Ruth Schwaiger

List of Publications by Year
in descending order

109	5,394	136885 32	85498 71
papers	citations	h-index	g-index

112	112	112	5003
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Nano-sized twins induce high rate sensitivity of flow stress in pure copper. Acta Materialia, 2005, 53, 2169-2179.	3.8	613
2	Some critical experiments on the strain-rate sensitivity of nanocrystalline nickel. Acta Materialia, 2003, 51, 5159-5172.	3.8	527
3	Approaching theoretical strength in glassy carbonÂnanolattices. Nature Materials, 2016, 15, 438-443.	13.3	488
4	High-strength cellular ceramic composites with 3D microarchitecture. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 2453-2458.	3.3	470
5	Nanolattices: An Emerging Class of Mechanical Metamaterials. Advanced Materials, 2017, 29, 1701850.	11.1	356
6	Length-scale-controlled fatigue mechanisms in thin copper films. Acta Materialia, 2006, 54, 3127-3139.	3.8	172
7	Fatigue in thin films: lifetime and damage formation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 319-321, 919-923.	2.6	163
8	Size effects in the fatigue behavior of thin Ag films. Acta Materialia, 2003, 51, 195-206.	3.8	163
9	High temperature nanoindentation: The state of the art and future challenges. Current Opinion in Solid State and Materials Science, 2015, 19, 354-366.	5.6	161
10	New Twists of 3D Chiral Metamaterials. Advanced Materials, 2019, 31, e1807742.	11.1	130
11	Cyclic deformation of polycrystalline Cu films. Philosophical Magazine, 2003, 83, 693-710.	0.7	129
12	High cycle fatigue of thin silver films investigated by dynamic microbeam deflection. Scripta Materialia, 1999, 41, 823-829.	2.6	94
13	Contribution of Lattice Distortion to Solid Solution Strengthening in a Series of Refractory High Entropy Alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 772-781.	1.1	91
14	Damage Behavior of 200-nm Thin Copper Films Under Cyclic Loading. Journal of Materials Research, 2005, 20, 201-207.	1.2	80
15	The attachment strategy of English ivy: a complex mechanism acting on several hierarchical levels. Journal of the Royal Society Interface, 2010, 7, 1383-1389.	1.5	78
16	Cu-Zr nanoglasses: Atomic structure, thermal stability and indentation properties. Acta Materialia, 2017, 136, 181-189.	3.8	78
17	Fatigue behavior of polycrystalline thin copper films. International Journal of Materials Research, 2002, 93, 392-400.	0.8	74
18	Defect structure in micropillars using x-ray microdiffraction. Applied Physics Letters, 2006, 89, 151905.	1.5	74

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19	Effect of film thickness and grain size on fatigue-induced dislocation structures in Cu thin films. Philosophical Magazine Letters, 2003, 83, 477-483.	0.5	73
20	Mechanics of indentation of plastically graded materialsâ€"II: Experiments on nanocrystalline alloys with grain size gradients. Journal of the Mechanics and Physics of Solids, 2008, 56, 172-183.	2.3	69
21	Push-to-pull tensile testing of ultra-strong nanoscale ceramicâ€"polymer composites made by additive manufacturing. Extreme Mechanics Letters, 2015, 3, 105-112.	2.0	69
22	Fatigue and thermal fatigue damage analysis of thin metal films. Microelectronics Reliability, 2007, 47, 2007-2013.	0.9	58
23	Quantifying the attachment strength of climbing plants: A new approach. Acta Biomaterialia, 2010, 6, 1497-1504.	4.1	53
24	The extreme mechanics of micro- and nanoarchitected materials. MRS Bulletin, 2019, 44, 758-765.	1.7	48
25	Organic fouling control through magnetic ion exchangeâ€nanofiltration (MIEXâ€NF) in water treatment. Journal of Membrane Science, 2018, 549, 474-485.	4.1	47
26	Fracture toughness characterization of single-crystalline tungsten using notched micro-cantilever specimens. International Journal of Plasticity, 2016, 81, 1-17.	4.1	44
27	Activation energy for plastic flow in nanocrystalline CoCrFeMnNi high-entropy alloy: A high temperature nanoindentation study. Scripta Materialia, 2018, 156, 129-133.	2.6	44
28	Micromechanics-based investigation of the elastic properties of polymer-modified cementitious materials using nanoindentation and semi-analytical modeling. Cement and Concrete Composites, 2018, 88, 100-114.	4.6	39
29	Thermally activated dislocation plasticity in body-centered cubic chromium studied by high-temperature nanoindentation. Acta Materialia, 2017, 140, 107-115.	3.8	38
30	Microstructural vortex formation during cyclic sliding of Cu/Au multilayers. Scripta Materialia, 2015, 107, 67-70.	2.6	37
31	Structural Development and Morphology of the Attachment System of Parthenocissus tricuspidata. International Journal of Plant Sciences, 2011, 172, 1120-1129.	0.6	36
32	Evaluating sputter deposited metal coatings on 3D printed polymer micro-truss structures. Materials and Design, 2018, 140, 442-450.	3.3	34
33	Deformation behavior and energy absorption capability of polymer and ceramic-polymer composite microlattices under cyclic loading. Journal of Materials Research, 2018, 33, 274-289.	1.2	32
34	Structure, morphology and selected mechanical properties of magnetron sputtered (Mo, Ta, Nb) thin films on NiTi shape memory alloys. Surface and Coatings Technology, 2018, 347, 379-389.	2.2	31
35	The Impact of Size and Loading Direction on the Strength of Architected Lattice Materials. Advanced Engineering Materials, 2016, 18, 1537-1543.	1.6	30
36	Quantitative damage and detwinning analysis of nanotwinned copper foil under cyclic loading. Acta Materialia, 2014, 81, 184-193.	3.8	29

