

Daniel Kiener

List of Publications by Year in descending order

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153
papers

6,791
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61984

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all docs

157
docs citations

157
times ranked

4689
citing authors

#	ARTICLE	IF	CITATIONS
1	High-throughput Micromechanical Testing Enabled by Optimized Direct Laser Writing. <i>Advanced Engineering Materials</i> , 2023, 25, .	3.5	5
2	Effect of crystal orientation on the hardness and strength of piezoelectric LiNbO ₃ substrates for microelectronic applications. <i>Materials and Design</i> , 2022, 213, 110306.	7.0	2
3	Prospects of enhancing the understanding of material-hydrogen interaction by novel in-situ and in-operando methods. <i>International Journal of Hydrogen Energy</i> , 2022, 47, 10097-10111.	7.1	4
4	Helium-induced swelling and mechanical property degradation in ultrafine-grained W and W-Cu nanocomposites for fusion applications. <i>Scripta Materialia</i> , 2022, 213, 114641.	5.2	10
5	The influence of chemistry on the interface toughness in a WTi-Cu system. <i>Acta Materialia</i> , 2022, 230, 117813.	7.9	7
6	Tuning mechanical properties of ultrafine-grained tungsten by manipulating grain boundary chemistry. <i>Acta Materialia</i> , 2022, 232, 117939.	7.9	7
7	In situ micromechanical analysis of a nano-crystalline W-Cu composite. <i>Materials and Design</i> , 2022, 220, 110848.	7.0	5
8	Open-cell tungsten nanofoams: Scaling behavior and structural disorder dependence of Young's modulus and flow strength. <i>Materials and Design</i> , 2021, 197, 109187.	7.0	12
9	The effect of grain size on bubble formation and evolution in helium-irradiated Cu-Fe-Ag. <i>Materials Characterization</i> , 2021, 171, 110822.	4.4	11
10	Multi-method characterization approach to facilitate a strategy to design mechanical and electrical properties of sintered copper. <i>Materials and Design</i> , 2021, 197, 109188.	7.0	10
11	Prospects of Using Small Scale Testing to Examine Different Deformation Mechanisms in Nanoscale Single Crystals—A Case Study in Mg. <i>Crystals</i> , 2021, 11, 61.	2.2	6
12	Extracting information from noisy data: strain mapping during dynamic in situ SEM experiments. <i>Journal of Materials Research</i> , 2021, 36, 2291-2304.	2.6	7
13	In situ fracture observations of distinct interface types within a fully lamellar intermetallic TiAl alloy. <i>Journal of Materials Research</i> , 2021, 36, 2465-2478.	2.6	13
14	Initiation of fatigue damage in ultrafine grained metal films. <i>Acta Materialia</i> , 2021, 206, 116599.	7.9	13
15	How the interface type manipulates the thermomechanical response of nanostructured metals: A case study on nickel. <i>Materialia</i> , 2021, 15, 101020.	2.7	6
16	Zr addition-dependent twin morphology evolution and strengthening response in nanostructured Al thin films. <i>Materialia</i> , 2021, 16, 101076.	2.7	4
17	Strength ranking for interfaces between a TiN hard coating and microstructural constituents of high speed steel determined by micromechanical testing. <i>Materials and Design</i> , 2021, 204, 109690.	7.0	11
18	In-situ TEM investigation of toughening in Silicon at small scales. <i>Materials Today</i> , 2021, 48, 29-37.	14.2	13

