876.	7.9	26
28	Microhardness and microstructure evolution of ultra-fine grained Ti-15Mo and TIMETAL LCB alloys prepared by high pressure torsion. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 682, 220-228.	5.6	26
29	The effect of antiphase boundaries on the elastic properties of Niâ€“Mnâ€“Ga austenite and premartensite. Journal of Physics Condensed Matter, 2013, 25, 425402.	1.8	25
30	Shape recovery mechanism observed in single crystals of Cuâ€“Alâ€“Ni shape memory alloy. Phase Transitions, 2008, 81, 537-551.	1.3	24
31	Nucleation of austenite in mechanically stabilized martensite by localized heating. Journal of Alloys and Compounds, 2013, 577, S37-S42.	5.5	24
32	Elasticity and magnetism of Ni₂ MnGa premartensitic tweed. Physica Status Solidi (B): Basic Research, 2014, 251, 2097-2103.	1.5	24
33	The relation between lattice parameters and very low twinning stress in Ni₅₀Mn_{25+x}Ga_{25â^'x}magnetic shape memory alloys. Smart Materials and Structures, 2016, 25, 025001.	3.5	23
34	Sub-surface measurements of the austenite microstructure in response to martensitic phase transformation. Acta Materialia, 2019, 179, 273-286.	7.9	23
35	Forward and inverse problems for surface acoustic waves in anisotropic media: A Ritzâ€“Rayleigh method based approach. Ultrasonics, 2015, 56, 381-389.	3.9	21
36	Anomalous lattice softening of Ni2MnGa austenite due to magnetoelastic coupling. Journal of Applied Physics, 2012, 111, .	2.5	20

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37	Phase stabilization in plasma sprayed BaTiO3. Ceramics International, 2013, 39, 5039-5048.	4.8	20
38	Elastic constants of Î²-Ti15Mo. Journal of Alloys and Compounds, 2019, 792, 960-967.	5.5	20
39	Temperature dependence of elastic properties of cubic and orthorhombic phases in Cuâ€“Alâ€“Ni shape memory alloy near their stability limits. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 462, 320-324.	5.6	19
40	Non-classical austenite-martensite interfaces observed in single crystals of Cuâ€“Alâ€“Ni. Phase Transitions, 2009, 82, 793-807.	1.3	19
41	Differently mobile twin boundaries and magnetic shape memory effect in 10M martensite of Niâ€“Mnâ€“Ga. Materials Research Bulletin, 2013, 48, 5105-5109.	5.2	19
42	Evolution of soft-phonon modes in Feâ€“Pd shape memory alloy under large elastic-like strains. Acta Materialia, 2016, 105, 182-188.	7.9	19
43	Achieving high strength and low elastic modulus in interstitial biomedical Tiâ€“Nbâ€“Zrâ€“O alloys through compositional optimization. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 839, 142833.	5.6	19
44	Application of resonant ultrasound spectroscopy to determine elastic constants of plasma-sprayed coatings with high internal friction. Surface and Coatings Technology, 2013, 232, 747-757.	4.8	18
45	Elastic constants of non-modulated Ni-Mn-Ga martensite. Scripta Materialia, 2017, 136, 20-23.	5.2	18
46	Laser-Ultrasonic Characterization of Strongly Anisotropic Materials by Transient Grating Spectroscopy. Experimental Mechanics, 2021, 61, 663-676.	2.0	18
47	Evolution of elastic constants of the NiTi shape memory alloy during a stress-induced martensitic transformation. Acta Materialia, 2021, 208, 116718.	7.9	18
48	Measurement of mechanical and fatigue properties using unified, simple-geometry specimens: Cold spray additively manufactured pure metals. Surface and Coatings Technology, 2021, 412, 126929.	4.8	18
49	In situ characterization of local elastic properties of thin shape memory films by surface acoustic waves. Smart Materials and Structures, 2016, 25, 127002.	3.5	17
50	Linearized forward and inverse problems of the resonant ultrasound spectroscopy for the evaluation of thin surface layers. Journal of the Acoustical Society of America, 2010, 128, 3426-3437.	1.1	16
51	A finite element analysis of the morphology of the twinned-to-detwinned interface observed in microstructure of the Cuâ€“Alâ€“Ni shape memory alloy. International Journal of Solids and Structures, 2011, 48, 2005-2014.	2.7	16
