Michael J Demkowicz

List of Publications by Year
in descending order

81	3,741	186265 28	128289 60
papers	citations	h-index	g-index

81	81	81	2581
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Defect-interface interactions. Progress in Materials Science, 2015, 74, 125-210.	32.8	450
2	Radiation damage tolerant nanomaterials. Materials Today, 2013, 16, 443-449.	14.2	423
3	Design of Radiation Tolerant Materials Via Interface Engineering. Advanced Materials, 2013, 25, 6975-6979.	21.0	307
4	Effect of grain boundary character on sink efficiency. Acta Materialia, 2012, 60, 6341-6351.	7.9	290
5	The dual role of coherent twin boundaries in hydrogen embrittlement. Nature Communications, 2015, 6, 6164.	12.8	173
6	The role of interface structure in controlling high helium concentrations. Current Opinion in Solid State and Materials Science, 2012, 16, 101-108.	11.5	167
7	Structure, shear resistance and interaction with point defects of interfaces in Cuâ€“Nb nanocomposites synthesized by severe plastic deformation. Acta Materialia, 2011, 59, 7744-7756.	7.9	130
8	Liquidlike atomic environments act as plasticity carriers in amorphous silicon. Physical Review B, 2005, 72, .	3.2	111
9	Arrest of He bubble growth in Cuâ€“Nb multilayer nanocomposites. Scripta Materialia, 2008, 58, 541-544.	5.2	111
10	The influence of â˜3 twin boundaries on the formation of radiation-induced defect clusters in nanotwinned Cu. Journal of Materials Research, 2011, 26, 1666-1675.	2.6	105
11	Structure of Kurdjumovâ€“Sachs interfaces in simulations of a copperâ€“niobium bilayer. Journal of Nuclear Materials, 2008, 372, 45-52.	2.7	93
12	Autocatalytic avalanches of unit inelastic shearing events are the mechanism of plastic deformation in amorphous silicon. Physical Review B, 2005, 72, .	3.2	77
13	Coarsening by network restructuring in model nanoporous gold. Acta Materialia, 2011, 59, 7645-7653.	7.9	76
14	Determining the Burgers vectors and elastic strain energies of interface dislocation arrays using anisotropic elasticity theory. Acta Materialia, 2013, 61, 5172-5187.	7.9	62
15	Mechanisms of He escape during implantation in CuNb multilayer composites. Nuclear Instruments & Methods in Physics Research B, 2007, 261, 524-528.	1.4	61
16	AQUAMI: An open source Python package and GUI for the automatic quantitative analysis of morphologically complex multiphase materials. Computational Materials Science, 2017, 139, 320-329.	3.0	60
17	Radiation response of amorphous metal alloys: Subcascades, thermal spikes and super-quenched zones. Acta Materialia, 2015, 83, 419-430.	7.9	54
18	Irradiation damage of single crystal, coarse-grained, and nanograined copper under helium bombardment at 450 Â°C. Journal of Materials Research, 2013, 28, 2763-2770.	2.6	53