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19	Disordered interfaces enable high temperature thermal stability and strength in a nanocrystalline aluminum alloy. <i>Acta Materialia</i> , 2021, 215, 116973.	7.9	27
20	How grain boundary characteristics influence plasticity close to and above the critical temperature of ultra-fine grained bcc Ta2.5W. <i>Acta Materialia</i> , 2021, 216, 117110.	7.9	9
21	High-speed nanoindentation mapping of organic matter-rich rocks: A critical evaluation by correlative imaging and machine learning data analysis. <i>International Journal of Coal Geology</i> , 2021, 247, 103847.	5.0	11
22	Controlling the high temperature deformation behavior and thermal stability of ultra-fine-grained W by re alloying. <i>Journal of Materials Research</i> , 2021, 36, 2408-2419.	2.6	3
23	A Perspective to Control Laser-Induced Periodic Surface Structure Formation at Glancing-Incident Femtosecond Laser-Processed Surfaces. <i>Jom</i> , 2021, 73, 4248-4257.	1.9	3
24	High-Temperature Nanoindentation of an Advanced Nano-Crystalline W/Cu Composite. <i>Nanomaterials</i> , 2021, 11, 2951.	4.1	5
25	Tailoring ultra-strong nanocrystalline tungsten nanofoams by reverse phase dissolution. <i>Acta Materialia</i> , 2020, 182, 215-225.	7.9	26
26	Intrinsic toughness of the bulk-metallic glass Vitreloy 105 measured using micro-cantilever beams. <i>Acta Materialia</i> , 2020, 183, 242-248.	7.9	20
27	Probing defect relaxation in ultra-fine grained Ta using micromechanical spectroscopy. <i>Acta Materialia</i> , 2020, 185, 309-319.	7.9	10
28	Correlation between fracture characteristics and valence electron concentration of sputtered Hf-C-N based thin films. <i>Surface and Coatings Technology</i> , 2020, 399, 126212.	4.8	18
29	Addressing Fracture Properties of Individual Constituents Within a Cu-WTi-SiOx-Si Multilayer. <i>Jom</i> , 2020, 72, 4551-4558.	1.9	14
30	Addressing H-Material Interaction in Fast Diffusion Materials – A Feasibility Study on a Complex Phase Steel. <i>Materials</i> , 2020, 13, 4677.	2.9	10
31	In-situ observation of the initiation of plasticity by nucleation of prismatic dislocation loops. <i>Nature Communications</i> , 2020, 11, 2367.	12.8	23
32	Experimental and Numerical Investigation of the Deformation and Fracture Mode of Microcantilever Beams Made of Cr(Re)/Al2O3 Metal Matrix Composite. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2020, 51, 2377-2390.	2.2	10
33	An analytical solution for the correct determination of crack lengths via cantilever stiffness. <i>Materials and Design</i> , 2020, 194, 108914.	7.0	18
34	Thermally activated deformation mechanisms and solid solution softening in W-Re alloys investigated via high temperature nanoindentation. <i>Materials and Design</i> , 2020, 189, 108499.	7.0	37
35	Open-cell tungsten nanofoams: Chloride ion induced structure modification and mechanical behavior. <i>Results in Physics</i> , 2020, 17, 103062.	4.1	4
36	An SEM compatible plasma cell for <i>in situ</i> studies of hydrogen-material interaction. <i>Review of Scientific Instruments</i> , 2020, 91, 043705.	1.3	13

