

Hanus Seiner

List of Publications by Year in descending order

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papers

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#	ARTICLE	IF	CITATIONS
1	Experimental Observations versus First-Principles Calculations for Ni-Mn-Ga Ferromagnetic Shape Memory Alloys: A Review. <i>Physica Status Solidi - Rapid Research Letters</i> , 2022, 16, .	2.4	5
2	Achieving high strength and low elastic modulus in interstitial biomedical Ti-Nb-Zr-O alloys through compositional optimization. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022, 839, 142833.	5.6	19
3	Flexible and Tough Superelastic Co-Cr Alloys for Biomedical Applications. <i>Advanced Materials</i> , 2022, 34, e2202305.	21.0	11
4	Building Hierarchical Martensite. <i>Advanced Functional Materials</i> , 2021, 31, 2005715.	14.9	30
5	Two-dimensional laminates in monoclinic-II modulated martensites. <i>International Journal of Solids and Structures</i> , 2021, 221, 92-102.	2.7	3
6	Selective laser melting of iron: Multiscale characterization of mechanical properties. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 800, 140316.	5.6	5
7	Laser-Ultrasonic Characterization of Strongly Anisotropic Materials by Transient Grating Spectroscopy. <i>Experimental Mechanics</i> , 2021, 61, 663-676.	2.0	18
8	Ultrasonic Characterization of Nanoparticle-Based Ceramics Fabricated by Spark-Plasma Sintering. <i>Ceramics</i> , 2021, 4, 135-147.	2.6	0
9	Evolution of elastic constants of the NiTi shape memory alloy during a stress-induced martensitic transformation. <i>Acta Materialia</i> , 2021, 208, 116718.	7.9	18
10	Measurement of mechanical and fatigue properties using unified, simple-geometry specimens: Cold spray additively manufactured pure metals. <i>Surface and Coatings Technology</i> , 2021, 412, 126929.	4.8	18
11	Hysteretic structural changes within five-layered modulated 10M martensite of Ni-Mn-Ga(Fe). <i>Journal of Physics Condensed Matter</i> , 2021, 33, 265404.	1.8	10
12	Thermomechanical model for NiTi-based shape memory alloys covering macroscopic localization of martensitic transformation. <i>International Journal of Solids and Structures</i> , 2021, 221, 117-129.	2.7	36
13	3D spatial reconstruction of macroscopic austenite-martensite transition zones in NiTi wires induced by tension and twisting using diffraction/scattering computed tomography. <i>International Journal of Solids and Structures</i> , 2021, 228, 111122.	2.7	6
14	Evolution of martensitic microstructures in nanocrystalline NiTi wires deformed in tension. <i>Acta Materialia</i> , 2021, 218, 117166.	7.9	42
15	Effect of electron localization in theoretical design of Ni-Mn-Ga based magnetic shape memory alloys. <i>Materials and Design</i> , 2021, 209, 109917.	7.0	12
16	Transient Grating Spectroscopy for Complete Elastic Anisotropy: Beyond the Measurement of Surface Acoustic Waves. , 2021, , .		3
17	Non-linear elastic behavior of Ni-Fe-Ga(Co) shape memory alloy and Landau-energy landscape reconstruction. <i>Acta Materialia</i> , 2021, 224, 117530.	7.9	5
18	Frequency-dependent acoustic energy focusing in hexagonal ceramic micro-scaffolds. <i>Wave Motion</i> , 2020, 92, 102417.	2.0	7

