

Nathan A Mara

List of Publications by Citations

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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.

130
papers

5,250
citations

41
h-index

68
g-index

133
ext. papers

5,949
ext. citations

5.9
avg, IF

5.7
L-index

#	Paper	IF	Citations
130	Radiation damage tolerant nanomaterials. <i>Materials Today</i> , 2013 , 16, 443-449	21.8	328
129	Design of radiation tolerant materials via interface engineering. <i>Advanced Materials</i> , 2013 , 25, 6975-9	24	248
128	High-strength and thermally stable bulk nanolayered composites due to twin-induced interfaces. <i>Nature Communications</i> , 2013 , 4, 1696	17.4	238
127	Deformability of ultrahigh strength 5nm Cu/Nb nanolayered composites. <i>Applied Physics Letters</i> , 2008 , 92, 231901	3.4	206
126	Bulk texture evolution of Cu/Nb nanolamellar composites during accumulative roll bonding. <i>Acta Materialia</i> , 2012 , 60, 1576-1586	8.4	167
125	Suppression of irradiation hardening in nanoscale V/Ag multilayers. <i>Acta Materialia</i> , 2011 , 59, 6331-6340	8.4	139
124	Mechanism for shear banding in nanolayered composites. <i>Applied Physics Letters</i> , 2010 , 97, 021909	3.4	134
123	Compressive flow behavior of Al/TiN multilayers at nanometer scale layer thickness. <i>Acta Materialia</i> , 2011 , 59, 3804-3816	8.4	120
122	Texture evolution via combined slip and deformation twinning in rolled silver/copper cast eutectic nanocomposite. <i>International Journal of Plasticity</i> , 2011 , 27, 121-146	7.6	117
121	Emergence of stable interfaces under extreme plastic deformation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, 4386-90	11.5	111
120	Structure-Property-Functionality of Bimetal Interfaces. <i>Jom</i> , 2012 , 64, 1192-1207	2.1	110
119	A study of microstructure-driven strain localizations in two-phase polycrystalline HCP/BCC composites using a multi-scale model. <i>International Journal of Plasticity</i> , 2015 , 74, 35-57	7.6	108
118	Interface-driven microstructure development and ultra high strength of bulk nanostructured Cu-Nb multilayers fabricated by severe plastic deformation. <i>Journal of Materials Research</i> , 2013 , 28, 1799-1812	2.5	106
117	Texture evolution in two-phase Zr/Nb lamellar composites during accumulative roll bonding. <i>International Journal of Plasticity</i> , 2014 , 57, 16-28	7.6	97
116	Plastic instability mechanisms in bimetallic nanolayered composites. <i>Acta Materialia</i> , 2014 , 79, 282-291	8.4	86
115	Deformation twinning mechanisms from bimetal interfaces as revealed by in situ straining in the TEM. <i>Acta Materialia</i> , 2012 , 60, 5858-5866	8.4	83
114	Shear band formation and ductility in bulk metallic glass. <i>Philosophical Magazine</i> , 2005 , 85, 2671-2687	1.6	83

