

Markus Chmielus

List of Publications by Year in descending order

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68
papers

2,937
citations

201575

27
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175177

52
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70
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70
docs citations

70
times ranked

2070
citing authors

#	ARTICLE	IF	CITATIONS
1	Binder jet 3D printing—Process parameters, materials, properties, modeling, and challenges. <i>Progress in Materials Science</i> , 2021, 119, 100707.	16.0	412
2	Giant magnetic-field-induced strains in polycrystalline Ni–Mn–Ga foams. <i>Nature Materials</i> , 2009, 8, 863-866.	13.3	332
3	Efficient Design-Optimization of Variable-Density Hexagonal Cellular Structure by Additive Manufacturing: Theory and Validation. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2015, 137, .	1.3	170
4	Effect of powder size distribution on densification and microstructural evolution of binder-jet 3D-printed alloy 625. <i>Materials and Design</i> , 2019, 162, 375-383.	3.3	134
5	Powder bed binder jet printed alloy 625: Densification, microstructure and mechanical properties. <i>Materials and Design</i> , 2016, 108, 126-135.	3.3	130
6	Microstructural evolution and mechanical properties of differently heat-treated binder jet printed samples from gas- and water-atomized alloy 625 powders. <i>Acta Materialia</i> , 2017, 124, 280-289.	3.8	125
7	A comparative study of oxide scales grown on stainless steel and nickel-based superalloys in ultra-high temperature supercritical water at 800 Å°C. <i>Corrosion Science</i> , 2016, 106, 188-207.	3.0	121
8	Microstructural evolution and magnetic properties of binder jet additive manufactured Ni-Mn-Ga magnetic shape memory alloy foam. <i>Acta Materialia</i> , 2017, 131, 482-490.	3.8	102
9	Variation of hardness, microstructure, and Laves phase distribution in direct laser deposited alloy 718 cuboids. <i>Materials and Design</i> , 2017, 119, 188-198.	3.3	92
10	Increasing Magnetoplasticity in Polycrystalline Ni-Mn-Ga by Reducing Internal Constraints through Porosity. <i>Physical Review Letters</i> , 2007, 99, 247201.	2.9	88
11	Sintering regimes and resulting microstructure and properties of binder jet 3D printed Ni-Mn-Ga magnetic shape memory alloys. <i>Acta Materialia</i> , 2018, 154, 355-364.	3.8	75
12	Effect of solutionizing and aging on the microstructure and mechanical properties of powder bed binder jet printed nickel-based superalloy 625. <i>Materials and Design</i> , 2016, 111, 482-491.	3.3	69
13	Training, constraints, and high-cycle magneto-mechanical properties of Ni-Mn-Ga magnetic shape-memory alloys. <i>European Physical Journal: Special Topics</i> , 2008, 158, 79-85.	1.2	67
14	Effects of surface roughness and training on the twinning stress of Ni–Mn–Ga single crystals. <i>Acta Materialia</i> , 2010, 58, 3952-3962.	3.8	52
15	Binder jetting of a complex-shaped metal partial denture framework. <i>Additive Manufacturing</i> , 2018, 21, 63-68.	1.7	47
16	A comparative study on the oxidation of austenitic alloys 304 and 304-oxide dispersion strengthened steel in supercritical water at 650 Å°C. <i>Journal of Supercritical Fluids</i> , 2017, 119, 245-260.	1.6	43
17	Effects of surface damage on twinning stress and the stability of twin microstructures of magnetic shape memory alloys. <i>Acta Materialia</i> , 2011, 59, 2948-2956.	3.8	41
18	Corrosion behavior of alloy 316L stainless steel after exposure to supercritical water at 500 Å°C for 20,000 h. <i>Journal of Supercritical Fluids</i> , 2017, 127, 191-199.	1.6	40

