

Timothy J Rupert

List of Publications by Year in Descending Order

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Version: 2024-04-24

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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	Multi-principal element grain boundaries: Stabilizing nanocrystalline grains with thick amorphous complexions. <i>Journal of Materials Research</i> , 2022 , 37, 554-566	2.5	1
79	Visualization and validation of twin nucleation and early-stage growth in magnesium.. <i>Nature Communications</i> , 2022 , 13, 20	17.4	0
78	Amorphous Intergranular Film Effect on the Texture and Structural Evolution During Cold-Rolling of Nanocrystalline Ni ₄ Zr Alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2022 , 53, 1025-1034	2.3	
77	Growth and structural transitions of core-shell nanorods in nanocrystalline Al-Ni-Y. <i>Scripta Materialia</i> , 2022 , 211, 114502	5.6	1
76	Room Temperature Deformation-induced Solute Segregation and its Impact on Twin Boundary Mobility in a Mg-Y Alloy. <i>Scripta Materialia</i> , 2022 , 209, 114375	5.6	0
75	Bulk nanocrystalline Al alloys with hierarchical reinforcement structures via grain boundary segregation and complexion formation. <i>Acta Materialia</i> , 2021 , 221, 117394	8.4	5
74	Critical cooling rates for amorphous-to-ordered complexion transitions in Cu-rich nanocrystalline alloys. <i>Acta Materialia</i> , 2021 , 206, 116650	8.4	8
73	Amorphous complexions alter the tensile failure of nanocrystalline Cu-Zr alloys. <i>Materialia</i> , 2021 , 17, 101134	3.2	2
72	Current trends in nanomechanical testing research. <i>Journal of Materials Research</i> , 2021 , 36, 2133-2136	2.5	1
71	Manipulating deformation mechanisms with Y alloying of Mg. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021 , 817, 141373	5.3	2
70	Accommodation and formation of {10012} twins in Mg-Y alloys. <i>Acta Materialia</i> , 2021 , 204, 116514	8.4	7
69	Alloying induces directionally-dependent mobility and alters migration mechanisms of faceted grain boundaries. <i>Scripta Materialia</i> , 2021 , 194, 113643	5.6	2
68	Dislocation-induced Y segregation at basal-prismatic interfaces in Mg. <i>Computational Materials Science</i> , 2021 , 188, 110241	3.2	2
67	Disordered interfaces enable high temperature thermal stability and strength in a nanocrystalline aluminum alloy. <i>Acta Materialia</i> , 2021 , 215, 116973	8.4	7
66	Synergic grain boundary segregation and precipitation in W- and W-Mo-containing high-entropy borides. <i>Journal of the European Ceramic Society</i> , 2021 , 41, 5380-5387	6	4
65	Bulk high-entropy hexaborides. <i>Journal of the European Ceramic Society</i> , 2021 , 41, 5775-5781	6	5
64	Segregation competition and complexion coexistence within a polycrystalline grain boundary network. <i>Acta Materialia</i> , 2021 , 218, 117213	8.4	4