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37	Achieving work hardening by forming boundaries on the nanoscale in a Ti-based metallic glass matrix composite. <i>Journal of Materials Science and Technology</i> , 2020, 50, 192-203.	10.7	11
38	Nanoscale pore structure of Carboniferous coals from the Ukrainian Donets Basin: A combined HRTEM and gas sorption study. <i>International Journal of Coal Geology</i> , 2020, 224, 103484.	5.0	37
39	Fracture behavior and deformation mechanisms in nanolaminated crystalline/amorphous micro-cantilevers. <i>Acta Materialia</i> , 2019, 180, 73-83.	7.9	34
40	Rate limiting deformation mechanisms of bcc metals in confined volumes. <i>Acta Materialia</i> , 2019, 166, 687-701.	7.9	37
41	Fracture properties of ultrafine grain chromium correlated to single dislocation processes at room temperature. <i>Journal of Materials Research</i> , 2019, 34, 2370-2383.	2.6	14
42	Bioinspired nacre-like alumina with a bulk-metallic glass-forming alloy as a compliant phase. <i>Nature Communications</i> , 2019, 10, 961.	12.8	106
43	Ultrafine-grained Tungsten by High-Pressure Torsion " Bulk precursor versus powder processing route. <i>IOP Conference Series: Materials Science and Engineering</i> , 2019, 580, 012051.	0.6	9
44	Anneal hardening and elevated temperature strain rate sensitivity of nanostructured metals: Their relation to intergranular dislocation accommodation. <i>Acta Materialia</i> , 2019, 165, 409-419.	7.9	45
45	Universally scaling Hall-Petch-like relationship in metallic glass matrix composites. <i>International Journal of Plasticity</i> , 2018, 105, 225-238.	8.8	43
46	Incipient plasticity and surface damage in LiTaO ₃ and LiNbO ₃ single crystals. <i>Materials and Design</i> , 2018, 153, 221-231.	7.0	31
47	In-situ elastic-plastic fracture mechanics on the microscale by means of continuous dynamical testing. <i>Materials and Design</i> , 2018, 148, 177-187.	7.0	50
48	Atomistic origins of the differences in anisotropic fracture behaviour of LiTaO ₃ and LiNbO ₃ single crystals. <i>Acta Materialia</i> , 2018, 150, 373-380.	7.9	17
49	Essential refinements of spherical nanoindentation protocols for the reliable determination of mechanical flow curves. <i>Materials and Design</i> , 2018, 146, 69-80.	7.0	37
50	Nanoindentation creep behavior of Cu-Zr metallic glass films. <i>Materials Research Letters</i> , 2018, 6, 22-28.	8.7	40
51	Impact of interfaces on the radiation response and underlying defect recovery mechanisms in nanostructured Cu-Fe-Ag. <i>Materials and Design</i> , 2018, 160, 1148-1157.	7.0	19
52	Crack arrest in thin metallic film stacks due to material- and residual stress inhomogeneities. <i>Thin Solid Films</i> , 2018, 668, 14-22.	1.8	16
53	Fracture mechanics of micro samples: Fundamental considerations. <i>Materials and Design</i> , 2018, 159, 252-267.	7.0	82
54	Linking Macroscopic Fracture Properties to Single Dislocation Processes. <i>Microscopy and Microanalysis</i> , 2018, 24, 2184-2185.	0.4	0

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73	Synthesis and Mechanical Characterisation of an Ultra-Fine Grained Ti-Mg Composite. <i>Materials</i> , 2016, 9, 688.	2.9	5
74	FIB-induced dislocations in Al submicron pillars: Annihilation by thermal annealing and effects on deformation behavior. <i>Acta Materialia</i> , 2016, 110, 283-294.	7.9	66
75	The effect of size on the strength of FCC metals at elevated temperatures: annealed copper. <i>Philosophical Magazine</i> , 2016, 96, 3379-3395.	1.6	28
76	Interface dominated mechanical properties of ultra-fine grained and nanoporous Au at elevated temperatures. <i>Acta Materialia</i> , 2016, 121, 104-116.	7.9	32
77	Interplay between sample size and grain size: Single crystalline vs. ultrafine-grained chromium micropillars. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 674, 626-633.	5.6	31
78	Correlative microstructure and topography informed nanoindentation of copper films. <i>Surface and Coatings Technology</i> , 2016, 308, 404-413.	4.8	9
79	Fracture and material behavior of thin film composites. , 2016, , .		0
80	Advanced characterisation of thermo-mechanical fatigue mechanisms of different copper film systems for wafer metallizations. <i>Thin Solid Films</i> , 2016, 612, 153-164.	1.8	20
81	Ductilisation of tungsten (W) through cold-rolling: R-curve behaviour. <i>International Journal of Refractory Metals and Hard Materials</i> , 2016, 58, 22-33.	3.8	40
82	Miniaturized fracture experiments to determine the toughness of individual films in a multilayer system. <i>Extreme Mechanics Letters</i> , 2016, 8, 235-244.	4.1	24
83	High resolution determination of local residual stress gradients in single- and multilayer thin film systems. <i>Acta Materialia</i> , 2016, 103, 616-623.	7.9	55
84	Cross-sectional structure-property relationship in a graded nanocrystalline Ti $_{1-x}$ Al $_x$ N thin film. <i>Acta Materialia</i> , 2016, 102, 212-219.	7.9	34
85	Fracture mechanics of thin film systems on the sub-micron scale. , 2015, , .		2
86	Thermally Activated Deformation Behavior of ufg-Au: Environmental Issues During Long-Term and High-Temperature Nanoindentation Testing. <i>Jom</i> , 2015, 67, 2934-2944.	1.9	20
87	Thermally activated deformation processes in body-centered cubic Cr – How microstructure influences strain-rate sensitivity. <i>Scripta Materialia</i> , 2015, 106, 42-45.	5.2	50
88	In Situ TEM Microcompression of Single and Bicrystalline Samples: Insights and Limitations. <i>Jom</i> , 2015, 67, 1704-1712.	1.9	35
89	Elevated temperature mechanical properties of novel ultra-fine grained Cu–Nb composites. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 625, 296-302.	5.6	25
90	Microstructure and mechanical properties of Cu $_x$ Nb $_{1-x}$ alloys prepared by ball milling and high pressure torsion compacting. <i>Journal of Alloys and Compounds</i> , 2015, 630, 117-125.	5.5	23