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19	Density variation in binder jetting 3D-printed and sintered Ti-6Al-4V. Additive Manufacturing, 2018, 22, 746-752.	1.7	38
20	Characterizing surface finish and fatigue behavior in binder-jet 3D-printed nickel-based superalloy 625. Additive Manufacturing, 2018, 24, 200-209.	1.7	37
21	Properties of as-deposited and heat-treated Ni-Mn-Ga magnetic shape memory alloy processed by directed energy deposition. Journal of Alloys and Compounds, 2018, 752, 455-463.	2.8	36
22	Internal oxidation and crack susceptibility of alloy 310S stainless steel after long term exposure to supercritical water at 500°C. Journal of Supercritical Fluids, 2017, 120, 161-172.	1.6	34
23	Effect of sputter pressure on Ta thin films: Beta phase formation, texture, and stresses. Acta Materialia, 2018, 150, 317-326.	3.8	32
24	Characterization of oxide scales grown on alloy 310S stainless steel after long term exposure to supercritical water at 500 °C. Materials Characterization, 2016, 120, 273-284.	1.9	31
25	Comparison of characterization methods for differently atomized nickel-based alloy 625 powders. Powder Technology, 2018, 333, 180-192.	2.1	31
26	Microstructural evolution and resulting properties of differently sintered and heat-treated binder-jet 3D-printed Stellite 6. Materials Science and Engineering C, 2019, 102, 276-288.	3.8	31
27	An analytical model of the melt pool and single track in coaxial laser direct metal deposition (LDMD) additive manufacturing. Journal of Micromechanics and Molecular Physics, 2017, 02, 1750013.	0.7	30
28	Effect of porosity on the magneto-mechanical behavior of polycrystalline magnetic shape-memory Ni-Mn-Ga foams. Acta Materialia, 2015, 92, 64-71.	3.8	29
29	Growth mechanism and charge transport properties of hybrid Au/ZnO nanoprisms. Journal of Alloys and Compounds, 2019, 777, 1386-1395.	2.8	27
30	Data on the densification during sintering of binder jet printed samples made from water- and gas-atomized alloy 625 powders. Data in Brief, 2017, 10, 116-121.	0.5	26
31	Highly porous, flexible and robust cellulose acetate/Au/ZnO as a hybrid photocatalyst. Applied Surface Science, 2020, 526, 146237.	3.1	26
32	Influence of constraints and twinning stress on magnetic field-induced strain of magnetic shape-memory alloys. Scripta Materialia, 2011, 64, 888-891.	2.6	25
33	Magnetic-field-induced recovery strain in polycrystalline Ni-Mn-Ga foam. Journal of Applied Physics, 2010, 108, .	1.1	24
34	Texture and training of magnetic shape memory foam. Acta Materialia, 2013, 61, 2113-2120.	3.8	20
35	Driving forces for texture transformation in thin Ag films. Acta Materialia, 2016, 105, 495-504.	3.8	20
36	Influence of powder type and binder saturation on binder jet 3D-printed and sintered Inconel 625 samples. International Journal of Advanced Manufacturing Technology, 2021, 116, 3827-3838.	1.5	19