63	In situ mechanical testing of an Al matrix composite to investigate compressive plasticity and failure on multiple length scales. <i>Journal of Materials Science</i> , 2021 , 56, 8259-8275	4.3	1
62	Embracing the Chaos: Alloying Adds Stochasticity to Twin Embryo Growth. <i>Physical Review Letters</i> , 2020 , 125, 205503	7.4	4
61	Emergence of directionally-anisotropic mobility in a faceted $\Sigma 1$ <110> tilt grain boundary in Cu. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2020 , 28, 055008	2	3
60	Toughening magnesium with gradient twin meshes. <i>Acta Materialia</i> , 2020 , 195, 468-481	8.4	6
59	Disconnection-mediated twin embryo growth in Mg. <i>Acta Materialia</i> , 2020 , 194, 437-451	8.4	11
58	Amorphous intergranular films mitigate radiation damage in nanocrystalline Cu-Zr. <i>Acta Materialia</i> , 2020 , 186, 341-354	8.4	10
57	Solid-state dewetting instability in thermally-stable nanocrystalline binary alloys. <i>Materialia</i> , 2020 , 9, 100618	3.2	0
56	Grain Boundary Complexion Transitions. <i>Annual Review of Materials Research</i> , 2020 , 50, 465-492	12.8	39
55	Shuffling mode competition leads to directionally anisotropic mobility of faceted $\Sigma 1$ boundaries in fcc metals. <i>Physical Review Materials</i> , 2020 , 4,	3.2	3
54	Revealing the deformation mechanisms for room-temperature compressive superplasticity in nanocrystalline magnesium. <i>Materialia</i> , 2020 , 11, 100731	3.2	4
53	Prediction of a wide variety of linear complexions in face centered cubic alloys. <i>Acta Materialia</i> , 2020 , 185, 129-141	8.4	7
52	Influence and comparison of contaminate partitioning on nanocrystalline stability in sputter-deposited and ball-milled Cu ₂ Zr alloys. <i>Journal of Materials Science</i> , 2020 , 55, 16758-16779	4.3	5
51	Interdependent Linear Complexion Structure and Dislocation Mechanics in Fe-Ni. <i>Crystals</i> , 2020 , 10, 1128.3	2.3	2
50	Heavy ion irradiation effects on GaN/AlGaN high electron mobility transistor failure at off-state. <i>Microelectronics Reliability</i> , 2019 , 102, 113493	1.2	15
49	Thick amorphous complexion formation and extreme thermal stability in ternary nanocrystalline Cu-Zr-Hf alloys. <i>Acta Materialia</i> , 2019 , 179, 172-182	8.4	18
48	Twin formation from a twin boundary in Mg during in-situ nanomechanical testing. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019 , 759, 142-153	5.3	11
47	In Situ High-Cycle Fatigue Reveals Importance of Grain Boundary Structure in Nanocrystalline Cu-Zr. <i>Jom</i> , 2019 , 71, 1221-1232	2.1	10
46	Linear Complexions: Metastable Phase Formation and Coexistence at Dislocations. <i>Physical Review Letters</i> , 2019 , 122, 126102	7.4	10

45	Rejuvenation of Disorder-Containing Materials. <i>Structural Integrity</i> , 2019 , 360-361	0.2	
44	Amorphous Intergranular Films Enable the Creation of Bulk Nanocrystalline Cu ₂ Zr with Full Density. <i>Advanced Engineering Materials</i> , 2019 , 21, 1900333	3.5	6
43	Combined effects of nonmetallic impurities and planned metallic dopants on grain boundary energy and strength. <i>Acta Materialia</i> , 2019 , 166, 113-125	8.4	16
42	Pronounced grain boundary network evolution in nanocrystalline Cu subjected to large cyclic strains. <i>Journal of Materials Research</i> , 2019 , 34, 35-47	2.5	1
41	Atomistic modeling of interfacial segregation and structural transitions in ternary alloys. <i>Journal of Materials Science</i> , 2019 , 54, 3975-3993	4.3	11
40	Identifying interatomic potentials for the accurate modeling of interfacial segregation and structural transitions. <i>Computational Materials Science</i> , 2018 , 148, 10-20	3.2	10
39	Grain boundary complexions and the strength of nanocrystalline metals: Dislocation emission and propagation. <i>Acta Materialia</i> , 2018 , 151, 100-111	8.4	44
38	Uncovering the influence of common nonmetallic impurities on the stability and strength of a Σ (310) grain boundary in Cu. <i>Acta Materialia</i> , 2018 , 148, 110-122	8.4	31
37	Reversed compressive yield anisotropy in magnesium with microlaminated structure. <i>Acta Materialia</i> , 2018 , 146, 12-24	8.4	20
36	Concurrent transitions in wear rate and surface microstructure in nanocrystalline Ni-W. <i>Materialia</i> , 2018 , 4, 38-46	3.2	2
35	A high-entropy alloy with hierarchical nanoprecipitates and ultrahigh strength. <i>Science Advances</i> , 2018 , 4, eaat8712	14.3	142
34	Dislocation-assisted linear complexion formation driven by segregation. <i>Scripta Materialia</i> , 2018 , 154, 25-29	5.6	9
33	Amorphous complexions enable a new region of high temperature stability in nanocrystalline Ni-W. <i>Scripta Materialia</i> , 2018 , 154, 49-53	5.6	36
32	Femtosecond laser rejuvenation of nanocrystalline metals. <i>Acta Materialia</i> , 2018 , 156, 183-195	8.4	9
31	Spatial variation of short-range order in amorphous intergranular complexions. <i>Computational Materials Science</i> , 2017 , 131, 62-68	3.2	8
30	Effect of growth temperature on the synthesis of carbon nanotube arrays and amorphous carbon for thermal applications. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2017 , 214, 1600852	1.6	17
29	The formation and characterization of large twin related domains. <i>Acta Materialia</i> , 2017 , 129, 500-509	8.4	32
28	Nanocrystalline Al-Mg with extreme strength due to grain boundary doping. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017 , 696, 400-406	5.3	30