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91	Internal and external stresses: In situ TEM compression of Cu bicrystals containing a twin boundary. Scripta Materialia, 2015, 100, 94-97.	5.2	45
92	In-Situ Measurements of Free-Standing, Ultra-Thin Film Cracking in Bending. Experimental Mechanics, 2015, 55, 1681-1690.	2.0	25
93	Small scale mechanical testing of irradiated materials. Journal of Materials Research, 2015, 30, 1231-1245.	2.6	78
94	Site Specific Microstructural Evolution of Thermo-mechanically Fatigued Copper Films. BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik, 2015, 160, 235-239.	1.0	5
95	Fabrication and thermo-mechanical behavior of ultra-fine porous copper. Journal of Materials Science, 2015, 50, 634-643.	3.7	36
96	Young's Modulus and Poisson's Ratio Characterization of Tungsten Thin Films Via Laser Ultrasound. Materials Today: Proceedings, 2015, 2, 4289-4294.	1.8	18
97	X-ray nanodiffraction reveals stress distribution across an indented multilayered Cr-Ni-Cr thin film. Acta Materialia, 2015, 85, 24-31.	7.9	53
98	Novel Methods for the Site Specific Preparation of Micromechanical Structures. Praktische Metallographie/Practical Metallography, 2015, 52, 131-146.	0.3	12
99	Extreme Ductility at the Nanoscale in Fe-based Alloys. Microscopy and Microanalysis, 2014, 20, 1876-1877.	0.4	2
100	Influence of metastable retained austenite on macro and micromechanical properties of steel processed by the Q&P process. Journal of Alloys and Compounds, 2014, 615, S163-S168.	5.5	50
101	Reversible cyclic deformation mechanism of gold nanowires by twinning-detwinning transition evidenced from in situ TEM. Nature Communications, 2014, 5, 3033.	12.8	137
102	Evaluation of the residual stress distribution in thin films by means of the ion beam layer removal method. , 2014, , .		2
103	Microstructural evolution of a focused ion beam fabricated Mg nanopillar at high temperatures: Defect annihilation and sublimation. Scripta Materialia, 2014, 86, 44-47.	5.2	7
104	Critical assessment of the determination of residual stress profiles in thin films by means of the ion beam layer removal method. Thin Solid Films, 2014, 564, 321-330.	1.8	51
105	Influence of bulk pre-straining on the size effect in nickel compression pillars. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 559, 147-158.	5.6	59
106	Annealing Effects on the Structural Properties of FIB Prepared Cu Nanopillars - an in situ TEM study. Microscopy and Microanalysis, 2013, 19, 432-433.	0.4	0
107	Advanced nanomechanics in the TEM: effects of thermal annealing on FIB prepared Cu samples. Philosophical Magazine, 2012, 92, 3269-3289.	1.6	48
108	Yield and plastic flow of soft metals in small volumes loaded in tension and flexure. Philosophical Magazine, 2012, 92, 3199-3215.	1.6	5