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19	He implantation of bulk Cuâ€“Nb nanocomposites fabricated by accumulated roll bonding. Journal of Nuclear Materials, 2014, 452, 57-60.	2.7	50
20	Crystallographic character of grain boundaries resistant to hydrogen-assisted fracture in Ni-base alloy 725. Nature Communications, 2018, 9, 3386.	12.8	47
21	Adhesion of voids to bimetal interfaces with non-uniform energies. Scientific Reports, 2015, 5, 15428.	3.3	41
22	Self-organization of helium precipitates into elongated channels within metal nanolayers. Science Advances, 2017, 3, eaao2710.	10.3	41
23	Trapping of implanted He at Cu/Nb interfaces measured by neutron reflectometry. Applied Physics Letters, 2011, 98, .	3.3	40
24	Gaining new insights into nanoporous gold by mining and analysis of published images. Scientific Reports, 2018, 8, 6761.	3.3	39
25	Radiation-induced mixing between metals of low solid solubility. Acta Materialia, 2014, 76, 135-150.	7.9	32
26	Hardening due to Interfacial He Bubbles in Nanolayered Composites. Materials Research Letters, 2016, 4, 75-82.	8.7	32
27	Partitioning of elastic distortions at a semicoherent heterophase interface between anisotropic crystals. Acta Materialia, 2015, 82, 234-243.	7.9	30
28	Acquisition of partial grain orientation information using optical microscopy. Acta Materialia, 2017, 123, 70-81.	7.9	30
29	A threshold density of helium bubbles induces a ductile-to-brittle transition at a grain boundary in nickel. Journal of Nuclear Materials, 2020, 533, 152118.	2.7	29
30	Helium Irradiation and Implantation Effects on the Structure of Amorphous Silicon Oxycarbide. Scientific Reports, 2017, 7, 3900.	3.3	28
31	Processing of novel pseudomorphic Cuâ€“Mo hierarchies in thin films. Materials Research Letters, 2019, 7, 1-11.	8.7	26
32	Imaging the in-plane distribution of helium precipitates at a Cu/V interface. Materials Research Letters, 2017, 5, 335-342.	8.7	23
33	A Transmission Electron Microscopy Study of the Effect of Interfaces on Bubble Formation in He-Implanted Cu-Nb Multilayers. Microscopy and Microanalysis, 2012, 18, 152-161.	0.4	22
34	3-D phase-field simulations of self-organized composite morphologies in physical vapor deposited phase-separating binary alloys. Journal of Applied Physics, 2019, 126, 075306.	2.5	21
35	Effect of interface dislocation Burgers vectors on elastic fields in anisotropic bicrystals. Computational Materials Science, 2014, 88, 110-115.	3.0	20
36	Plasma-wall interaction of advanced materials. Nuclear Materials and Energy, 2017, 12, 307-312.	1.3	20

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37	Behavior of Vacancies and Interstitials at Semicoherent Interfaces. Jom, 2013, 65, 374-381.	1.9	19
38	Alloy Design Criteria for Solid Metal Dealloying of Thin Films. Jom, 2017, 69, 2199-2205.	1.9	19
39	The effects of nanoscale confinement on the behavior of metal laminates. Scripta Materialia, 2020, 187, 130-136.	5.2	17
40	The role of thermal spike compactness in radiation-induced disordering and Frenkel pair production in Ni3Al. Scripta Materialia, 2012, 67, 724-727.	5.2	16
41	Morphological stability of Cu-Nb nanocomposites under high-energy collision cascades. Applied Physics Letters, 2013, 103, .	3.3	16
42	A high-throughput technique for determining grain boundary character non-destructively in microstructures with through-thickness grains. Npj Computational Materials, 2016, 2, .	8.7	16
43	Hydrogen reverses the clustering tendency of carbon in amorphous silicon oxycarbide. Scientific Reports, 2015, 5, 13051.	3.3	14
44	Microstructure Evolution and Mechanical Response of Nanolaminate Composites Irradiated with Helium at Elevated Temperatures. Jom, 2017, 69, 2206-2213.	1.9	14
45	Does shape affect shape change at the nanoscale?. MRS Bulletin, 2019, 44, 25-30.	3.5	14
46	Atomistic modeling of radiation-induced disordering and dissolution at a Ni/Ni3Al interface. Journal of Materials Research, 2015, 30, 1456-1463.	2.6	13
47	Inferring grain boundary structureâ€“property relations from effective property measurements. Journal of Materials Science, 2015, 50, 6907-6919.	3.7	13
48	Uniform tensile elongation in Auâ€“Si coreâ€“shell nanowires. Extreme Mechanics Letters, 2016, 8, 151-159.	4.1	13
49	Indentation response of nanoporous gold from atomistic simulations. Journal of Materials Research, 2018, 33, 1382-1390.	2.6	13
50	Rapid and damage-free outgassing of implanted helium from amorphous silicon oxycarbide. Scientific Reports, 2018, 8, 5009.	3.3	13
51	Reaction of amorphous/crystalline SiOC/Fe interfaces by thermal annealing. Acta Materialia, 2017, 135, 61-67.	7.9	12
52	Hydrogen enhances the radiation resistance of amorphous silicon oxycarbides. Acta Materialia, 2017, 136, 415-424.	7.9	12
53	Computing critical energy release rates for fracture in atomistic simulations. Computational Materials Science, 2020, 181, 109738.	3.0	11
54	Measuring Grain Boundary Character Distributions in Ni-Base Alloy 725 Using High-Energy Diffraction Microscopy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 354-361.	2.2	9