113	Review: effect of bimetal interface structure on the mechanical behavior of Cu/Nb fcc/bcc nanolayered composites. <i>Journal of Materials Science</i> , 2014 , 49, 6497-6516	4.3	82
112	Anomalous Basal Slip Activity in Zirconium under High-strain Deformation. <i>Materials Research Letters</i> , 2013 , 1, 133-140	7.4	80
111	Interface-facilitated deformation twinning in copper within submicron Ag/Cu multilayered composites. <i>Scripta Materialia</i> , 2011 , 64, 1083-1086	5.6	74
110	Deformation and failure of shocked bulk Cu/Nb nanolaminates. <i>Acta Materialia</i> , 2014 , 63, 150-161	8.4	73
109	Atomic-level study of twin nucleation from face-centered-cubic/body-centered-cubic interfaces in nanolamellar composites. <i>Applied Physics Letters</i> , 2012 , 100, 011911	3.4	71
108	Size effects in the superelastic response of Ni ₅₄ Fe ₁₉ Ga ₂₇ shape memory alloy pillars with a two stage martensitic transformation. <i>Acta Materialia</i> , 2012 , 60, 5670-5685	8.4	66
107	Modeling the texture evolution of Cu/Nb layered composites during rolling. <i>International Journal of Plasticity</i> , 2013 , 49, 71-84	7.6	65
106	Bulk texture evolution of nanolamellar Zr/Nb composites processed via accumulative roll bonding. <i>Acta Materialia</i> , 2015 , 92, 97-108	8.4	64
105	Experimentally quantifying critical stresses associated with basal slip and twinning in magnesium using micropillars. <i>Acta Materialia</i> , 2017 , 135, 411-421	8.4	59
104	Strong and ductile nanostructured Cu-carbon nanotube composite. <i>Applied Physics Letters</i> , 2009 , 95, 071907	3.4	56
103	Twinnability of bimetal interfaces in nanostructured composites. <i>Materials Research Letters</i> , 2013 , 1, 89-95	7.4	53
102	Transmission electron microscopy study of the deformation behavior of Cu/Nb and Cu/Ni nanoscale multilayers during nanoindentation. <i>Journal of Materials Research</i> , 2009 , 24, 1291-1302	2.5	53
101	Structure and Property of Interfaces in ARB Cu/Nb Laminated Composites. <i>Jom</i> , 2012 , 64, 1208-1217	2.1	52
100	Tensile behavior and flow stress anisotropy of accumulative roll bonded Cu-Nb nanolaminates. <i>Applied Physics Letters</i> , 2016 , 108, 051903	3.4	51
99	Effects of helium implantation on the tensile properties and microstructure of Ni ₇₃ P ₂₇ metallic glass nanostructures. <i>Nano Letters</i> , 2014 , 14, 5176-83	11.5	50
98	Processing Parameter Influence on Texture and Microstructural Evolution in Cu-Nb Multilayer Composites Fabricated via Accumulative Roll Bonding. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014 , 45, 2192-2208	2.3	50
97	Microcompression study of Al-Nb nanoscale multilayers. <i>Journal of Materials Research</i> , 2012 , 27, 592-598	2.5	50
96	Strain fields induced by kink band propagation in Cu-Nb nanolaminate composites. <i>Acta Materialia</i> , 2017 , 133, 303-315	8.4	49

95	Engineering interface structures and thermal stabilities via SPD processing in bulk nanostructured metals. <i>Scientific Reports</i> , 2014 , 4, 4226	4.9	49
94	The critical role of grain orientation and applied stress in nanoscale twinning. <i>Nature Communications</i> , 2014 , 5, 3806	17.4	48
93	Microstructural evolution of nanolayered Cu/Nb composites subjected to high-pressure torsion. <i>Acta Materialia</i> , 2014 , 72, 178-191	8.4	47
92	Effect of double ion implantation and irradiation by Ar and He ions on nano-indentation hardness of metallic alloys. <i>Journal of Nuclear Materials</i> , 2013 , 438, 108-115	3.3	46
91	High-temperature mechanical behavior/microstructure correlation of Cu/Nb nanoscale multilayers. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008 , 493, 274-282	5.3	45
90	Epitaxial superconducting FeMoN films grown by a chemical solution method. <i>Journal of the American Chemical Society</i> , 2011 , 133, 20735-7	16.4	43
89	Shear band formation and ductility of metallic glasses. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2004 , 383, 219-223	5.3	41
88	He implantation of bulk Cu/Nb nanocomposites fabricated by accumulated roll bonding. <i>Journal of Nuclear Materials</i> , 2014 , 452, 57-60	3.3	40
87	Chemical solution deposition of epitaxial carbide films. <i>Journal of the American Chemical Society</i> , 2010 , 132, 2516-7	16.4	39
86	In situ x-ray investigation of freestanding nanoscale Cu/Nb multilayers under tensile load. <i>Applied Physics Letters</i> , 2009 , 94, 031906	3.4	39
85	Optimum high temperature strength of two-dimensional nanocomposites. <i>APL Materials</i> , 2013 , 1, 052103	3.7	38
84	Strong, Ductile, and Thermally Stable bcc-Mg Nanolaminates. <i>Scientific Reports</i> , 2017 , 7, 8264	4.9	37
83	Adhesion of voids to bimetal interfaces with non-uniform energies. <i>Scientific Reports</i> , 2015 , 5, 15428	4.9	37
82	Cooperative grain boundary sliding in nanocrystalline materials. <i>Philosophical Magazine</i> , 2006 , 86, 5797-5804	5.0	37
81	The effects of decreasing layer thickness on the high temperature mechanical behavior of Cu/Nb nanoscale multilayers. <i>Thin Solid Films</i> , 2007 , 515, 3241-3245	2.2	36
80	Interface-dominant multilayers fabricated by severe plastic deformation: Stability under extreme conditions. <i>Current Opinion in Solid State and Materials Science</i> , 2015 , 19, 265-276	12	35
79	Misfit dislocation patterns of Mg-Nb interfaces. <i>Acta Materialia</i> , 2017 , 126, 552-563	8.4	33
78	Mechanical Properties of Anhydrous and Hydrated Uric Acid Crystals. <i>Chemistry of Materials</i> , 2018 , 30, 3798-3805	9.6	33

