Jeff Wheeler

List of Publications by Year
in descending order

88 papers	3,286 citations	117625 34 h-index	161849 54 g-index
89 all docs	89 docs citations	89 times ranked	2851 citing authors

#	Article	IF	Citations
1	Combinatorial Investigation of the Niâ€“Ta System via Correlated Highâ€Speed Nanoindentation and EDX Mapping. Small Methods, 2022, 6, e2101084.	8.6	4
2	High temperature nanoindentation of Cuâ€“TiN nanolaminates. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 804, 140522.	5.6	5
3	Size- and strain rate-dependence of nickel and Niâ€“Co micropillars with varying stacking fault energy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 800, 140266.	5.6	14
4	Mechanical phase mapping of the Taza meteorite using correlated highâ€speed nanoindentation and EDX. Journal of Materials Research, 2021, 36, 94-104.	2.6	23
5	Applicability of focused Ion beam (FIB) milling with gallium, neon, and xenon to the fracture toughness characterization of gold thin films. Journal of Materials Research, 2021, 36, 2505-2514.	2.6	13
6	Influence of indentation size and spacing on statistical phase analysis via high-speed nanoindentation mapping of metal alloys. Journal of Materials Research, 2021, 36, 2198-2212.	2.6	24
7	Probing the small-scale plasticity and phase stability of an icosahedral quasicrystal i-Al-Pd-Mn at elevated temperatures. Physical Review Materials, 2021, 5, .	2.4	3
8	Stacking-fault mediated plasticity and strengthening in lean, rare-earth free magnesium alloys. Acta Materialia, 2021, 211, 116877.	7.9	26
9	Magnetron sputtering of carbon supersaturated tungsten films â€“ A chemical approach to increase strength. Materials and Design, 2021, 208, 109874.	7.0	4
10	Double-wall ceramic nanolattices: Increased stiffness and recoverability by design. Materials and Design, 2021, 208, 109928.	7.0	6
11	Mechanical phase mapping of the Taza meteorite using correlated high-speed nanoindentation and EDX. Journal of Materials Research, 2021, 36, 1-11.	2.6	5
12	Influence of helium ion irradiation on the structure and strength of diamond. Carbon, 2020, 158, 337-345.	10.3	15
13	Combinatorial investigation of Alâ€“Cu intermetallics using small-scale mechanical testing. Journal of Alloys and Compounds, 2020, 822, 153536.	5.5	24
14	Influence of the processing route on the properties of Ti(C,N)-Fe15Ni cermets. International Journal of Refractory Metals and Hard Materials, 2020, 87, 105046.	3.8	16
15	An in situ and ex situ study of Ï‡ phase formation in a hypoeutectic Fe-based hardfacing alloy. Materials and Design, 2020, 188, 108438.	7.0	17
16	Novel Mechanical Characterization of Austenite and Ferrite Phases within Duplex Stainless Steel. Metals, 2020, 10, 1352.	2.3	24
17	Statistics of dislocation avalanches in FCC and BCC metals: dislocation mechanisms and mean swept distances across microsample sizes and temperatures. Scientific Reports, 2020, 10, 19024.	3.3	10
18	Size-dependent strengthening in multi-principal element, face-centered cubic alloys. Materials and Design, 2020, 193, 108786.	7.0	17

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19	Achieving micron-scale plasticity and theoretical strength in Silicon. Nature Communications, 2020, 11, 2681.	12.8	42
20	Size-dependent plasticity and activation parameters of lithographically-produced silicon micropillars. Materials and Design, 2020, 189, 108506.	7.0	20
21	Micro-compression studies of face-centered cubic and body-centered cubic high-entropy alloys: Size-dependent strength, strain rate sensitivity, and activation volumes. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 790, 139429.	5.6	48
22	Metals by Microâ€Scale Additive Manufacturing: Comparison of Microstructure and Mechanical Properties. Advanced Functional Materials, 2020, 30, 1910491.	14.9	52
23	The effect of dislocation nature on the size effect in Indium Antimonide above and below the brittle-ductile transition. MRS Advances, 2020, 5, 1811-1818.	0.9	3
24	Carbon addition effects on microstructure and small-scale hardness for Ti(C,N)-FeNi cermets. International Journal of Refractory Metals and Hard Materials, 2019, 85, 105064.	3.8	12
25	Determination of the true projected contact area by in situ indentation testing. Journal of Materials Research, 2019, 34, 2859-2868.	2.6	7
26	In situ small-scale mechanical testing under extreme environments. MRS Bulletin, 2019, 44, 471-477.	3.5	33
27	Deformation behavior of aluminum pillars produced by Xe and Ga focused ion beams: Insights from strain rate jump tests. Materials and Design, 2019, 181, 107914.	7.0	19
28	Nanostructured NbMoTaW high entropy alloy thin films: High strength and enhanced fracture toughness. Scripta Materialia, 2019, 168, 51-55.	5.2	47
29	Multi-metal electrohydrodynamic redox 3D printing at the submicron scale. Nature Communications, 2019, 10, 1853.	12.8	125
30	Novel high temperature vacuum nanoindentation system with active surface referencing and non-contact heating for measurements up to 800 Â°C. Review of Scientific Instruments, 2019, 90, 045105.	1.3	20
31	Superb cryogenic strength of equiatomic CrCoNi derived from gradient hierarchical microstructure. Journal of Materials Science and Technology, 2019, 35, 957-961.	10.7	40
32	Nano-impact indentation for high strain rate testing: The influence of rebound impacts. Extreme Mechanics Letters, 2019, 26, 35-39.	4.1	31
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.	2.6	32
34	Fracture of Silicon: Influence of rate, positioning accuracy, FIB machining, and elevated temperatures on toughness measured by pillar indentation splitting. Materials and Design, 2018, 142, 340-349.	7.0	56
35	Nanomechanical testing at high strain rates: New instrumentation for nanoindentation and microcompression. Materials and Design, 2018, 148, 39-48.	7.0	65
36	Temperature-dependent plastic hysteresis in highly confined polycrystalline Nb films. Modelling and Simulation in Materials Science and Engineering, 2018, 26, 025005.	2.0	1