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109	Application of small-scale testing for investigation of ion-beam-irradiated materials. <i>Journal of Materials Research</i> , 2012, 27, 2724-2736.	2.6	80
110	Quantitative Approaches for in situ SEM and TEM Deformation Studies. <i>Microscopy and Microanalysis</i> , 2012, 18, 736-737.	0.4	0
111	Connecting in situ TEM mechanical testing with bulk properties of irradiated materials. <i>Microscopy and Microanalysis</i> , 2012, 18, 1344-1345.	0.4	0
112	Strength, Hardening, and Failure Observed by In Situ TEM Tensile Testing. <i>Advanced Engineering Materials</i> , 2012, 14, 960-967.	3.5	19
113	Issues to consider using nano indentation on shallow ion beam irradiated materials. <i>Journal of Nuclear Materials</i> , 2012, 425, 136-139.	2.7	176
114	Sample Preparation by Metallography and Focused Ion Beam for Nanomechanical Testing. <i>Praktische Metallographie/Practical Metallography</i> , 2012, 49, 343-355.	0.3	22
115	Decomposition pathways in age hardening of Ti-Al-N films. <i>Journal of Applied Physics</i> , 2011, 110, .	2.5	152
116	In situ nanocompression testing of irradiated copper. <i>Nature Materials</i> , 2011, 10, 608-613.	27.5	268
117	Dislocation plasticity of Al film on polyimide investigated by cross-sectional in situ transmission electron microscopy straining. <i>Scripta Materialia</i> , 2011, 65, 456-459.	5.2	11
118	Source Truncation and Exhaustion: Insights from Quantitative in situ TEM Tensile Testing. <i>Nano Letters</i> , 2011, 11, 3816-3820.	9.1	207
119	Local and non-local behavior and coordinated buckling of CNT turfs. <i>Carbon</i> , 2011, 49, 1430-1438.	10.3	47
120	Source-controlled yield and hardening of Cu(100) studied by in situ transmission electron microscopy. <i>Acta Materialia</i> , 2011, 59, 1328-1337.	7.9	158
121	Work hardening in micropillar compression: In situ experiments and modeling. <i>Acta Materialia</i> , 2011, 59, 3825-3840.	7.9	86
122	Time-dependent contact behavior between diamond and a CNT turf. <i>Nanotechnology</i> , 2011, 22, 295702.	2.6	22
123	Towards predictive modeling of near-edge structures in electron energy-loss spectra of AlN-based ternary alloys. <i>Physical Review B</i> , 2011, 83, .	3.2	36
124	Effects of thermal annealing on the microstructure of sputtered Al ₂ O ₃ coatings. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2011, 29, .	2.1	25
125	Dislocation storage in single slip-oriented Cu micro-tensile samples: new insights via X-ray microdiffraction. <i>Philosophical Magazine</i> , 2011, 91, 1256-1264.	1.6	43
126	Mitigating Focused Ion Beam Damage in Molybdenum Nanopillars by In Situ Annealing. <i>Microscopy and Microanalysis</i> , 2010, 16, 1748-1749.	0.4	0

