

Qingping Sun

List of Publications by Year in descending order

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93
papers

3,915
citations

126907

33
h-index

128289

60
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95
all docs

95
docs citations

95
times ranked

1604
citing authors

#	ARTICLE	IF	CITATIONS
1	Stress hysteresis and temperature dependence of phase transition stress in nanostructured NiTi—Effects of grain size. <i>Applied Physics Letters</i> , 2013, 103, 021902.	3.3	200
2	Phase transformation in superelastic NiTi polycrystalline micro-tubes under tension and torsion—from localization to homogeneous deformation. <i>International Journal of Solids and Structures</i> , 2002, 39, 3797-3809.	2.7	199
3	Effects of grain size on the rate-dependent thermomechanical responses of nanostructured superelastic NiTi. <i>Acta Materialia</i> , 2014, 76, 186-197.	7.9	189
4	Stress-induced nanoscale phase transition in superelastic NiTi by in situ X-ray diffraction. <i>Acta Materialia</i> , 2015, 90, 272-281.	7.9	177
5	Experimental study on rate dependence of macroscopic domain and stress hysteresis in NiTi shape memory alloy strips. <i>International Journal of Mechanical Sciences</i> , 2010, 52, 1660-1670.	6.7	166
6	The initiation and growth of macroscopic martensite band in nano-grained NiTi microtube under tension. <i>International Journal of Plasticity</i> , 2002, 18, 1481-1498.	8.8	146
7	Effect of deformation frequency on temperature and stress oscillations in cyclic phase transition of NiTi shape memory alloy. <i>Journal of the Mechanics and Physics of Solids</i> , 2014, 67, 100-128.	4.8	139
8	Rate-dependent domain spacing in a stretched NiTi strip. <i>International Journal of Solids and Structures</i> , 2010, 47, 2775-2783.	2.7	118
9	Experimental investigation on macroscopic domain formation and evolution in polycrystalline NiTi microtubing under mechanical force. <i>Journal of the Mechanics and Physics of Solids</i> , 2006, 54, 1568-1603.	4.8	117
10	Nanocomposite NiTi shape memory alloy with high strength and fatigue resistance. <i>Nature Nanotechnology</i> , 2021, 16, 409-413.	31.5	113
11	Oliver—Pharr indentation method in determining elastic moduli of shape memory alloys—A phase transformable material. <i>Journal of the Mechanics and Physics of Solids</i> , 2013, 61, 2015-2033.	4.8	108
12	Effects of grain size on tensile fatigue life of nanostructured NiTi shape memory alloy. <i>International Journal of Fatigue</i> , 2016, 88, 166-177.	5.7	107
13	Anomalous relationship between hardness and wear properties of a superelastic nickel—titanium alloy. <i>Applied Physics Letters</i> , 2004, 84, 1076-1078.	3.3	97
14	Effects of grain size on phase transition behavior of nanocrystalline shape memory alloys. <i>Science China Technological Sciences</i> , 2014, 57, 671-679.	4.0	97
15	On non-monotonic rate dependence of stress hysteresis of superelastic shape memory alloy bars. <i>International Journal of Solids and Structures</i> , 2011, 48, 1688-1695.	2.7	81
16	High fatigue life and cooling efficiency of NiTi shape memory alloy under cyclic compression. <i>Scripta Materialia</i> , 2019, 159, 62-67.	5.2	79
17	Ambient effect on damping peak of NiTi shape memory alloy. <i>Materials Letters</i> , 2010, 64, 1483-1486.	2.6	78
18	Analysis of spherical indentation of superelastic shape memory alloys. <i>International Journal of Solids and Structures</i> , 2007, 44, 1-17.	2.7	72