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37	Nanocrystalline High-Entropy Alloys: A New Paradigm in High-Temperature Strength and Stability. Nano Letters, 2017, 17, 1569-1574.	9.1	151
38	Elevated temperature, micro-compression transient plasticity tests on nanocrystalline Palladium-Gold: Probing activation parameters at the lower limit of crystallinity. Acta Materialia, 2017, 129, 124-137.	7.9	13
39	In situ thermomechanical testing methods for micro/nano-scale materials. Nanoscale, 2017, 9, 2666-2688.	5.6	39
40	Reversible, high temperature softening of plasma-nitrided hot-working steel studied using in situ micro-pillar compression. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 680, 433-436.	5.6	4
41	Investigation of the deformation behavior of aluminum micropillars produced by focused ion beam machining using Ga and Xe ions. Scripta Materialia, 2017, 127, 191-194.	5.2	52
42	Nanoindentation: High Temperature. , 2016, , .		2
43	Templateâ€Free 3D Microprinting of Metals Using a Forceâ€Controlled Nanopipette for Layerâ€byâ€Layer Electrodeposition. Advanced Materials, 2016, 28, 2311-2315.	21.0	141
44	The effect of Si content on the fracture toughness of CrAlN/Si3N4 coatings. Journal of Applied Physics, 2016, 119, .	2.5	13
45	Local mechanical properties of the (Î²0+Ï‰0) composite in multiphase titanium aluminides studied with nanoindentation at room and high temperatures. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 665, 135-140.	5.6	13
46	The effect of size on the strength of FCC metals at elevated temperatures: annealed copper. Philosophical Magazine, 2016, 96, 3379-3395.	1.6	28
47	Cyclic loading for the characterisation of strain hardening during <i>in situ</i> microcompression experiments. Philosophical Magazine, 2016, 96, 3479-3501.	1.6	12
48	Bridging room-temperature and high-temperature plasticity in decagonal Alâ€"Niâ€"Co quasicrystals by micro-thermomechanical testing. Philosophical Magazine, 2016, 96, 3356-3378.	1.6	12
49	Orientation-dependent mechanical behaviour of electrodeposited copper with nanoscale twins. Nanoscale, 2016, 8, 15999-16004.	5.6	31
50	Small-scale fracture toughness of ceramic thin films: the effects of specimen geometry, ion beam notching and high temperature on chromium nitride toughness evaluation. Philosophical Magazine, 2016, 96, 3552-3569.	1.6	47
51	Plastic flow at the theoretical yield stress in ceramic films. Scripta Materialia, 2016, 117, 24-27.	5.2	8
52	High-Temperature In situ Deformation of GaAs Micro-pillars: Lithography Versus FIB Machining. Jom, 2016, 68, 2761-2767.	1.9	17
53	Microscale Fracture Behavior of Single Crystal Silicon Beams at Elevated Temperatures. Nano Letters, 2016, 16, 7597-7603.	9.1	49
54	The plasticity of indium antimonide: Insights from variable temperature, strain rate jump micro-compression testing. Acta Materialia, 2016, 106, 283-289.	7.9	28

