Timothy J Rupert

List of Publications by Citations

80 papers	2,000 citations	24 h-index	43 g-index
87 ext. papers	2,524 ext. citations	5.3 avg, IF	5.83 L-index

#	Paper	IF	Citations
80	Sliding wear of nanocrystalline Ni–W: Structural evolution and the apparent breakdown of Archard scaling. *Acta Materialia*, **2010**, 58, 4137-4148	8.4	226
79	Enhanced solid solution effects on the strength of nanocrystalline alloys. *Acta Materialia*, **2011**, 59, 1619-1631	8.4	161
78	Manipulating the interfacial structure of nanomaterials to achieve a unique combination of strength and ductility. *Nature Communications*, **2016**, 7, 10802	17.4	146
77	A high-entropy alloy with hierarchical nanoprecipitates and ultrahigh strength. *Science Advances*, **2018**, 4, eaat8712	14.3	142
76	Grain boundary relaxation strengthening of nanocrystalline Ni–W alloys. *Journal of Materials Research*, **2012**, 27, 1285-1294	2.5	120
75	Amorphous intergranular films as toughening structural features. *Acta Materialia*, **2015**, 89, 205-214	8.4	76
74	High-Temperature Stability and Grain Boundary Complexion Formation in a Nanocrystalline Cu-Zr Alloy. *Jom*, **2015**, 67, 2788-2801	2.1	61
73	Materials selection rules for amorphous complexion formation in binary metallic alloys. *Acta Materialia*, **2017**, 140, 196-205	8.4	56
72	Strain localization in a nanocrystalline metal: Atomic mechanisms and the effect of testing conditions. *Journal of Applied Physics*, **2013**, 114, 033527	2.5	54
71	Abrasive wear response of nanocrystalline Ni–W alloys across the Hall–Petchbreakdown. *Wear*, **2013**, 298-299, 120-126	3.5	51
70	The role of complexions in metallic nano-grain stability and deformation. *Current Opinion in Solid State and Materials Science*, **2016**, 20, 257-267	12	47
69	Mechanically driven grain boundary relaxation: a mechanism for cyclic hardening in nanocrystalline Ni. *Philosophical Magazine Letters*, **2012**, 92, 20-28	1	46
68	Grain boundary complexions and the strength of nanocrystalline metals: Dislocation emission and propagation. *Acta Materialia*, **2018**, 151, 100-111	8.4	44
67	Effect of grain boundary character on segregation-induced structural transitions. *Physical Review B*, **2016**, 93,	3.3	40
66	Grain Boundary Complexion Transitions. *Annual Review of Materials Research*, **2020**, 50, 465-492	12.8	39
65	Amorphous complexions enable a new region of high temperature stability in nanocrystalline Ni-W. *Scripta Materialia*, **2018**, 154, 49-53	5.6	36
64	Damage nucleation from repeated dislocation absorption at a grain boundary. *Computational Materials Science*, **2014**, 93, 206-209	3.2	34