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127	Cyclic response of copper single crystal micro-beams. Scripta Materialia, 2010, 63, 500-503.	5.2	93
128	Achieving the ideal strength in annealed molybdenum nanopillars. Acta Materialia, 2010, 58, 5160-5167.	7.9	101
129	Perylene-labeled Silica Nanoparticles: Synthesis and Characterization of Three Novel Silica Nanoparticle Species for Live-Cell Imaging. Small, 2010, 6, 2427-2435.	10.0	35
130	Influence of Yttrium on the Thermal Stability of Ti-Al-N Thin Films. Materials, 2010, 3, 1573-1592.	2.9	38
131	Overview on established and novel FIB based miniaturized mechanical testing using in-situ SEM. International Journal of Materials Research, 2009, 100, 1074-1087.	0.3	57
132	Deformation twinning in Ni-Mn-Ga micropillars with 10M martensite. Journal of Applied Physics, 2009, 106, 53906.	2.5	20
133	On the importance of sample compliance in uniaxial microtesting. Scripta Materialia, 2009, 60, 148-151.	5.2	75
134	Micro-compression testing: A critical discussion of experimental constraints. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 505, 79-87.	5.6	192
135	Revealing deformation mechanisms with nanoindentation. Jom, 2009, 61, 14-23.	1.9	21
136	In situ observation of dislocation nucleation and escape in a submicrometre aluminium single crystal. Nature Materials, 2009, 8, 95-100.	27.5	400
137	Can micro-compression testing provide stress-strain data for thin films?. Thin Solid Films, 2009, 518, 1517-1521.	1.8	17
138	Synthesis and Biological Evaluation of a Bioresponsive and Endosomolytic siRNA-Polymer Conjugate. Molecular Pharmaceutics, 2009, 6, 752-762.	4.6	166
139	An exploratory study to determine applicability of nano-hardness and micro-compression measurements for yield stress estimation. Journal of Nuclear Materials, 2008, 375, 135-143.	2.7	96
140	Dislocation-induced crystal rotations in micro-compressed single crystal copper columns. Journal of Materials Science, 2008, 43, 2503-2506.	3.7	47
141	Testing Thin Films by Microcompression: Benefits and Limits. BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik, 2008, 153, 257-262.	1.0	5
142	A further step towards an understanding of size-dependent crystal plasticity: In situ tension experiments of miniaturized single-crystal copper samples. Acta Materialia, 2008, 56, 580-592.	7.9	441
143	Crystal rotation in Cu single crystal micropillars: In situ Laue and electron backscatter diffraction. Applied Physics Letters, 2008, 92, .	3.3	77
144	Influence of external and internal length scale on the flow stress of copper. International Journal of Materials Research, 2007, 98, 1047-1053.	0.3	26

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145	Conventional TEM Investigation Of The FIB Damage In Copper. <i>Microscopy and Microanalysis</i> , 2007, 13, 100-101.	0.4	10
146	Size-Induced Transition from Perfect to Partial Dislocation Plasticity in Single Crystal Au Films on Polyimide. <i>Microscopy and Microanalysis</i> , 2007, 13, 278-279.	0.4	1
147	In situ TEM straining of single crystal Au films on polyimide: Change of deformation mechanisms at the nanoscale. <i>Acta Materialia</i> , 2007, 55, 5558-5571.	7.9	116
148	FIB damage of Cu and possible consequences for miniaturized mechanical tests. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007, 459, 262-272.	5.6	386
149	Fracture toughness investigations of tungsten alloys and SPD tungsten alloys. <i>Journal of Nuclear Materials</i> , 2007, 367-370, 800-805.	2.7	158
150	Microstructural evolution of the deformed volume beneath microindents in tungsten and copper. <i>Acta Materialia</i> , 2006, 54, 2801-2811.	7.9	87
151	Determination of Mechanical Properties of Copper at the Micron Scale. <i>Advanced Engineering Materials</i> , 2006, 8, 1119-1125.	3.5	191
152	Nanoindentation study of macerals in coals from the Ukrainian Donets Basin. <i>Advances in Geosciences</i> , 0, 45, 73-83.	12.0	14
153	<i>In situ</i> fracture observations of distinct interface types within a fully lamellar intermetallic TiAl alloy. <i>Journal of Materials Research</i> , 0, , 1-14.	2.6	1