

# Michael J Demkowicz

## List of Publications by Year in descending order

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81  
papers

3,741  
citations

186265  
28  
h-index

128289  
60  
g-index

81  
all docs

81  
docs citations

81  
times ranked

2581  
citing authors

#	ARTICLE	IF	CITATIONS
1	Persistence of negative vacancy and self-interstitial formation energies in atomistic models of amorphous silicon. <i>Physical Review Materials</i> , 2022, 6, .	2.4	1
2	Surface coverage-limited hydrogen uptake into nickel under cathodic charging. <i>Corrosion Science</i> , 2022, 202, 110280.	6.6	4
3	Copper-Tantalum Metal Matrix Composites Consolidated from Powder Blends by Severe Plastic Deformation. <i>Metals</i> , 2021, 11, 1010.	2.3	3
4	Mobility inference of the Cahn-Hilliard equation from a model experiment. <i>Journal of Materials Research</i> , 2021, 36, 2830-2842.	2.6	1
5	Formation of Ni-O-H-S surface phases on cathodically charged Ni. <i>Corrosion Science</i> , 2021, 185, 109424.	6.6	3
6	Toughening of interface networks through the introduction of weak links. <i>Acta Materialia</i> , 2021, 215, 117090.	7.9	7
7	Healing of nanocracks by collision cascades in nickel. <i>Journal of Nuclear Materials</i> , 2021, 555, 153124.	2.7	5
8	Quantifying surface deformation around micrometer-scale indents by digital image correlation. <i>Journal of Materials Research</i> , 2021, 36, 2277-2290.	2.6	4
9	Influence of metal nanocomposite morphology on Helium implantation response. <i>Scripta Materialia</i> , 2020, 177, 229-233.	5.2	2
10	Faceted He-Filled "Pancakes" Confined within Nanoscale Metal Layers. <i>Jom</i> , 2020, 72, 145-149.	1.9	4
11	Distinct driven steady states emerge from diverse initial textures in rolled nanocomposites. <i>Acta Materialia</i> , 2020, 183, 207-215.	7.9	3
12	The Effect of Microstructure Morphology on Indentation Response of Ta/Ti Nanocomposite Thin Films. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2020, 51, 5677-5690.	2.2	5
13	Comparative study of helium bubbles in a Ti-Ta alloy and a Ti-Ta nanocomposite. <i>Philosophical Magazine Letters</i> , 2020, 100, 307-318.	1.2	1
14	Vacancy and interstitial interactions with crystal/amorphous, metal/covalent interfaces. <i>Journal of Nuclear Materials</i> , 2020, 539, 152329.	2.7	3
15	Computing critical energy release rates for fracture in atomistic simulations. <i>Computational Materials Science</i> , 2020, 181, 109738.	3.0	11
16	The effects of nanoscale confinement on the behavior of metal laminates. <i>Scripta Materialia</i> , 2020, 187, 130-136.	5.2	17
17	A threshold density of helium bubbles induces a ductile-to-brittle transition at a grain boundary in nickel. <i>Journal of Nuclear Materials</i> , 2020, 533, 152118.	2.7	29
18	3-D phase-field simulations of self-organized composite morphologies in physical vapor deposited phase-separating binary alloys. <i>Journal of Applied Physics</i> , 2019, 126, 075306.	2.5	21