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37	Mechanical assessment of ultrafine-grained nickel by microcompression experiment and finite element simulation. Journal of Materials Research, 2012, 27, 266-277.	1.2	28
38	Analyzing the mechanical behavior of thin films using nanoindentation, cantilever microbeam deflection, and finite element modeling. Journal of Materials Research, 2004, 19, 315-324.	1.2	25
39	Size Effect on the Strength and Deformation Behavior of Glassy Carbon Nanopillars. MRS Advances, 2019, 4, 133-138.	0.5	24
40	Influence of topological structure and chemical segregation on the thermal and mechanical properties of Pdâ€“Si nanoglasses. Acta Materialia, 2020, 193, 252-260.	3.8	24
41	Interactions between carbon-based nanoparticles and steroid hormone micropollutants in water. Journal of Hazardous Materials, 2021, 402, 122929.	6.5	21
42	On the effect of Ag content on the deformation behavior of ultrafine-grained Pdâ€“Ag alloys. Scripta Materialia, 2009, 61, 64-67.	2.6	19
43	Measurement of Youngâ€™s modulus of anisotropic materials using microcompression testing. Journal of Materials Research, 2012, 27, 2752-2759.	1.2	19
44	Quantitative in-situ TEM nanotensile testing of single crystal Ni facilitated by a new sample preparation approach. Micron, 2017, 94, 66-73.	1.1	19
45	Sliding wear behavior of fully nanotwinned Cu alloys. Friction, 2019, 7, 260-267.	3.4	19
46	A combined microtensile testing and nanoindentation study of the mechanical behavior of nanocrystalline LIGA Niâ€“Fe. International Journal of Materials Research, 2009, 100, 68-75.	0.1	16
47	Measurement of Mechanical Properties in Small Dimensions by Microbeam Deflection. Materials Research Society Symposia Proceedings, 1998, 518, 39.	0.1	15
48	Optimization of sintering conditions for improved microstructural and mechanical properties of dense Ce0.8Gd0.2O2–FeCo2O4 oxygen transport membranes. Journal of the European Ceramic Society, 2021, 41, 509-516.	2.8	15
49	The indentation size effect of single-crystalline tungsten revisited. Journal of Materials Research, 2021, 36, 2166-2175.	1.2	15
50	Enhancing oxygen permeation of solid-state reactive sintered Ce0.8Gd0.2O2–FeCo2O4 composite by optimizing the powder preparation method. Journal of Membrane Science, 2021, 628, 119248.	4.1	15
51	Interconnect failure due to cyclic loading. AIP Conference Proceedings, 2002, , .	0.3	14
52	Optimizing the mechanical properties of polymer resists for strong and light-weight micro-truss structures. Extreme Mechanics Letters, 2016, 8, 283-291.	2.0	14
53	Detecting co-deformation behavior of Cuâ€“Au nanolayered composites. Materials Research Letters, 2017, 5, 20-28.	4.1	14
54	Conductivity, microstructure and mechanical properties of tape-cast LATP with LiF and SiO2 additives. Journal of Materials Science, 2022, 57, 925-938.	1.7	14