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19	Numerical analysis of geometrically induced hardening in planar architected materials. <i>Composite Structures</i> , 2020, 233, 111633.	5.8	2
20	An ultrasonic study of relaxation processes in pure and mechanically alloyed tungsten. <i>International Journal of Refractory Metals and Hard Materials</i> , 2020, 90, 105233.	3.8	1
21	In-situ characterization of growth of isothermal β phase in metastable β -Ti alloy TIMETAL LCB. <i>MATEC Web of Conferences</i> , 2020, 321, 11037.	0.2	0
22	Softening of Shear Elastic Coefficients in Shape Memory Alloys Near the Martensitic Transition: A Study by Laser-Based Resonant Ultrasound Spectroscopy. <i>Metals</i> , 2020, 10, 1383.	2.3	10
23	Branching of twins in shape memory alloys revisited. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 141, 103961.	4.8	15
24	Characterization of bonding quality of a cold-sprayed deposit by laser resonant ultrasound spectroscopy. <i>Ultrasonics</i> , 2020, 106, 106140.	3.9	10
25	Large Non-ergodic Magnetoelastic Damping in Ni-Mn-Ga Austenite. <i>Shape Memory and Superelasticity</i> , 2020, 6, 89-96.	2.2	4
26	Application of the Ritz-Rayleigh method for Lamb waves in extremely anisotropic media. <i>Wave Motion</i> , 2020, 96, 102567.	2.0	10
27	Switching the soft shearing mode orientation in Ni-Mn-Ga non-modulated martensite by Co and Cu doping. <i>Smart Materials and Structures</i> , 2020, 29, 045022.	3.5	12
28	Elastic constants of Ti-15Mo single crystals and their evolution with thermal treatment. <i>MATEC Web of Conferences</i> , 2020, 321, 12012.	0.2	1
29	Multifunctional 3D-Printed Cellular MAX-Phase Architectures. <i>Advanced Materials Technologies</i> , 2019, 4, 1900375.	5.8	10
30	Crack growth in Fe-Si (2 wt%) single crystals on macroscopic and atomistic level. <i>Results in Physics</i> , 2019, 14, 102450.	4.1	9
31	Sub-surface measurements of the austenite microstructure in response to martensitic phase transformation. <i>Acta Materialia</i> , 2019, 179, 273-286.	7.9	23
32	Beyond the strain recoverability of martensitic transformation in NiTi. <i>International Journal of Plasticity</i> , 2019, 116, 232-264.	8.8	89
33	Non-conventional twins in five-layer modulated Ni-Mn-Ga martensite. <i>Scripta Materialia</i> , 2019, 162, 497-502.	5.2	11
34	Elastic constants of β -Ti15Mo. <i>Journal of Alloys and Compounds</i> , 2019, 792, 960-967.	5.5	20
35	2019, 171, 107703.	7.0	37
36	Transformation Pathway upon Heating of Metastable β Titanium Alloy Ti-15Mo Investigated by Neutron Diffraction. <i>Materials</i> , 2019, 12, 3570.	2.9	11

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37	B2 ϵ - α' - β 19 α' - β 2T Martensitic Transformation as a Mechanism of Plastic Deformation of NiTi ₂ Shape Memory and Superelasticity, 2019, 5, 383-396.	2.2	14
38	Elasticity and internal friction of magnesium alloys at room and elevated temperatures. Journal of Materials Science, 2018, 53, 8545-8553.	3.7	9
39	Temperature dependence of elastic properties in austenite and martensite of Ni-Mn-Ga epitaxial films. Acta Materialia, 2018, 145, 298-305.	7.9	37
40	Ultrasonic bandgaps in 3D-printed periodic ceramic microlattices. Ultrasonics, 2018, 82, 91-100.	3.9	27
41	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
42	Structural characterization of semi-heusler/light metal composites prepared by spark plasma sintering. Scientific Reports, 2018, 8, 11133.	3.3	3
43	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
44	On the plastic deformation accompanying cyclic martensitic transformation in thermomechanically loaded NiTi. International Journal of Plasticity, 2018, 111, 53-71.	8.8	75
45	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
46	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
47	Evolution of Elastic Properties of Cold Sprayed Metal Coatings at Elevated Temperatures. Acta Physica Polonica A, 2018, 134, 794-798.	0.5	6
48	Anisotropic Elasticity of Ceramic Micro-Scaffolds Fabricated by Robocasting. Acta Physica Polonica A, 2018, 134, 799-803.	0.5	2
49	Ab Initio&/em> Study of Martensitic Transition in Ni ₂ MnGa. Acta Physica Polonica A, 2018, 134, 804-806.	0.5	9
50	Non-Contact Characterization of Acoustoelastic Parameters of Advanced Materials by Laser-Ultrasound. Acta Physica Polonica A, 2018, 134, 807-810.	0.5	1
51	In Situ&/em> 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
52	Modeling of the Formation of Stress-Induced β' Phase in Metastable β_2 Titanium Alloys. Acta Physica Polonica A, 2018, 134, 769-773.	0.5	0
53	Elastic constants of non-modulated Ni-Mn-Ga martensite. Scripta Materialia, 2017, 136, 20-23.	5.2	18
54	Nucleation and growth of hierarchical martensite in epitaxial shape memory films. Acta Materialia, 2017, 132, 327-334.	7.9	46