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37	Double twinning in Ni-Mn-Ga-Co. Acta Materialia, 2010, 58, 2646-2651.	3.8	18
38	Effect of sputter pressure on microstructure and properties of $\text{Ti}_2\text{-Ta}$ thin films. Acta Materialia, 2020, 183, 504-513.	3.8	17
39	Characterization of oxide layer and micro-crack initiation in alloy 316L stainless steel after 20,000 h exposure to supercritical water at 500 $^{\circ}\text{C}$. Materials Characterization, 2017, 131, 532-543.	1.9	16
40	Magnetic, mechanical and fatigue properties of a Ni _{45.4} Mn _{29.1} Ga _{21.6} Fe _{3.9} single crystal. Scripta Materialia, 2010, 62, 875-878.	2.6	15
41	Effect of heat treatment on microstructural evolution and hardness homogeneity in laser powder bed fusion of alloy 718. Additive Manufacturing, 2020, 35, 101282.	1.7	15
42	Stabilizing a fine twin structure in Ni-Mn-Ga samples by coatings and ion implantation. Scripta Materialia, 2015, 94, 40-43.	2.6	14
43	Binder Jet 3D Printing of 316L Stainless Steel: Effects of HIP on Fatigue. Microscopy and Microanalysis, 2019, 25, 2600-2601.	0.2	14
44	Direct Laser Deposition and Homogenization of Ni-Co-Mn-Sn Magnetocaloric Material. Microscopy and Microanalysis, 2018, 24, 956-957.	0.2	13
45	Properties of Co-alloyed Ni-Fe-Ga Ferromagnetic Shape Memory Alloys. Journal of Materials Engineering and Performance, 2009, 18, 548-553.	1.2	12
46	Microstructural Evaluation of Magnetocaloric Ni-Co-Mn-Sn Produced by Directed Energy Deposition. Microscopy and Microanalysis, 2016, 22, 1774-1775.	0.2	12
47	Effects of Surface Pinning, Locking and Adaption of Twins on the Performance of Magnetic Shape-Memory Alloys. Materials Science Forum, 0, 684, 177-201.	0.3	11
48	Key Properties of Ni ₅₁ Mn ₄₉ Ga Based Single Crystals Grown with the SLARE Technique. Advanced Engineering Materials, 2012, 14, 614-635.	1.6	11
49	Brief data overview of differently heat treated binder jet printed samples made from argon atomized alloy 625 powder. Data in Brief, 2016, 9, 556-562.	0.5	11
50	Effect of Homogenization on the Microstructure and Magnetic Properties of Direct Laser-Deposited Magnetocaloric Ni ₄₃ Co ₇ Mn ₃₉ Sn ₁₁ . Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2020, 142, .	1.3	9
51	Additive Manufacturing of Ni-Mn-Cu-Ga: Influence of Sintering Temperature on Magnetocaloric Effect and Microstructure. Microscopy and Microanalysis, 2019, 25, 2578-2579.	0.2	7
52	Effect of binder saturation and drying time on microstructure and resulting properties of sinter-HIP binder-jet 3D-printed WC-Co composites. Additive Manufacturing, 2021, 46, 102128.	1.7	7
53	Mastering a 1.2 $^{\circ}\text{K}$ hysteresis for martensitic para-ferromagnetic partial transformation in Ni-Mn(Cu)-Ga magnetocaloric material via binder jet 3D printing. Additive Manufacturing, 2021, 37, 101560.	1.7	6
54	Multi-Material Binder Jet Printing of Functional Ni-Mn-Ga Alloys. Microscopy and Microanalysis, 2020, 26, 2942-2944.	0.2	5

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55	Characterization of as-built and heat-treated Ni-Mn-Ga magnetic shape memory alloy manufactured via laser powder bed fusion. Additive Manufacturing, 2021, 39, 101854.	1.7	5
56	Recent Developments in Ni-Mn-Ga Foam Research. Materials Science Forum, 0, 635, 119-124.	0.3	4
57	Epitaxial re-solidification of laser-melted Ni-Mn-Ga single crystal. Acta Materialia, 2021, 219, 117236.	3.8	3
58	Characterizing Changes in Grain Growth, Mechanical Properties, and Transformation Properties in Differently Sintered and Annealed Binder-Jet 3D Printed 14M Ni-Mn-Ga Magnetic Shape Memory Alloys. Metals, 2022, 12, 724.	1.0	3
59	Modeling magnetoelasticity and magnetoplasticity with disconnections and disclinations. Materials Research Society Symposia Proceedings, 2007, 1050, 1.	0.1	2
60	Application of Ferromagnetic Shape Memory Alloys in Power Generation Devices. , 2013, , 365-369.		2
61	Using Microscopy and Image Analysis to Show Density and Property Variations in Additive Manufactured Ti-6Al-4V. Microscopy and Microanalysis, 2019, 25, 2590-2591.	0.2	2
62	Binder Jet-Metals. , 2022, , 120-133.		2
63	Numerical Simulation of Twin-Twin Interaction in Magnetic Shape-Memory Alloys. Materials Research Society Symposia Proceedings, 2008, 1090, 52601.	0.1	1
64	Grain Growth, Porosity, and Hardness Changes in Sintered and Annealed Binder-jet 3D Printed Ni-Mn-Ga Magnetic Shape Memory Alloys. Microscopy and Microanalysis, 2020, 26, 3082-3085.	0.2	1
65	Microstructure evolution for isothermal sintering of binder jet 3D printed alloy 625 above and below the solidus temperature. Additive Manufacturing, 2021, , 102276.	1.7	1
66	Magneto-Mechanical Properties and Fracture of a Mechanically Constrained Ni-Mn-Ga Single Crystal after Extended Magnetic Cycling. , 0, , 683-688.		1
67	Additive Manufacturing from the Point of View of Materials Research. , 2020, , 43-83.		1
68	Using Micro-Computed Tomography to Investigate Powder Distribution Trends Within 3D Binder-Jet Printed SS316 Parts. Microscopy and Microanalysis, 2018, 24, 1004-1005.	0.2	0