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55	Temperature-dependent size effects on the strength of Ta and W micropillars. Acta Materialia, 2016, 103, 483-494.	7.9	96
56	Approaching the Limits of Strength: Measuring the Uniaxial Compressive Strength of Diamond at Small Scales. Nano Letters, 2016, 16, 812-816.	9.1	41
57	High temperature nanoindentation: The state of the art and future challenges. Current Opinion in Solid State and Materials Science, 2015, 19, 354-366.	11.5	161
58	Comparing small scale plasticity of copper-chromium nanolayered and alloyed thin films at elevated temperatures. Acta Materialia, 2015, 93, 175-186.	7.9	27
59	Coherent Interfaces Increase Strain-Hardening Behavior in Tri-Component Nano-Scale Metallic Multilayer Thin Films. Materials Research Letters, 2015, 3, 114-119.	8.7	9
60	Comparison of In Situ Micromechanical Strain-Rate Sensitivity Measurement Techniques. Jom, 2015, 67, 1684-1693.	1.9	35
61	Elevated Temperature, In Situ Micromechanical Characterization of a High Temperature Ternary Shape Memory Alloy. Jom, 2015, 67, 2908-2913.	1.9	3
62	Deformation of polycrystalline TRIP stainless steel micropillars. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 647, 51-57.	5.6	19
63	Transition from shear to stress-assisted diffusion of copperâ€"chromium nanolayered thin films at elevated temperatures. Acta Materialia, 2015, 100, 73-80.	7.9	23
64	Failure mechanisms in metalâ€"metal nanolaminates at elevated temperatures: Microcompression of Cuâ€"W multilayers. Scripta Materialia, 2015, 98, 28-31.	5.2	25
65	Mechanical behavior of Cu/TiN multilayers at ambient and elevated temperatures: Stress-assisted diffusion of Cu. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 620, 375-382.	5.6	34
66	Elevated temperature, strain rate jump microcompression of nanocrystalline nickel. Philosophical Magazine, 2015, 95, 1878-1895.	1.6	60
67	In-situ optical oblique observation of scratch testing. Surface and Coatings Technology, 2014, 258, 127-133.	4.8	14
68	Deformation of Hard Coatings at Elevated Temperatures. Surface and Coatings Technology, 2014, 254, 382-387.	4.8	41
69	Understanding size effects on the strength of single crystals through high-temperature micropillar compression. Acta Materialia, 2014, 81, 50-57.	7.9	55
70	Anomalous yielding in the complex metallic alloy Al13Co4. Acta Materialia, 2013, 61, 7189-7196.	7.9	12
71	Invited Article: Indenter materials for high temperature nanoindentation. Review of Scientific Instruments, 2013, 84, 101301.	1.3	101
72	Extraction of plasticity parameters of GaN with high temperature, in situ micro-compression. International Journal of Plasticity, 2013, 40, 140-151.	8.8	70

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73	Silicon micropillars: high stress plasticity. Physica Status Solidi C: Current Topics in Solid State Physics, 2013, 10, 11-15.	0.8	31
74	Activation parameters for deformation of ultrafine-grained aluminium as determined by indentation strain rate jumps at elevated temperature. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 585, 108-113.	5.6	87
75	Analysis of failure modes under nano-impact fatigue of coatings via high-speed sampling. Surface and Coatings Technology, 2013, 232, 264-268.	4.8	33
76	Elevated temperature, nano-mechanical testing <i>in situ</i> in the scanning electron microscope. Review of Scientific Instruments, 2013, 84, 045103.	1.3	130
77	Measuring the fracture resistance of hard coatings. Applied Physics Letters, 2013, 102, .	3.3	64
78	High temperature microcompression and nanoindentation in vacuum. Journal of Materials Research, 2012, 27, 167-176.	2.6	71
79	Elevated temperature,<i>in situ</i>indentation with calibrated contact temperatures. Philosophical Magazine, 2012, 92, 3128-3141.	1.6	66
80	Nanoindentation of palladiumâ€“hydrogen. International Journal of Hydrogen Energy, 2012, 37, 14315-14322.	7.1	8
81	Microstructure and multi-scale mechanical behavior of hard anodized and plasma electrolytic oxidation (PEO) coatings on aluminum alloy 5052. Surface and Coatings Technology, 2012, 207, 480-488.	4.8	70
82	Temperature invariant flow stress during microcompression of a Zr-based bulk metallic glass. Scripta Materialia, 2012, 67, 125-128.	5.2	27
83	In situ SEM indentation of a Zr-based bulk metallic glass at elevated temperatures. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2011, 528, 8750-8756.	5.6	35
84	Evaluation of micromechanical behaviour of plasma electrolytic oxidation (PEO) coatings on Tiâ€“6Alâ€“4V. Surface and Coatings Technology, 2010, 204, 3399-3409.	4.8	107
85	Nanoindentation of a Pseudoelastic NiTiFe Shape Memory Alloy. Advanced Engineering Materials, 2010, 12, 13-19.	3.5	34
86	Use of quasi-static nanoindentation data to obtain stressâ€“strain characteristics for metallic materials. Acta Materialia, 2010, 58, 3613-3623.	7.9	60
87	AFM observation of diamond indenters after oxidation at elevated temperatures. Diamond and Related Materials, 2010, 19, 1348-1353.	3.9	43
88	Testing the â€˜Laacher See hypothesisâ€™: tephra as dental abrasive. Journal of Archaeological Science, 2009, 36, 2384-2391.	2.4	29