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19	Macroscopic equilibrium domain structure and geometric compatibility in elastic phase transition of thin plates. <i>International Journal of Mechanical Sciences</i> , 2010, 52, 198-211.	6.7	70
20	Grain size dependence of fracture toughness and crack-growth resistance of superelastic NiTi. <i>Scripta Materialia</i> , 2016, 113, 171-175.	5.2	68
21	Cyclic phase transformation behavior of nanocrystalline NiTi at microscale. <i>Acta Materialia</i> , 2020, 185, 507-517.	7.9	67
22	Ultra-high fatigue life of NiTi cylinders for compression-based elastocaloric cooling. <i>Applied Physics Letters</i> , 2019, 115, .	3.3	65
23	Shakedown analysis of shape memory alloy structures. <i>International Journal of Plasticity</i> , 2007, 23, 183-206.	8.8	57
24	Effects of structural and material length scales on stress-induced martensite macro-domain patterns in tube configurations. <i>International Journal of Solids and Structures</i> , 2009, 46, 3045-3060.	2.7	57
25	Reversible elastocaloric effect at ultra-low temperatures in nanocrystalline shape memory alloys. <i>Acta Materialia</i> , 2019, 165, 109-117.	7.9	57
26	Role of phase transition in the unusual microwear behavior of superelastic NiTi shape memory alloy. <i>Wear</i> , 2006, 260, 509-522.	3.1	54
27	Effects of grain size on fatigue crack growth behaviors of nanocrystalline superelastic NiTi shape memory alloys. <i>Acta Materialia</i> , 2020, 195, 141-150.	7.9	52
28	Nanoscale phase transition behavior of shape memory alloys – closed form solution of 1D effective modelling. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 110, 21-37.	4.8	50
29	Grain size dependence of Young's modulus and hardness for nanocrystalline NiTi shape memory alloy. <i>Materials Letters</i> , 2018, 211, 352-355.	2.6	47
30	Probing phenotypic growth in expanding <i>Bacillus subtilis</i> biofilms. <i>Applied Microbiology and Biotechnology</i> , 2016, 100, 4607-4615.	3.6	40
31	Reducing functional fatigue, transition stress and hysteresis of NiTi micropillars by one-step overstressed plastic deformation. <i>Scripta Materialia</i> , 2021, 201, 113958.	5.2	40
32	Rate dependent damping of single crystal CuAlNi shape memory alloy. <i>Materials Letters</i> , 2013, 109, 287-290.	2.6	37
33	Grain size-dependent energy partition in phase transition of NiTi shape memory alloys studied by molecular dynamics simulation. <i>International Journal of Solids and Structures</i> , 2021, 221, 31-41.	2.7	37
34	Enhancing cooling performance of NiTi elastocaloric tube refrigerant via internal grooving. <i>Applied Thermal Engineering</i> , 2022, 213, 118657.	6.0	37
35	Grain refinement and amorphization in nanocrystalline NiTi micropillars under uniaxial compression. <i>Scripta Materialia</i> , 2018, 154, 123-126.	5.2	34
36	Modeling the martensite reorientation and resulting zero/negative thermal expansion of shape memory alloys. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 127, 295-331.	4.8	34

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37	The role of phase transition in the fretting behavior of NiTi shape memory alloy. <i>Wear</i> , 2005, 259, 309-318.	3.1	33
38	Depth dependency of indentation hardness during solid-state phase transition of shape memory alloys. <i>Applied Physics Letters</i> , 2011, 99, .	3.3	33
39	Loading rate dependency of maximum nanoindentation depth in nano-grained NiTi shape memory alloy. <i>Materials Letters</i> , 2011, 65, 464-466.	2.6	32
40	Temperature Variation in NiTi Shape Memory Alloy During Cyclic Phase Transition. <i>Journal of Materials Engineering and Performance</i> , 2012, 21, 2505-2508.	2.5	31
41	Effects of grain size and partial amorphization on elastocaloric cooling performance of nanostructured NiTi. <i>Scripta Materialia</i> , 2022, 209, 114371.	5.2	30
42	Spherical indentation hardness of shape memory alloys. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2006, 425, 278-285.	5.6	29
43	Determination of transformation stresses of shape memory alloy thin films: A method based on spherical indentation. <i>Applied Physics Letters</i> , 2006, 88, 241912.	3.3	25
44	Effects of grain size on compressive behavior of NiTi polycrystalline superelastic macro- and micropillars. <i>Materials Letters</i> , 2018, 214, 53-55.	2.6	24
45	Elinvar property of cold-rolled NiTi alloy. <i>Scripta Materialia</i> , 2020, 187, 197-201.	5.2	23
46	Deformation behaviors of gradient nanostructured superelastic NiTi shape memory alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 786, 139389.	5.6	23
47	In-plane low thermal expansion of NiTi via controlled cross rolling. <i>Acta Materialia</i> , 2021, 204, 116506.	7.9	22
48	Experimental Study of Stress-Induced Localized Transformation Plastic Zones in Tetragonal Zirconia Polycrystalline Ceramics. <i>Journal of the American Ceramic Society</i> , 1994, 77, 1352-1356.	3.8	21
49	A compact NiTi elastocaloric air cooler with low force bending actuation. <i>Applied Thermal Engineering</i> , 2022, 215, 118942.	6.0	21
50	Wearless scratch on NiTi shape memory alloy due to phase transformational shakedown. <i>Applied Physics Letters</i> , 2008, 92, 121909.	3.3	19
51	Nonlocal modeling and analysis of spatiotemporal patterns in non-isothermal phase transformation of NiTi strips. <i>International Journal of Solids and Structures</i> , 2021, 221, 103-116.	2.7	19
52	Nanofretting behaviors of NiTi shape memory alloy. <i>Wear</i> , 2007, 263, 501-507.	3.1	18
53	Enhance Fatigue Resistance of Nanocrystalline NiTi by Laser Shock Peening. <i>Shape Memory and Superelasticity</i> , 2019, 5, 436-443.	2.2	18
54	Thermomechanical coupling in cyclic phase transition of shape memory material under periodic stressing“experiment and modeling. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 149, 104199.	4.8	18