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55	Dislocation structures and the role of grain boundaries in cyclically deformed Ni micropillars. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 769, 138295.	2.6	13
56	Dependence of tribofilm characteristics on the running-in behavior of aluminumâ€“silicon alloys. Journal of Materials Science, 2015, 50, 5524-5532.	1.7	12
57	Hydration of magnesia cubes: a helium ion microscopy study. Beilstein Journal of Nanotechnology, 2016, 7, 302-309.	1.5	12
58	Impact of in situ nanomechanics on physical metallurgy. MRS Bulletin, 2019, 44, 465-470.	1.7	12
59	Mechanical properties of BaCe0.65Zr0.2Y0.15O3- proton-conducting material determined using different nanoindentation methods. Journal of the European Ceramic Society, 2020, 40, 5653-5661.	2.8	12
60	Nanoglassâ€“Nanocrystal Compositeâ€”a Novel Material Class for Enhanced Strengthâ€“Plasticity Synergy. Small, 2020, 16, e2004400.	5.2	12
61	How Triboâ€Oxidation Alters the Tribological Properties of Copper and Its Oxides. Advanced Materials Interfaces, 2021, 8, 2001673.	1.9	12
62	Measurement of Thin Film Mechanical Properties by Microbeam Bending. Materials Research Society Symposia Proceedings, 1999, 563, 231.	0.1	11
63	Mechanical spectroscopy of nanocrystalline nickel near room temperature. Scripta Materialia, 2008, 59, 467-470.	2.6	11
64	A combined experimental and modeling study revealing the anisotropic mechanical response of Ti2AlN MAX phase. Journal of the European Ceramic Society, 2021, 41, 5872-5881.	2.8	11
65	Microstructure and mechanical behavior of a shape memory Niâ€“Ti bi-layer thin film. Thin Solid Films, 2015, 583, 245-254.	0.8	10
66	Investigation of microstructure defects in EUROFER97 under He+/Fe3+ dual ion beam irradiation. Nuclear Materials and Energy, 2018, 15, 148-153.	0.6	10
67	A review of coated nano- and micro-lattice materials. Journal of Materials Research, 2021, 36, 3607-3627.	1.2	10
68	Monitoring of service life consumption for tubular solar receivers: Review of contemporary thermomechanical and damage modeling approaches. Solar Energy, 2021, 226, 427-445.	2.9	10
69	Oxidation and creep behavior of textured Ti2AlC and Ti3AlC2. Journal of the European Ceramic Society, 2022, 42, 364-375.	2.8	10
70	High-cycle fatigue behavior of Znâ€“22% Al alloy processed by high-pressure torsion. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 618, 37-40.	2.6	9
71	Notch insensitive strength and ductility in gold nanowires. Acta Materialia, 2016, 108, 317-324.	3.8	9
72	Orientation Dependence of the Fracture Behavior of Single-crystal Tungsten. , 2014, 3, 479-484.		8

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73	Controlling shear band instability by nanoscale heterogeneities in metallic nanoglasses. Journal of Materials Research, 2021, 36, 2903-2914.	1.2	8
74	Fracture behavior of solid electrolyte LATP material based on micro-pillar splitting method. Journal of the European Ceramic Society, 2021, 41, 5240-5247.	2.8	8
75	Validity of the reduced modulus concept to describe indentation loading response for elastoplastic materials with sharp indenters. Journal of Materials Research, 2009, 24, 998-1006.	1.2	7
76	Structure-property-glass transition relationships in non-isocyanate polyurethanes investigated by dynamic nanoindentation. Materials Research Express, 2016, 3, 075019.	0.8	7
77	Micromechanical study on the deformation behavior of directionally solidified NiAlâ€“Cr eutectic composites. Journal of Materials Research, 2017, 32, 2127-2134.	1.2	7
78	Bio-inspired micro-to-nanoporous polymers with tunable stiffness. Beilstein Journal of Nanotechnology, 2017, 8, 906-914.	1.5	7
79	Pattern formation during deformation of metallic nanolaminates. Physical Review Materials, 2020, 4, .	0.9	7
80	Mechanical reliability of Ce 0.8 Gd 0.2 O 2â^' Î´â€FeCo 2 O 4 dual phase membranes synthesized by oneâ€step solidâ€state reaction. Journal of the American Ceramic Society, 2021, 104, 1814-1830.	1.9	6
81	Fatigue and Thermal Fatigue Damage Analysis of Thin Metal Films. , 0, , .		4
82	Annealing-induced recovery of indents in thin Au(Fe) bilayer films. Beilstein Journal of Nanotechnology, 2016, 7, 2088-2099.	1.5	4
83	Comparison of three approaches to determine the projected area in contact from finite element Berkovich nanoindentation simulations in tungsten. IOP Conference Series: Materials Science and Engineering, 2017, 257, 012013.	0.3	4
84	Coatings for Coreâ€“Shell Composite Microâ€Lattice Structures: Varying Sputtering Parameters. Advanced Engineering Materials, 2022, 24, 2101264.	1.6	4
85	Comparison of different safety concepts for evaluation of molten salt receivers. Solar Energy, 2022, 234, 119-127.	2.9	4
86	Strength assessment of Al2O3 and MgAl2O4 using micro- and macro-scale biaxial tests. Journal of Materials Science, 2022, 57, 7481-7490.	1.7	4
87	Surface flaws control strain localization in the deformation of Cu|Au nanolaminate pillars. MRS Communications, 2019, 9, 1067-1071.	0.8	3
88	Architectural tunability of mechanical metamaterials in the nanometer range. MRS Advances, 2021, 6, 507-512.	0.5	3
89	Residual stress and mechanical strength of Ce0.8Gd0.2O2−FeCo2O4 dual phase oxygen transport membranes. Journal of the European Ceramic Society, 2021, 41, 6539-6547.	2.8	3
90	pH-Induced Modulation of Vibrio fischeri Population Life Cycle. Chemosensors, 2021, 9, 283.	1.8	3