63	Plasticity-induced restructuring of a nanocrystalline grain boundary network. *Acta Materialia*, **2016**, 120, 1-13	8.4	33
62	The formation and characterization of large twin related domains. *Acta Materialia*, **2017**, 129, 500-509	8.4	32
61	Uncovering the influence of common nonmetallic impurities on the stability and strength of a □ (310) grain boundary in Cu. *Acta Materialia*, **2018**, 148, 110-122	8.4	31
60	Nanocrystalline Al-Mg with extreme strength due to grain boundary doping. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2017**, 696, 400-406	5.3	30
59	Tracking Microstructure of Crystalline Materials: A Post-Processing Algorithm for Atomistic Simulations. *Jom*, **2014**, 66, 417-428	2.1	30
58	Nanocrystalline grain boundary engineering: Increasing □ boundary fraction in pure Ni with thermomechanical treatments. *Acta Materialia*, **2015**, 86, 43-54	8.4	30
57	Emergence of localized plasticity and failure through shear banding during microcompression of a nanocrystalline alloy. *Acta Materialia*, **2014**, 65, 326-337	8.4	24
56	Solid solution strengthening and softening due to collective nanocrystalline deformation physics. *Scripta Materialia*, **2014**, 81, 44-47	5.6	23
55	Quantitative tracking of grain structure evolution in a nanocrystalline metal during cyclic loading. *Modelling and Simulation in Materials Science and Engineering*, **2015**, 23, 025005	2	23
54	Amorphous intergranular films act as ultra-efficient point defect sinks during collision cascades. *Scripta Materialia*, **2016**, 110, 37-40	5.6	22
53	Reversed compressive yield anisotropy in magnesium with microlaminated structure. *Acta Materialia*, **2018**, 146, 12-24	8.4	20
52	Thick amorphous complexion formation and extreme thermal stability in ternary nanocrystalline Cu-Zr-Hf alloys. *Acta Materialia*, **2019**, 179, 172-182	8.4	18
51	Effect of growth temperature on the synthesis of carbon nanotube arrays and amorphous carbon for thermal applications. *Physica Status Solidi (A) Applications and Materials Science*, **2017**, 214, 1600852	1.6	17
50	Formation of ordered and disordered interfacial films in immiscible metal alloys. *Scripta Materialia*, **2017**, 130, 91-95	5.6	16
49	Combined effects of nonmetallic impurities and planned metallic dopants on grain boundary energy and strength. *Acta Materialia*, **2019**, 166, 113-125	8.4	16
48	Heavy ion irradiation effects on GaN/AlGaN high electron mobility transistor failure at off-state. *Microelectronics Reliability*, **2019**, 102, 113493	1.2	15
47	Disruption of thermally-stable nanoscale grain structures by strain localization. *Scientific Reports*, **2015**, 5, 10663	4.9	13
46	Grain Boundary Character Distributions in Nanocrystalline Metals Produced by Different Processing Routes. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2016**, 47, 1389-1403	2.3	12

45	Twin formation from a twin boundary in Mg during in-situ nanomechanical testing. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2019**, 759, 142-153	5.3	11
44	Disconnection-mediated twin embryo growth in Mg. *Acta Materialia*, **2020**, 194, 437-451	8.4	11
43	Atomistic modeling of interfacial segregation and structural transitions in ternary alloys. *Journal of Materials Science*, **2019**, 54, 3975-3993	4.3	11
42	In Situ High-Cycle Fatigue Reveals Importance of Grain Boundary Structure in Nanocrystalline Cu-Zr. *Jom*, **2019**, 71, 1221-1232	2.1	10
41	Linear Complexions: Metastable Phase Formation and Coexistence at Dislocations. *Physical Review Letters*, **2019**, 122, 126102	7.4	10
40	Amorphous intergranular films mitigate radiation damage in nanocrystalline Cu-Zr. *Acta Materialia*, **2020**, 186, 341-354	8.4	10
39	Identifying interatomic potentials for the accurate modeling of interfacial segregation and structural transitions. *Computational Materials Science*, **2018**, 148, 10-20	3.2	10
38	Dislocation-assisted linear complexion formation driven by segregation. *Scripta Materialia*, **2018**, 154, 25-29	5.6	9
37	Femtosecond laser rejuvenation of nanocrystalline metals. *Acta Materialia*, **2018**, 156, 183-195	8.4	9
36	Spatial variation of short-range order in amorphous intergranular complexions. *Computational Materials Science*, **2017**, 131, 62-68	3.2	8
35	Critical cooling rates for amorphous-to-ordered complexion transitions in Cu-rich nanocrystalline alloys. *Acta Materialia*, **2021**, 206, 116650	8.4	8
34	Prediction of a wide variety of linear complexions in face centered cubic alloys. *Acta Materialia*, **2020**, 185, 129-141	8.4	7
33	Accommodation and formation of {1□012} twins in Mg-Y alloys. *Acta Materialia*, **2021**, 204, 116514	8.4	7
32	Disordered interfaces enable high temperature thermal stability and strength in a nanocrystalline aluminum alloy. *Acta Materialia*, **2021**, 215, 116973	8.4	7
31	Toughening magnesium with gradient twin meshes. *Acta Materialia*, **2020**, 195, 468-481	8.4	6
30	Amorphous Intergranular Films Enable the Creation of Bulk Nanocrystalline Cu□Zr with Full Density. *Advanced Engineering Materials*, **2019**, 21, 1900333	3.5	6
29	Modelling wrinkling interactions produced by patterned defects in metal thin films. *Extreme Mechanics Letters*, **2015**, 4, 175-185	3.9	6
28	Mechanisms of near-surface structural evolution in nanocrystalline materials during sliding contact. *Physical Review Materials*, **2017**, 1,	3.2	6