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19	The relaxed structure of intrinsic dislocation networks in semicoherent interfaces: predictions from anisotropic elasticity theory and comparison with atomistic simulations. <i>Extreme Mechanics Letters</i> , 2019, 28, 50-57.	4.1	5
20	Does shape affect shape change at the nanoscale?. <i>MRS Bulletin</i> , 2019, 44, 25-30.	3.5	14
21	Processing of novel pseudomorphic Cu-Mo hierarchies in thin films. <i>Materials Research Letters</i> , 2019, 7, 1-11.	8.7	26
22	Preferential corrosion of coherent twin boundaries in pure nickel under cathodic charging. <i>Physical Review Materials</i> , 2019, 3, .	2.4	7
23	Indentation response of nanoporous gold from atomistic simulations. <i>Journal of Materials Research</i> , 2018, 33, 1382-1390.	2.6	13
24	Rapid and damage-free outgassing of implanted helium from amorphous silicon oxycarbide. <i>Scientific Reports</i> , 2018, 8, 5009.	3.3	13
25	AIDA: A tool for exhaustive enumeration of solutions to the quantized Frank-Bilby equation. <i>Computational Materials Science</i> , 2018, 145, 35-47.	3.0	6
26	Gaining new insights into nanoporous gold by mining and analysis of published images. <i>Scientific Reports</i> , 2018, 8, 6761.	3.3	39
27	Crystallographic character of grain boundaries resistant to hydrogen-assisted fracture in Ni-base alloy 725. <i>Nature Communications</i> , 2018, 9, 3386.	12.8	47
28	Imaging the in-plane distribution of helium precipitates at a Cu/V interface. <i>Materials Research Letters</i> , 2017, 5, 335-342.	8.7	23
29	Reaction of amorphous/crystalline SiOC/Fe interfaces by thermal annealing. <i>Acta Materialia</i> , 2017, 135, 61-67.	7.9	12
30	Measuring Grain Boundary Character Distributions in Ni-Base Alloy 725 Using High-Energy Diffraction Microscopy. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2017, 48, 354-361.	2.2	9
31	Plasma-wall interaction of advanced materials. <i>Nuclear Materials and Energy</i> , 2017, 12, 307-312.	1.3	20
32	AQUAMI: An open source Python package and GUI for the automatic quantitative analysis of morphologically complex multiphase materials. <i>Computational Materials Science</i> , 2017, 139, 320-329.	3.0	60
33	Microstructure Evolution and Mechanical Response of Nanolaminate Composites Irradiated with Helium at Elevated Temperatures. <i>Jom</i> , 2017, 69, 2206-2213.	1.9	14
34	Alloy Design Criteria for Solid Metal Dealloying of Thin Films. <i>Jom</i> , 2017, 69, 2199-2205.	1.9	19
35	Hydrogen enhances the radiation resistance of amorphous silicon oxycarbides. <i>Acta Materialia</i> , 2017, 136, 415-424.	7.9	12
36	Self-organization of helium precipitates into elongated channels within metal nanolayers. <i>Science Advances</i> , 2017, 3, eaao2710.	10.3	41

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37	Helium Irradiation and Implantation Effects on the Structure of Amorphous Silicon Oxycarbide. Scientific Reports, 2017, 7, 3900.	3.3	28
38	Joining of physical vapor-deposited metal nano-layered composites. Scripta Materialia, 2017, 139, 114-118.	5.2	7
39	Acquisition of partial grain orientation information using optical microscopy. Acta Materialia, 2017, 123, 70-81.	7.9	30
40	Probing Interfaces in Metals Using Neutron Reflectometry. Metals, 2016, 6, 20.	2.3	8
41	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
42	Determining coherent reference states of general semicoherent interfaces. Computational Materials Science, 2016, 118, 297-308.	3.0	7
43	Uniform tensile elongation in Au-Si core-shell nanowires. Extreme Mechanics Letters, 2016, 8, 151-159.	4.1	13
44	Formation, migration, and clustering energies of interstitial He in $\alpha$ -quartz and $\beta$ -cristobalite. Journal of Nuclear Materials, 2016, 479, 224-231.	2.7	8
45	Crack healing in nanocrystalline palladium. Extreme Mechanics Letters, 2016, 8, 208-212.	4.1	7
46	Hardening due to Interfacial He Bubbles in Nanolayered Composites. Materials Research Letters, 2016, 4, 75-82.	8.7	32
47	A "figure of merit" for susceptibility of irradiated amorphous metal alloys to thermal spike-induced plasticity. Acta Materialia, 2016, 102, 251-262.	7.9	2
48	Adhesion of voids to bimetal interfaces with non-uniform energies. Scientific Reports, 2015, 5, 15428.	3.3	41
49	Hydrogen reverses the clustering tendency of carbon in amorphous silicon oxycarbide. Scientific Reports, 2015, 5, 13051.	3.3	14
50	New Horizons for Mechanical Spectroscopy in Materials Science. Jom, 2015, 67, 1830-1831.	1.9	0
51	Defect-interface interactions. Progress in Materials Science, 2015, 74, 125-210.	32.8	450
52	The dual role of coherent twin boundaries in hydrogen embrittlement. Nature Communications, 2015, 6, 6164.	12.8	173
53	Atomistic modeling of radiation-induced disordering and dissolution at a Ni/Ni <sub>3</sub> Al interface. Journal of Materials Research, 2015, 30, 1456-1463.	2.6	13
54	Inferring grain boundary structure-property relations from effective property measurements. Journal of Materials Science, 2015, 50, 6907-6919.	3.7	13