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55	Prediction of Spontaneous Plastic Deformation of Irradiated Metallic Glasses due to Thermal Spike-Induced Plasticity. Materials Research Letters, 2014, 2, 221-226.	8.7	8
56	Probing Interfaces in Metals Using Neutron Reflectometry. Metals, 2016, 6, 20.	2.3	8
57	Formation, migration, and clustering energies of interstitial He in Î±-quartz and Î²-cristobalite. Journal of Nuclear Materials, 2016, 479, 224-231.	2.7	8
58	Determining coherent reference states of general semicoherent interfaces. Computational Materials Science, 2016, 118, 297-308.	3.0	7
59	Crack healing in nanocrystalline palladium. Extreme Mechanics Letters, 2016, 8, 208-212.	4.1	7
60	Joining of physical vapor-deposited metal nano-layered composites. Scripta Materialia, 2017, 139, 114-118.	5.2	7
61	Toughening of interface networks through the introduction of weak links. Acta Materialia, 2021, 215, 117090.	7.9	7
62	Preferential corrosion of coherent twin boundaries in pure nickel under cathodic charging. Physical Review Materials, 2019, 3, .	2.4	7
63	AIDA: A tool for exhaustive enumeration of solutions to the quantized Frank-Bilby equation. Computational Materials Science, 2018, 145, 35-47.	3.0	6
64	The relaxed structure of intrinsic dislocation networks in semicoherent interfaces: predictions from anisotropic elasticity theory and comparison with atomistic simulations. Extreme Mechanics Letters, 2019, 28, 50-57.	4.1	5
65	The Effect of Microstructure Morphology on Indentation Response of Ta/Ti Nanocomposite Thin Films. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 5677-5690.	2.2	5
66	Healing of nanocracks by collision cascades in nickel. Journal of Nuclear Materials, 2021, 555, 153124.	2.7	5
67	Faceted He-Filled â€œPancakesâ€•Confined within Nanoscale Metal Layers. Jom, 2020, 72, 145-149.	1.9	4
68	Quantifying surface deformation around micrometer-scale indents by digital image correlation. Journal of Materials Research, 2021, 36, 2277-2290.	2.6	4
69	Surface coverage-limited hydrogen uptake into nickel under cathodic charging. Corrosion Science, 2022, 202, 110280.	6.6	4
70	Distinct driven steady states emerge from diverse initial textures in rolled nanocomposites. Acta Materialia, 2020, 183, 207-215.	7.9	3
71	Vacancy and interstitial interactions with crystal/amorphous, metal/covalent interfaces. Journal of Nuclear Materials, 2020, 539, 152329.	2.7	3
72	Copper-Tantalum Metal Matrix Composites Consolidated from Powder Blends by Severe Plastic Deformation. Metals, 2021, 11, 1010.	2.3	3

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73	Formation of Ni-O-H-S surface phases on cathodically charged Ni. Corrosion Science, 2021, 185, 109424.	6.6	3
74	A â€œfigure of meritâ€•for susceptibility of irradiated amorphous metal alloys to thermal spike-induced plasticity. Acta Materialia, 2016, 102, 251-262.	7.9	2
75	Influence of metal nanocomposite morphology on Helium implantation response. Scripta Materialia, 2020, 177, 229-233.	5.2	2
76	High-density liquid-like component facilitates plastic flow in a model amorphous silicon system. Materials Research Society Symposia Proceedings, 2003, 806, 268.	0.1	1
77	Comparative study of helium bubbles in a Ti-Ta alloy and a Ti/Ta nanocomposite. Philosophical Magazine Letters, 2020, 100, 307-318.	1.2	1
78	Mobility inference of the Cahnâ€“Hilliard equation from a model experiment. Journal of Materials Research, 2021, 36, 2830-2842.	2.6	1
79	Development of a Predictive Wear Model for Grid-to-Rod Fretting in Light Water Nuclear Reactors. , 2013, , 139-158.		1
80	Persistence of negative vacancy and self-interstitial formation energies in atomistic models of amorphous silicon. Physical Review Materials, 2022, 6, .	2.4	1
81	New Horizons for Mechanical Spectroscopy in Materials Science. Jom, 2015, 67, 1830-1831.	1.9	0