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55	Mechanical and magnetic properties of semi-Heusler/light-metal composites consolidated by spark plasma sintering. <i>Materials and Design</i> , 2017, 126, 351-357.	7.0	6
56	Orthorhombic intermediate phase originating from {110} nanotwinning in Ni _{50.0} Mn _{28.7} Ga _{21.3} modulated martensite. <i>Acta Materialia</i> , 2017, 132, 335-344.	7.9	16
57	Temperature dependence of twinning stress – Analogy between Cu–Ni–Al and Ni–Mn–Ga shape memory single crystals. <i>Philosophical Magazine</i> , 2017, 97, 1479-1497.	1.6	11
58	Microhardness and microstructure evolution of ultra-fine grained Ti-15Mo and TIMETAL LCB alloys prepared by high pressure torsion. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 682, 220-228.	5.6	26
59	Evolution of macroscopic elastic moduli of martensitic polycrystalline NiTi and NiTiCu shape memory alloys with pseudoplastic straining. <i>Acta Materialia</i> , 2017, 123, 146-156.	7.9	46
60	Ceramic phononic crystals with MHz-range frequency band gaps. <i>Proceedings of Meetings on Acoustics</i> , 2017, , .	0.3	2
61	Application of Laser-Ultrasound for Characterization of Plasma-Sprayed Ceramics. <i>Defect and Diffusion Forum</i> , 2016, 368, 69-72.	0.4	0
62	<i>In situ</i> characterization of local elastic properties of thin shape memory films by surface acoustic waves. <i>Smart Materials and Structures</i> , 2016, 25, 127002.	3.5	17
63	Elastic moduli and elastic anisotropy of cold sprayed metallic coatings. <i>Surface and Coatings Technology</i> , 2016, 291, 342-347.	4.8	30
64	The effect of athermal and isothermal β phase particles on elasticity of β -Ti single crystals. <i>Acta Materialia</i> , 2016, 110, 185-191.	7.9	46
65	Evolution of soft-phonon modes in Fe–Pd shape memory alloy under large elastic-like strains. <i>Acta Materialia</i> , 2016, 105, 182-188.	7.9	19
66	The relation between lattice parameters and very low twinning stress in Ni ₅₀ Mn ₂₅ Ga ₂₅ magnetic shape memory alloys. <i>Smart Materials and Structures</i> , 2016, 25, 025001.	3.5	23
67	Magnetic domains and twin microstructure of single crystal Ni-Mn-Ga exhibiting magnetic shape memory effect. , 2015, , .		0
68	Incommensuratness in nanotwinning models of modulated martensites. <i>Physical Review B</i> , 2015, 92, .	3.2	9
69	Highly mobile interfaces in shape memory alloys. <i>MATEC Web of Conferences</i> , 2015, 33, 01002.	0.2	0
70	The effects of microstructure on crackling noise during martensitic transformation in Cu-Al-Ni. <i>Applied Physics Letters</i> , 2015, 107, 171601.	3.3	11
71	Elastic constants of nanoporous III-V semiconductors. <i>Journal Physics D: Applied Physics</i> , 2015, 48, 245102.	2.8	5
72	Mobile Interfacial Microstructures in Single Crystals of Cu–Al–Ni Shape Memory Alloy. <i>Shape Memory and Superelasticity</i> , 2015, 1, 268-274.	2.2	15