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55	Radiation response of amorphous metal alloys: Subcascades, thermal spikes and super-quenched zones. <i>Acta Materialia</i> , 2015, 83, 419-430.	7.9	54
56	Partitioning of elastic distortions at a semicoherent heterophase interface between anisotropic crystals. <i>Acta Materialia</i> , 2015, 82, 234-243.	7.9	30
57	Prediction of Spontaneous Plastic Deformation of Irradiated Metallic Glasses due to Thermal Spike-Induced Plasticity. <i>Materials Research Letters</i> , 2014, 2, 221-226.	8.7	8
58	He implantation of bulk Cu-Nb nanocomposites fabricated by accumulated roll bonding. <i>Journal of Nuclear Materials</i> , 2014, 452, 57-60.	2.7	50
59	Effect of interface dislocation Burgers vectors on elastic fields in anisotropic bicrystals. <i>Computational Materials Science</i> , 2014, 88, 110-115.	3.0	20
60	Radiation-induced mixing between metals of low solid solubility. <i>Acta Materialia</i> , 2014, 76, 135-150.	7.9	32
61	Behavior of Vacancies and Interstitials at Semicoherent Interfaces. <i>Jom</i> , 2013, 65, 374-381.	1.9	19
62	Irradiation damage of single crystal, coarse-grained, and nanograined copper under helium bombardment at 450 Å°C. <i>Journal of Materials Research</i> , 2013, 28, 2763-2770.	2.6	53
63	Radiation damage tolerant nanomaterials. <i>Materials Today</i> , 2013, 16, 443-449.	14.2	423
64	Determining the Burgers vectors and elastic strain energies of interface dislocation arrays using anisotropic elasticity theory. <i>Acta Materialia</i> , 2013, 61, 5172-5187.	7.9	62
65	Design of Radiation Tolerant Materials Via Interface Engineering. <i>Advanced Materials</i> , 2013, 25, 6975-6979.	21.0	307
66	Morphological stability of Cu-Nb nanocomposites under high-energy collision cascades. <i>Applied Physics Letters</i> , 2013, 103, .	3.3	16
67	Development of a Predictive Wear Model for Grid-to-Rod Fretting in Light Water Nuclear Reactors. , 2013, , 139-158.		1
68	A Transmission Electron Microscopy Study of the Effect of Interfaces on Bubble Formation in He-Implanted Cu-Nb Multilayers. <i>Microscopy and Microanalysis</i> , 2012, 18, 152-161.	0.4	22
69	The role of interface structure in controlling high helium concentrations. <i>Current Opinion in Solid State and Materials Science</i> , 2012, 16, 101-108.	11.5	167
70	Effect of grain boundary character on sink efficiency. <i>Acta Materialia</i> , 2012, 60, 6341-6351.	7.9	290
71	The role of thermal spike compactness in radiation-induced disordering and Frenkel pair production in Ni3Al. <i>Scripta Materialia</i> , 2012, 67, 724-727.	5.2	16
72	Coarsening by network restructuring in model nanoporous gold. <i>Acta Materialia</i> , 2011, 59, 7645-7653.	7.9	76

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73	Structure, shear resistance and interaction with point defects of interfaces in Cu–Nb nanocomposites synthesized by severe plastic deformation. <i>Acta Materialia</i> , 2011, 59, 7744-7756.	7.9	130
74	Trapping of implanted He at Cu/Nb interfaces measured by neutron reflectometry. <i>Applied Physics Letters</i> , 2011, 98, .	3.3	40
75	The influence of $\sim 3$ twin boundaries on the formation of radiation-induced defect clusters in nanotwinned Cu. <i>Journal of Materials Research</i> , 2011, 26, 1666-1675.	2.6	105
76	Structure of Kurdjumov–Sachs interfaces in simulations of a copper–niobium bilayer. <i>Journal of Nuclear Materials</i> , 2008, 372, 45-52.	2.7	93
77	Arrest of He bubble growth in Cu–Nb multilayer nanocomposites. <i>Scripta Materialia</i> , 2008, 58, 541-544.	5.2	111
78	Mechanisms of He escape during implantation in CuNb multilayer composites. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2007, 261, 524-528.	1.4	61
79	Liquidlike atomic environments act as plasticity carriers in amorphous silicon. <i>Physical Review B</i> , 2005, 72, .	3.2	111
80	Autocatalytic avalanches of unit inelastic shearing events are the mechanism of plastic deformation in amorphous silicon. <i>Physical Review B</i> , 2005, 72, .	3.2	77
81	High-density liquid-like component facilitates plastic flow in a model amorphous silicon system. <i>Materials Research Society Symposia Proceedings</i> , 2003, 806, 268.	0.1	1