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55	Determination of plastic yield stress from spherical indentation slope curve. <i>Materials Letters</i> , 2008, 62, 2260-2262.	2.6	17
56	On interfacial energy of macroscopic domains in polycrystalline NiTi shape memory alloys. <i>International Journal of Solids and Structures</i> , 2016, 80, 445-455.	2.7	17
57	Thermomechanical responses of nonlinear torsional vibration with NiTi shape memory alloy “ Alternative stable states and their jumps. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 102, 257-276.	4.8	16
58	Multifunctional nanostructured NiTi alloy with Invar, Elinvar and Rinvar properties. <i>Journal of Alloys and Compounds</i> , 2022, 909, 164682.	5.5	15
59	On anomalous depth-dependency of the hardness of NiTi shape memory alloys in spherical nanoindentation. <i>Journal of Materials Research</i> , 2013, 28, 2031-2039.	2.6	14
60	Jump phenomena of rotational angle and temperature of NiTi wire in nonlinear torsional vibration. <i>International Journal of Solids and Structures</i> , 2015, 56-57, 220-234.	2.7	14
61	Ultrahigh cycle fatigue deformation of polycrystalline NiTi micropillars. <i>Scripta Materialia</i> , 2021, 203, 114108.	5.2	14
62	Critical thickness for dislocation generation in epitaxial piezoelectric thin films. <i>Philosophical Magazine</i> , 2003, 83, 3753-3764.	1.6	13
63	Oxidized nitinol substrate for interference enhanced Raman scattering of monolayer graphene. <i>RSC Advances</i> , 2016, 6, 7093-7100.	3.6	13
64	A dual-pillar method for measurement of stress-strain response of material at microscale. <i>Scripta Materialia</i> , 2019, 172, 138-143.	5.2	13
65	Ultrahigh cycle fatigue of nanocrystalline NiTi tubes for elastocaloric cooling. <i>Applied Materials Today</i> , 2022, 26, 101377.	4.3	13
66	Tailoring thermal expansion of shape memory alloys through designed reorientation deformation. <i>Acta Materialia</i> , 2021, 218, 117201.	7.9	12
67	On equilibrium domains in superelastic NiTi tubes “ helix versus cylinder. <i>International Journal of Solids and Structures</i> , 2012, 49, 1063-1076.	2.7	11
68	Superelastic oxide micropillars enabled by surface tension“modulated 90° domain switching with excellent fatigue resistance. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	11
69	Characteristic of microscopic shape memory effect in a CuAlNi alloy by nanoindentation. <i>Journal of Materials Science</i> , 2005, 40, 1501-1504.	3.7	10
70	Phase transition induced interfacial debonding in shape memory alloy fiber“matrix system. <i>International Journal of Solids and Structures</i> , 2015, 75-76, 199-210.	2.7	8
71	Grain size effects on stability of nonlinear vibration with nanocrystalline NiTi shape memory alloy. <i>Smart Materials and Structures</i> , 2017, 26, 105033.	3.5	8
72	Non-monotonic grain size dependence of phase transformation behavior in NiTi microscale samples. <i>Scripta Materialia</i> , 2019, 165, 50-54.	5.2	7