52	Sensitivity of the resonant ultrasound spectroscopy to weak gradients of elastic properties. Journal of the Acoustical Society of America, 2012, 131, 3775-3785.	1.1	16
53	Anisotropic elasticity of DyScO₃substrates. Journal of Physics Condensed Matter, 2012, 24, 385404.	1.8	16
54	Orthorhombic intermediate phase originating from {110} nanotwinning in Ni50.0Mn28.7Ga21.3 modulated martensite. Acta Materialia, 2017, 132, 335-344.	7.9	16

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55	Magneto-elastic attenuation in austenitic phase of Niâ€“Mnâ€“Ga alloy investigated by ultrasonic methods. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 521-522, 205-208.	5.6	15
56	Mobile Interfacial Microstructures in Single Crystals of Cuâ€“Alâ€“Ni Shape Memory Alloy. Shape Memory and Superelasticity, 2015, 1, 268-274.	2.2	15
57	Branching of twins in shape memory alloys revisited. Journal of the Mechanics and Physics of Solids, 2020, 141, 103961.	4.8	15
58	Interfacial Microstructures in Martensitic Transitions: From Optical Observations to Mathematical Modeling. International Journal for Multiscale Computational Engineering, 2009, 7, 445-456.	1.2	15
59	Acoustic metamaterial behavior of three-dimensional periodic architectures assembled by robocasting. Applied Physics Letters, 2014, 105, 211904.	3.3	14
60	B2â€‰â†’â€‰B19â€²â€‰â†’â€‰B2T Martensitic Transformation as a Mechanism of Plastic Deformation of NiTi Shape Memory and Superelasticity, 2019, 5, 383-396.	2.2	14
61	Resonant ultrasound spectroscopy â€“ a tool to probe magneto-elastic properties of ferromagnetic shape memory alloys. European Physical Journal B, 2013, 86, 1.	1.5	13
62	An ultrasonic internal friction study of ultrafine-grained AZ31 magnesium alloy. Journal of Materials Science, 2015, 50, 808-818.	3.7	13
63	On the complementarity between resistivity measurement and ultrasonic measurement for in-situ characterization of phase transitions in Ti-alloys. Journal of Alloys and Compounds, 2018, 762, 868-872.	5.5	12
64	On the relation between microstructure and elastic constants of tungsten/steel composites fabricated by spark plasma sintering. Fusion Engineering and Design, 2018, 133, 51-58.	1.9	12
65	Effect of electron localization in theoretical design of Ni-Mn-Ga based magnetic shape memory alloys. Materials and Design, 2021, 209, 109917.	7.0	12
66	Switching the soft shearing mode orientation in Niâ€“Mnâ€“Ga non-modulated martensite by Co and Cu doping. Smart Materials and Structures, 2020, 29, 045022.	3.5	12
67	The effects of microstructure on crackling noise during martensitic transformation in Cu-Al-Ni. Applied Physics Letters, 2015, 107, 171601.	3.3	11
68	Magnetic Domains and Twin Microstructure of Single Crystal Niâ€“Mnâ€“Ga Exhibiting Magnetic Shape Memory Effect. IEEE Transactions on Magnetics, 2015, 51, 1-4.	2.1	11
69	Temperature dependence of twinning stress â€“ Analogy between Cuâ€“Niâ€“Al and Niâ€“Mnâ€“Ga shape memory single crystals. Philosophical Magazine, 2017, 97, 1479-1497.	1.6	11
70	Non-conventional twins in five-layer modulated Ni-Mn-Ga martensite. Scripta Materialia, 2019, 162, 497-502.	5.2	11
71	Transformation Pathway upon Heating of Metastable Î² Titanium Alloy Ti-15Mo Investigated by Neutron Diffraction. Materials, 2019, 12, 3570.	2.9	11
72	Flexible and Tough Superelastic Coâ€“Cr Alloys for Biomedical Applications. Advanced Materials, 2022, 34, e2202305.	21.0	11

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73	Multifunctional 3Dâ€Printed Cellular MAXâ€Phase Architectures. Advanced Materials Technologies, 2019, 4, 1900375.	5.8	10
74	Softening of Shear Elastic Coefficients in Shape Memory Alloys Near the Martensitic Transition: A Study by Laser-Based Resonant Ultrasound Spectroscopy. Metals, 2020, 10, 1383.	2.3	10
75	Characterization of bonding quality of a cold-sprayed deposit by laser resonant ultrasound spectroscopy. Ultrasonics, 2020, 106, 106140.	3.9	10
76	Application of the Ritzâ€“Rayleigh method for Lamb waves in extremely anisotropic media. Wave Motion, 2020, 96, 102567.	2.0	10