27	Formation of ordered and disordered interfacial films in immiscible metal alloys. <i>Scripta Materialia</i> , 2017 , 130, 91-95	5.6	16
26	Materials selection rules for amorphous complexion formation in binary metallic alloys. <i>Acta Materialia</i> , 2017 , 140, 196-205	8.4	56
25	Forces to pierce cuticle of tarsi and material properties determined by nanoindentation: The Achilles heel of bed bugs. <i>Biology Open</i> , 2017 , 6, 1541-1551	2.2	4
24	Mechanisms of near-surface structural evolution in nanocrystalline materials during sliding contact. <i>Physical Review Materials</i> , 2017 , 1,	3.2	6
23	Plasticity-induced restructuring of a nanocrystalline grain boundary network. <i>Acta Materialia</i> , 2016 , 120, 1-13	8.4	33
22	Effect of grain boundary character on segregation-induced structural transitions. <i>Physical Review B</i> , 2016 , 93,	3.3	40
21	Manipulating the interfacial structure of nanomaterials to achieve a unique combination of strength and ductility. <i>Nature Communications</i> , 2016 , 7, 10802	17.4	146
20	Grain Boundary Character Distributions in Nanocrystalline Metals Produced by Different Processing Routes. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016 , 47, 1389-1403	2.3	12
19	Amorphous intergranular films act as ultra-efficient point defect sinks during collision cascades. <i>Scripta Materialia</i> , 2016 , 110, 37-40	5.6	22
18	The role of complexions in metallic nano-grain stability and deformation. <i>Current Opinion in Solid State and Materials Science</i> , 2016 , 20, 257-267	12	47
17	Amorphous intergranular films as toughening structural features. <i>Acta Materialia</i> , 2015 , 89, 205-214	8.4	76
16	High-Temperature Stability and Grain Boundary Complexion Formation in a Nanocrystalline Cu-Zr Alloy. <i>Jom</i> , 2015 , 67, 2788-2801	2.1	61
15	Disruption of thermally-stable nanoscale grain structures by strain localization. <i>Scientific Reports</i> , 2015 , 5, 10663	4.9	13
14	Modelling wrinkling interactions produced by patterned defects in metal thin films. <i>Extreme Mechanics Letters</i> , 2015 , 4, 175-185	3.9	6
13	Nanocrystalline grain boundary engineering: Increasing β boundary fraction in pure Ni with thermomechanical treatments. <i>Acta Materialia</i> , 2015 , 86, 43-54	8.4	30
12	Quantitative tracking of grain structure evolution in a nanocrystalline metal during cyclic loading. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2015 , 23, 025005	2	23
11	Tracking Microstructure of Crystalline Materials: A Post-Processing Algorithm for Atomistic Simulations. <i>Jom</i> , 2014 , 66, 417-428	2.1	30
10	Solid solution strengthening and softening due to collective nanocrystalline deformation physics. <i>Scripta Materialia</i> , 2014 , 81, 44-47	5.6	23

9	Damage nucleation from repeated dislocation absorption at a grain boundary. <i>Computational Materials Science</i> , 2014 , 93, 206-209	3.2	34
8	Emergence of localized plasticity and failure through shear banding during microcompression of a nanocrystalline alloy. <i>Acta Materialia</i> , 2014 , 65, 326-337	8.4	24
7	Abrasive wear response of nanocrystalline NiW alloys across the Hall-Petch breakdown. <i>Wear</i> , 2013 , 298-299, 120-126	3.5	51
6	Strain localization in a nanocrystalline metal: Atomic mechanisms and the effect of testing conditions. <i>Journal of Applied Physics</i> , 2013 , 114, 033527	2.5	54
5	Mechanically driven grain boundary relaxation: a mechanism for cyclic hardening in nanocrystalline Ni. <i>Philosophical Magazine Letters</i> , 2012 , 92, 20-28	1	46
4	Grain boundary relaxation strengthening of nanocrystalline NiW alloys. <i>Journal of Materials Research</i> , 2012 , 27, 1285-1294	2.5	120
3	Enhanced solid solution effects on the strength of nanocrystalline alloys. <i>Acta Materialia</i> , 2011 , 59, 1619-1631	1.631	161
2	Sliding wear of nanocrystalline NiW: Structural evolution and the apparent breakdown of Archard scaling. <i>Acta Materialia</i> , 2010 , 58, 4137-4148	8.4	226
1	Microstructure, mechanical properties, and ionic conductivity of a solid-state electrolyte prepared using binderless laser powder bed fusion. <i>Journal of Materials Research</i> , 1	2.5	2