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91	Fatigue of Thin Silver Films Investigated by Dynamic Microbeam Deflection. Materials Research Society Symposia Proceedings, 1999, 594, 201.	0.1	2
92	Microscopic Investigation of Strain Localization and Fatigue Damage in Thin Cu Films. Materials Science Forum, 2005, 475-479, 3647-3650.	0.3	2
93	Indentation-induced solid-state dewetting of thin Au(Fe) films. Applied Surface Science, 2017, 411, 466-475.	3.1	2
94	The boundaries of soft magnetic composites reveal their complexity in compression and bending tests at the micro-scale. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 684, 270-274.	2.6	2
95	Improved manufacture of hybrid membranes with bionanopore adapters capable of self-luting. Bioinspired, Biomimetic and Nanobiomaterials, 2019, 8, 47-71.	0.7	2
96	Nanoscale patterning at the Si/SiO2/graphene interface by focused He+ beam. Nanotechnology, 2020, 31, 505302.	1.3	2
97	Abrasive behavior of M2AlX MAX phase materials and its relation to the brittleness index. Ceramics International, 2022, 48, 19501-19506.	2.3	2
98	Size Effects on Deformation and Fracture of Nanostructured Metals. Nanostructure Science and Technology, 2006, , 27-77.	0.1	1
99	The attachment of English ivy (Hedera helix L.): Biomechanical aspects. Comparative Biochemistry and Physiology Part A, Molecular & Integrative Physiology, 2008, 150, S89.	0.8	1
100	Numerical study of slip system activity and crystal lattice rotation under wedge nanoindents in tungsten single crystals. AIP Conference Proceedings, 2018, , .	0.3	1
101	Influence of Interface Proximity on Precipitation Thermodynamics. Metals, 2020, 10, 1292.	1.0	1
102	High temperature compressive creep behavior of BaCe_{0.65}Zr_{0.2}Y_{0.15}O_{3â^'Î´} in air and 4% H₂/Ar. Journal of the American Ceramic Society, 2021, 104, 2730-2740.	1.9	1
103	Preparing Soft Magnetic Composites for Structural and Micromechanical Investigations. Praktische Metallographie/Practical Metallography, 2017, 54, 366-387.	0.1	1
104	In situ Micro-pyrolysis of 3D Nano-printed Electron Beam Sensitive Metamaterials. Microscopy and Microanalysis, 2021, 27, 83-84.	0.2	1
105	Ternary Vss-V3Si-V5SiB2 eutectic formation in the V-Si-B system. Journal of Alloys and Compounds, 2022, 902, 163722.	2.8	1
106	Mechanical properties of BaCe0.65Zr0.2Y0.15O3- â€“ Ce0.85Gd0.15O2- dual-phase proton-conducting material with emphasis on micro-pillar splitting. Journal of the European Ceramic Society, 2022, 42, 3948-3956.	2.8	1
107	Datasets for the analysis of dislocations at grain boundaries and during vein formation in cyclically deformed Ni micropillars. Data in Brief, 2019, 27, 104724.	0.5	0
108	Triboâ€Chemistry: How Triboâ€Oxidation Alters the Tribological Properties of Copper and Its Oxides (Adv. Tj ETQq0 0 0 rgBT /Overlock	1.9	0

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109	Micromechanics-Based Prediction of the Elastic Properties of Polymer-Modified Cementitious Materials. , 2018, , 264-272.		0