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73	Magnetic Domains and Twin Microstructure of Single Crystal Ni ₂ MnGa Exhibiting Magnetic Shape Memory Effect. IEEE Transactions on Magnetics, 2015, 51, 1-4.	2.1	11
74	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
75	Young'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
76	An ultrasonic internal friction study of ultrafine-grained AZ31 magnesium alloy. Journal of Materials Science, 2015, 50, 808-818.	3.7	13
77	Elastic properties of silicon nitride ceramics reinforced with graphene nanofillers. Materials and Design, 2015, 87, 675-680.	7.0	37
78	Forward and inverse problems for surface acoustic waves in anisotropic media: A Ritz-Rayleigh method based approach. Ultrasonics, 2015, 56, 381-389.	3.9	21
79	Ultrasonic detection of ductile-to-brittle transitions in free-cutting aluminum alloys. NDT and E International, 2015, 69, 40-47.	3.7	6
80	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
81	Acoustic metamaterial behavior of three-dimensional periodic architectures assembled by robocasting. Applied Physics Letters, 2014, 105, 211904.	3.3	14
82	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
83	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
84	Elasticity and magnetism of Ni ₂ MnGa premartensitic tweed. Physica Status Solidi (B): Basic Research, 2014, 251, 2097-2103.	1.5	24
85	A microstructural model of motion of macro-twin interfaces in Ni ₂ MnGa 10M martensite. Journal of the Mechanics and Physics of Solids, 2014, 64, 198-211.	4.8	88
86	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
87	Differently mobile twin boundaries and magnetic shape memory effect in 10M martensite of Ni ₂ MnGa. Materials Research Bulletin, 2013, 48, 5105-5109.	5.2	19
88	Anisotropic elastic moduli and internal friction of graphene nanoplatelets/silicon nitride composites. Composites Science and Technology, 2013, 75, 93-97.	7.8	40
89	Different microstructures of mobile twin boundaries in 10 M modulated Ni ₂ MnGa martensite. Acta Materialia, 2013, 61, 622-631.	7.9	81
90	Phase stabilization in plasma sprayed BaTiO ₃ . Ceramics International, 2013, 39, 5039-5048.	4.8	20

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91	Nucleation of austenite in mechanically stabilized martensite by localized heating. Journal of Alloys and Compounds, 2013, 577, S37-S42.	5.5	24
92	Microstructure, martensitic transformation and anomalies in ϵ -softening in Co-Ni-Al ferromagnetic shape memory alloys. Acta Materialia, 2013, 61, 5869-5876.	7.9	26
93	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
94	Resonant ultrasound spectroscopy – a tool to probe magneto-elastic properties of ferromagnetic shape memory alloys. European Physical Journal B, 2013, 86, 1.	1.5	13
95	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
96	The effect of antiphase boundaries on the elastic properties of Ni-Mn-Ga austenite and premartensite. Journal of Physics Condensed Matter, 2013, 25, 425402.	1.8	25
97	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
98	Anomalous lattice softening of Ni ₂ MnGa austenite due to magnetoelastic coupling. Journal of Applied Physics, 2012, 111, .	2.5	20
99	Anisotropic elasticity of DyScO ₃ substrates. Journal of Physics Condensed Matter, 2012, 24, 385404.	1.8	16
100	Temperature dependence of twinning stress of Type I and Type II twins in 10M modulated Ni-Mn-Ga martensite. Scripta Materialia, 2012, 67, 25-28.	5.2	84
101	Determination of elastic properties of surface layers and coatings by resonant ultrasound spectroscopy. Journal of Physics: Conference Series, 2011, 278, 012004.	0.4	0
102	Thermomechanical properties of single crystals evaluated by impulsive stimulated thermal scattering technique. Journal of Physics: Conference Series, 2011, 278, 012023.	0.4	2
103	Highly mobile twinned interface in 10M modulated Ni-Mn-Ga martensite: Analysis beyond the tetragonal approximation of lattice. Acta Materialia, 2011, 59, 7450-7463.	7.9	183
104	A finite element analysis of the morphology of the twinned-to-detwinned interface observed in microstructure of the Cu-Al-Ni shape memory alloy. International Journal of Solids and Structures, 2011, 48, 2005-2014.	2.7	16
105	Novel approach to material evaluation of thin surface layers by resonant ultrasound spectroscopy. Journal of Physics: Conference Series, 2010, 214, 012045.	0.4	0
106	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
107	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
108	Modal resonant ultrasound spectroscopy for ferroelastics. Applied Physics A: Materials Science and Processing, 2009, 96, 557-567.	2.3	55