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73	A generalized micromechanics constitutive theory of single crystal with thermoelastic martensitic transformation. <i>Science in China Series A: Mathematics</i> , 1998, 41, 878-886.	0.5	6
74	Fatigue Crack Growth in Cold-Rolled and Annealed Polycrystalline Superelastic NiTi Alloys. <i>Acta Mechanica Solida Sinica</i> , 2018, 31, 599-607.	1.9	6
75	Analytical solution of a mass-spring system containing shape memory alloys: Effects of nonlinearity and hysteresis. <i>International Journal of Solids and Structures</i> , 2019, 171, 189-200.	2.7	6
76	EFFECT OF TRANSFORMATION VOLUME STRAIN ON THE SPHERICAL INDENTATION OF SHAPE MEMORY ALLOYS. <i>International Journal of Modern Physics B</i> , 2008, 22, 5957-5964.	2.0	5
77	Non-local modeling on macroscopic domain patterns in phase transformation of NiTi tubes. <i>Acta Mechanica Solida Sinica</i> , 2009, 22, 407-417.	1.9	5
78	Phase-field simulations of partial pseudoelastic stress-strain behavior and microstructure evolution of Ni-Mn-Ga. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 669, 428-436.	5.6	5
79	Mechanical behaviors of polycrystalline NiTi SMAs of various grain sizes under impact loading. <i>Science China Technological Sciences</i> , 2021, 64, 1401-1411.	4.0	5
80	Structure-microstructure interactions in compression deformation of NiTi shape memory alloy micropillars. <i>Materials Letters</i> , 2019, 257, 126693.	2.6	4
81	Fatigue-Resistant Heterogeneous Gradient Nanocrystalline NiTi Shape Memory Alloy Fabricated by Pre-Strain Laser Shock Peening. <i>Shape Memory and Superelasticity</i> , 2022, 8, 107-117.	2.2	4
82	Grain Size Effects on Young's Modulus and Hardness of Nanocrystalline NiTi Shape Memory Alloy. <i>Advanced Structured Materials</i> , 2017, , 203-210.	0.5	3
83	Orientation-dependent superelasticity and fatigue of CuAlMn alloy under in situ micromechanical tensile characterization. <i>Journal of the Mechanics and Physics of Solids</i> , 2022, 160, 104787.	4.8	3
84	Negative and Zero Thermal Expansion NiTi Superelastic Shape Memory Alloy by Microstructure Engineering. <i>Shape Memory and Superelasticity</i> , 2018, 4, 158-164.	2.2	2
85	Contactless treatment for scoliosis by electromagnetically controlled shape-memory alloy rods: a preliminary study in rabbits. <i>European Spine Journal</i> , 2020, 29, 1147-1158.	2.2	2
86	Measurement of two-dimensional residual stress in nanocrystalline superelastic NiTi fabricated with pre-strain laser shock peening. <i>Mathematics and Mechanics of Solids</i> , 2022, 27, 1559-1568.	2.4	2
87	Modeling of rate-dependent phase transition in bacterial flagellar filament. <i>Materials Research Bulletin</i> , 2013, 48, 5019-5025.	5.2	1
88	Modeling of Biofilm Growth on Ager Substrate Using the Extended Finite Element Method. <i>Procedia IUTAM</i> , 2017, 23, 33-41.	1.2	1
89	Grain Size Effects on Wear Resistance of Nanocrystalline NiTi Shape Memory Alloy. <i>Advanced Structured Materials</i> , 2017, , 211-219.	0.5	0
90	Computational Study of Stretching Rate Effects on Pattern Formation in NiTi Thin Strips. <i>Advanced Structured Materials</i> , 2017, , 81-92.	0.5	0

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91	Compression Behaviors of Different Geometry-Designed NiTi Refrigerants. , 2022, , .		0
92	Continuous Operating Elastocaloric Device: Model and Experiments. , 2022, , .		0
93	An Elastocaloric Air Cooler with Low-Force Bending Actuation. , 2022, , .		0