77	Hysteretic structural changes within five-layered modulated 10M martensite of Niâ€“Mnâ€“Ga(â€“Fe). Journal of Physics Condensed Matter, 2021, 33, 265404.	1.8	10
78	On the evaluation of temperature dependence of elastic constants of martensitic phases in shape memory alloys from resonant ultrasound spectroscopy studies. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 481-482, 567-573.	5.6	9
79	Incommensurateness in nanotwinning models of modulated martensites. Physical Review B, 2015, 92, .	3.2	9
80	Elasticity and internal friction of magnesium alloys at room and elevated temperatures. Journal of Materials Science, 2018, 53, 8545-8553.	3.7	9
81	Crack growth in Fe-Si (2â€¯wt%) single crystals on macroscopic and atomistic level. Results in Physics, 2019, 14, 102450.	4.1	9
82	Ab Initio Study of Martensitic Transition in Ni₂MnGa. Acta Physica Polonica A, 2018, 134, 804-806.	0.5	9
83	Frequency-dependent acoustic energy focusing in hexagonal ceramic micro-scaffolds. Wave Motion, 2020, 92, 102417.	2.0	7
84	The effect of grain and pore sizes on the mechanical behavior of thin Al films deposited under different conditions. Acta Materialia, 2015, 87, 321-331.	7.9	6
85	Ultrasonic detection of ductile-to-brittle transitions in free-cutting aluminum alloys. NDT and E International, 2015, 69, 40-47.	3.7	6
86	Mechanical and magnetic properties of semi-Heusler/light-metal composites consolidated by spark plasma sintering. Materials and Design, 2017, 126, 351-357.	7.0	6
87	3D spatial reconstruction of macroscopic austeniteâ€“martensite transition zones in NiTi wires induced by tension and twisting using diffraction/scattering computed tomography. International Journal of Solids and Structures, 2021, 228, 111122.	2.7	6
88	Anisotropic Elastic and Acoustic Properties of Bulk Graphene Nanoplatelets Consolidated by Spark Plasma Sintering. Acta Physica Polonica A, 2015, 128, 670-674.	0.5	6
89	Evolution of Elastic Properties of Cold Sprayed Metal Coatings at Elevated Temperatures. Acta Physica Polonica A, 2018, 134, 794-798.	0.5	6
90	Sensitivity analysis of an inverse procedure for determination of elastic coefficients for strong anisotropy. Ultrasonics, 2005, 43, 253-263.	3.9	5

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91	Elastic constants of nanoporous III-V semiconductors. Journal Physics D: Applied Physics, 2015, 48, 245102.	2.8	5
92	Selective laser melting of iron: Multiscale characterization of mechanical properties. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 800, 140316.	5.6	5
93	Mechanical Stabilization of Martensite: Comparison of Ni-Mn-Ga and Cu-Ni-Al Shape Memory Single Crystals. Acta Physica Polonica A, 2018, 134, 627-630.	0.5	5
94	Non-linear elastic behavior of Ni-Fe-Ga(Co) shape memory alloy and Landau-energy landscape reconstruction. Acta Materialia, 2021, 224, 117530.	7.9	5
95	Experimental Observations versus Firstâ€Principles Calculations for Niâ€“Mnâ€“Ga Ferromagnetic Shape Memory Alloys: A Review. Physica Status Solidi - Rapid Research Letters, 2022, 16, .	2.4	5
96	Finite Elements Modeling of Mechanical and Acoustic Properties of a Ceramic Metamaterial Assembled by Robocasting. Applied Mechanics and Materials, 0, 821, 364-371.	0.2	4
97	Large Non-ergodic Magnetoelastic Damping in Niâ€“Mnâ€“Ga Austenite. Shape Memory and Superelasticity, 2020, 6, 89-96.	2.2	4
98	Propagation of an austeniteâ€“martensite interface in a thermal gradient; 218â€“225. Proceedings of the Estonian Academy of Sciences: Physics, Mathematics, 2007, 56, 218.	0.3	4
99	Structural characterization of semi-heusler/light metal composites prepared by spark plasma sintering. Scientific Reports, 2018, 8, 11133.	3.3	3
100	Two-dimensional laminates in monoclinic-II modulated martensites. International Journal of Solids and Structures, 2021, 221, 92-102.	2.7	3
101	Transient Grating Spectroscopy for Complete Elastic Anisotropy: Beyond the Measurement of Surface Acoustic Waves. , 2021, , .		3
102	Determination of elastic coefficients of bone and composite materials by acoustic immersion technique. Technology and Health Care, 2006, 14, 219-232.	1.2	2