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109	Magneto-elastic attenuation in austenitic phase of Ni-Mn-Ga alloy investigated by ultrasonic methods. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2009, 521-522, 205-208.	5.6	15
110	Non-classical austenite-martensite interfaces observed in single crystals of Cu-Al-Ni. <i>Phase Transitions</i> , 2009, 82, 793-807.	1.3	19
111	FEM Modelling of Elastically Strained Interfacial Microstructures in Cu-Al-Ni Single Crystals. , 2009, , .		2
112	Interfacial Microstructures in Martensitic Transitions: From Optical Observations to Mathematical Modeling. <i>International Journal for Multiscale Computational Engineering</i> , 2009, 7, 445-456.	1.2	15
113	Resonant ultrasound spectroscopy for investigation of thin surface coatings. <i>WIT Transactions on Engineering Sciences</i> , 2009, , .	0.0	2
114	On the evaluation of temperature dependence of elastic constants of martensitic phases in shape memory alloys from resonant ultrasound spectroscopy studies. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008, 481-482, 567-573.	5.6	9
115	Shape recovery mechanism observed in single crystals of Cu-Al-Ni shape memory alloy. <i>Phase Transitions</i> , 2008, 81, 537-551.	1.3	24
116	Temperature dependence of elastic properties of cubic and orthorhombic phases in Cu-Al-Ni shape memory alloy near their stability limits. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007, 462, 320-324.	5.6	19
117	Propagation of an austenite-martensite interface in a thermal gradient; 218-225. <i>Proceedings of the Estonian Academy of Sciences: Physics, Mathematics</i> , 2007, 56, 218.	0.3	4
118	Application of Simplified Ray Method for the Determination of the Cortical Bone Elastic Coefficients by the Ultrasonic Wave Inversion. , 2007, , 304-307.		0
119	Determination of elastic coefficients of bone and composite materials by acoustic immersion technique. <i>Technology and Health Care</i> , 2006, 14, 219-232.	1.2	2
120	Differential geometry of ray surfaces in anisotropic solids and its contribution to NDE: Modelling and experiment. <i>Ultrasonics</i> , 2006, 44, e801-e806.	3.9	0
121	PS-17 Improvement of the Inversion Procedure in Resonant Ultrasound Spectroscopy for Generally Oriented, High Anisotropic Crystals. , 2006, , .		0
122	Elastic constants of bcc austenite and 2H orthorhombic martensite in CuAlNi shape memory alloy. <i>Acta Materialia</i> , 2005, 53, 3643-3661.	7.9	108
123	Sensitivity analysis of an inverse procedure for determination of elastic coefficients for strong anisotropy. <i>Ultrasonics</i> , 2005, 43, 253-263.	3.9	5
124	<i>In Situ </i> Experimental Methods for Characterization of Deformation Processes in SMAs. <i>Advances in Science and Technology</i> , 0, , .	0.2	1
125	<i>In Situ </i> Detection of Surface Micro-Cracking in Ultrafine-Grained AZ31 Magnesium Alloy by Resonant Ultrasound Spectroscopy. <i>Key Engineering Materials</i> , 0, 606, 87-90.	0.4	1
126	Detection of Phase Transition in Free-Cutting Al-Mg-Si Alloys by Resonant Ultrasound Spectroscopy. <i>Materials Science Forum</i> , 0, 794-796, 21-26.	0.3	1

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127	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
128	Architected Multi-Metallic Structures Prepared by Cold Dynamic Spray Deposition. Key Engineering Materials, 0, 810, 107-112.	0.4	2
129	An Analysis of Non-Classical Austenite-Martensite Interfaces in CuAlNi. , 0, , 383-390.		2