27	Bulk nanocrystalline Al alloys with hierarchical reinforcement structures via grain boundary segregation and complexion formation. *Acta Materialia*, **2021**, 221, 117394	8.4	5
26	Influence and comparison of contaminate partitioning on nanocrystalline stability in sputter-deposited and ball-milled Cu▯Zr alloys. *Journal of Materials Science*, **2020**, 55, 16758-16779	4.3	5
25	Bulk high-entropy hexaborides. *Journal of the European Ceramic Society*, **2021**, 41, 5775-5781	6	5
24	Embracing the Chaos: Alloying Adds Stochasticity to Twin Embryo Growth. *Physical Review Letters*, **2020**, 125, 205503	7.4	4
23	Forces to pierce cuticle of tarsi and material properties determined by nanoindentation: The AchillesUheel of bed bugs. *Biology Open*, **2017**, 6, 1541-1551	2.2	4
22	Revealing the deformation mechanisms for room-temperature compressive superplasticity in nanocrystalline magnesium. *Materialia*, **2020**, 11, 100731	3.2	4
21	Synergic grain boundary segregation and precipitation in W- and W-Mo-containing high-entropy borides. *Journal of the European Ceramic Society*, **2021**, 41, 5380-5387	6	4
20	Segregation competition and complexion coexistence within a polycrystalline grain boundary network. *Acta Materialia*, **2021**, 218, 117213	8.4	4
19	Emergence of directionally-anisotropic mobility in a faceted ▯11 <110> tilt grain boundary in Cu. *Modelling and Simulation in Materials Science and Engineering*, **2020**, 28, 055008	2	3
18	Shuffling mode competition leads to directionally anisotropic mobility of faceted ▯11 boundaries in fcc metals. *Physical Review Materials*, **2020**, 4,	3.2	3
17	Interdependent Linear Complexion Structure and Dislocation Mechanics in Fe-Ni. *Crystals*, **2020**, 10, 1128	2.3	2
16	Amorphous complexions alter the tensile failure of nanocrystalline Cu-Zr alloys. *Materialia*, **2021**, 17, 101134	3.2	2
15	Manipulating deformation mechanisms with Y alloying of Mg. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2021**, 817, 141373	5.3	2
14	Alloying induces directionally-dependent mobility and alters migration mechanisms of faceted grain boundaries. *Scripta Materialia*, **2021**, 194, 113643	5.6	2
13	Dislocation-induced Y segregation at basal-prismatic interfaces in Mg. *Computational Materials Science*, **2021**, 188, 110241	3.2	2
12	Concurrent transitions in wear rate and surface microstructure in nanocrystalline Ni-W. *Materialia*, **2018**, 4, 38-46	3.2	2
11	Microstructure, mechanical properties, and ionic conductivity of a solid-state electrolyte prepared using binderless laser powder bed fusion. *Journal of Materials Research*,1	2.5	2
10	Multi-principal element grain boundaries: Stabilizing nanocrystalline grains with thick amorphous complexions. *Journal of Materials Research*, **2022**, 37, 554-566	2.5	1

9	Growth and structural transitions of core-shell nanorods in nanocrystalline Al-Ni-Y. *Scripta Materialia*, **2022**, 211, 114502	5.6	1
8	Current trends in nanomechanical testing research. *Journal of Materials Research*, **2021**, 36, 2133-2136	2.5	1
7	Pronounced grain boundary network evolution in nanocrystalline Cu subjected to large cyclic strains. *Journal of Materials Research*, **2019**, 34, 35-47	2.5	1
6	In situ mechanical testing of an Al matrix composite to investigate compressive plasticity and failure on multiple length scales. *Journal of Materials Science*, **2021**, 56, 8259-8275	4.3	1
5	Solid-state dewetting instability in thermally-stable nanocrystalline binary alloys. *Materialia*, **2020**, 9, 100618	3.2	0
4	Visualization and validation of twin nucleation and early-stage growth in magnesium.. *Nature Communications*, **2022**, 13, 20	17.4	0
3	Room Temperature Deformation-induced Solute Segregation and its Impact on Twin Boundary Mobility in a Mg-Y Alloy. *Scripta Materialia*, **2022**, 209, 114375	5.6	0
2	Rejuvenation of Disorder-Containing Materials. *Structural Integrity*, **2019**, 360-361	0.2	
1	Amorphous Intergranular Film Effect on the Texture and Structural Evolution During Cold-Rolling of Nanocrystalline Ni�r Alloys. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2022**, 53, 1025-1034	2.3	