103	Thermomechanical properties of single crystals evaluated by impulsive stimulated thermal scattering technique. Journal of Physics: Conference Series, 2011, 278, 012023.	0.4	2
104	Ceramic phononic crystals with MHz-range frequency band gaps. Proceedings of Meetings on Acoustics, 2017, , .	0.3	2
105	Architectured Multi-Metallic Structures Prepared by Cold Dynamic Spray Deposition. Key Engineering Materials, 0, 810, 107-112.	0.4	2
106	Numerical analysis of geometrically induced hardening in planar architectured materials. Composite Structures, 2020, 233, 111633.	5.8	2
107	An Analysis of Non-Classical Austenite-Martensite Interfaces in CuAlNi. , 0, , 383-390.		2
108	FEM Mo delling of Elastically Strained Interfacial Microstructures in Cu-Al-Ni Single Crystals. , 2009, , .		2

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109	Anisotropic Elasticity of Ceramic Micro-Scaffolds Fabricated by Robocasting. Acta Physica Polonica A, 2018, 134, 799-803.	0.5	2
110	Resonant ultrasound spectroscopy for investigation of thin surface coatings. WIT Transactions on Engineering Sciences, 2009, , .	0.0	2
111	<i>In Situ </i>Experimental Methods for Characterization of Deformation Processes in SMAs. Advances in Science and Technology, 0, , .	0.2	1
112	<i>In Situ</i> Detection of Surface Micro-Cracking in Ultrafine-Grained AZ31 Magnesium Alloy by Resonant Ultrasound Spectroscopy. Key Engineering Materials, 0, 606, 87-90.	0.4	1
113	Detection of Phase Transition in Free-Cutting Al-Mg-Si Alloys by Resonant Ultrasound Spectroscopy. Materials Science Forum, 0, 794-796, 21-26.	0.3	1
114	An ultrasonic study of relaxation processes in pure and mechanically alloyed tungsten. International Journal of Refractory Metals and Hard Materials, 2020, 90, 105233.	3.8	1
115	Non-Contact Characterization of Acoustoelastic Parameters of Advanced Materials by Laser-Ultrasound. Acta Physica Polonica A, 2018, 134, 807-810.	0.5	1
116	Elastic constants of Ti-15Mo single crystals and their evolution with thermal treatment. MATEC Web of Conferences, 2020, 321, 12012.	0.2	1
117	Differential geometry of ray surfaces in anisotropic solids and its contribution to NDE: Modelling and experiment. Ultrasonics, 2006, 44, e801-e806.	3.9	0
118	PS-17 Improvement of the Inversion Procedure in Resonant Ultrasound Spectroscopy for Generally Oriented, High Anisotropic Crystals. , 2006, , .		0
119	Novel approach to material evaluation of thin surface layers by resonant ultrasound spectroscopy. Journal of Physics: Conference Series, 2010, 214, 012045.	0.4	0
120	Determination of elastic properties of surface layers and coatings by resonant ultrasound spectroscopy. Journal of Physics: Conference Series, 2011, 278, 012004.	0.4	0
121	Xenon Focused Ion Beam in the Shape Memory Alloys Investigation - The Case of NiTi and CoNiAl. Microscopy and Microanalysis, 2014, 20, 334-335.	0.4	0
122	Magnetic domains and twin microstructure of single crystal Ni-Mn-Ga exhibiting magnetic shape memory effect. , 2015, , .		0
123	Highly mobile interfaces in shape memory alloys. MATEC Web of Conferences, 2015, 33, 01002.	0.2	0
124	Application of Laser-Ultrasound for Characterization of Plasma-Sprayed Ceramics. Defect and Diffusion Forum, 2016, 368, 69-72.	0.4	0
125	In-situ characterization of growth of isothermal ï‰ phase in metastable Î²-Ti alloy TIMETAL LCB. MATEC Web of Conferences, 2020, 321, 11037.	0.2	0
126	Ultrasonic Characterization of Nanoparticle-Based Ceramics Fabricated by Spark-Plasma Sintering. Ceramics, 2021, 4, 135-147.	2.6	0

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127	In Situ Characterization of the Elasticity and Stress-Induced Phase Transformation of NiTi Shape-Memory Alloy. Acta Physica Polonica A, 2018, 134, 811-814.	0.5	0
128	Modeling of the Formation of Stress-Induced Ï‰ Phase in Metastable Î² Titanium Alloys. Acta Physica Polonica A, 2018, 134, 769-773.	0.5	0
129	Application of Simplified Ray Method for the Determination of the Cortical Bone Elastic Coefficients by the Ultrasonic Wave Inversion. , 2007, , 304-307.		0