77	Enhanced Plasticity via Kinking in Cubic Metallic Nanolaminates. <i>Advanced Engineering Materials</i> , 2015 , 17, 781-785	3.5	32
76	Suppression of shear banding in high-strength Cu/Mo nanocomposites with hierarchical bicontinuous intertwined structures. <i>Materials Research Letters</i> , 2018 , 6, 184-190	7.4	32
75	Influence of slip and twinning on the crystallographic stability of bimetal interfaces in nanocomposites under deformation. <i>Acta Materialia</i> , 2014 , 72, 137-147	8.4	32
74	A wedge-mounting technique for nanoscale electron backscatter diffraction. <i>Journal of Applied Physics</i> , 2013 , 113, 094304	2.5	31
73	Superplasticity and cooperative grain boundary sliding in nanocrystalline Ni ₃ Al. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007 , 463, 238-244	5.3	31
72	Grain boundary sliding in nanomaterials at elevated temperatures. <i>Journal of Materials Science</i> , 2007 , 42, 1433-1438	4.3	30
71	Spherical nanoindentation of proton irradiated 304 stainless steel: A comparison of small scale mechanical test techniques for measuring irradiation hardening. <i>Journal of Nuclear Materials</i> , 2017 , 493, 368-379	3.3	28
70	Indentation Fracture Response of Al _{0.5} TiN Nanolaminates. <i>Materials Research Letters</i> , 2013 , 1, 102-108	7.4	27
69	Hardening due to Interfacial He Bubbles in Nanolayered Composites. <i>Materials Research Letters</i> , 2016 , 4, 75-82	7.4	26
68	Probing nanoscale damage gradients in ion-irradiated metals using spherical nanoindentation. <i>Scientific Reports</i> , 2017 , 7, 11918	4.9	26
67	Deformation response of AgCu interfaces investigated by in situ and ex situ TEM straining and MD simulations. <i>Acta Materialia</i> , 2017 , 138, 212-223	8.4	26
66	Microstructure and texture evolution in Mg/Nb layered materials made by accumulative roll bonding. <i>International Journal of Plasticity</i> , 2020 , 125, 1-26	7.6	26
65	Quantifying the mechanical effects of He, W and He + W ion irradiation on tungsten with spherical nanoindentation. <i>Journal of Materials Science</i> , 2018 , 53, 5296-5316	4.3	25
64	Mechanical properties of metal-ceramic nanolaminates: Effect of constraint and temperature. <i>Acta Materialia</i> , 2018 , 142, 37-48	8.4	25
63	Processing and Deformation Behavior of Bulk Cu ₃ Nb Nanolaminates. <i>Metallography, Microstructure, and Analysis</i> , 2014 , 3, 470-476	1.1	25
62	Micromechanical and in situ shear testing of Al ₂ SiC nanolaminate composites in a transmission electron microscope (TEM). <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015 , 621, 229-235	5.3	24
61	Morphology and porosity of nanoporous Au thin films formed by dealloying of Au ₂ Si ₁₁ . <i>Journal of Applied Physics</i> , 2012 , 112, 094320	2.5	23
60	Room temperature deformation mechanisms of Mg/Nb nanolayered composites. <i>Journal of Materials Research</i> , 2018 , 33, 1311-1332	2.5	23

59	Spray-Dried Multiscale Nano-biocomposites Containing Living Cells. <i>ACS Nano</i> , 2015 , 9, 6961-77	16.7	22
58	Investigations of orientation and length scale effects on micromechanical responses in polycrystalline zirconium using spherical nanoindentation. <i>Scripta Materialia</i> , 2016 , 113, 241-245	5.6	21
57	Effects of He radiation on cavity distribution and hardness of bulk nanolayered Cu-Nb composites. <i>Journal of Nuclear Materials</i> , 2017 , 487, 311-316	3.3	19
56	Slip transmission of high angle grain boundaries in body-centered cubic metals: Micropillar compression of pure Ta single and bi-crystals. <i>Acta Materialia</i> , 2018 , 156, 356-368	8.4	19
55	Interface-Driven Plasticity in Metal/Ceramic Nanolayered Composites: Direct Validation of Multiscale Deformation Modeling via In Situ Indentation in TEM. <i>Jom</i> , 2016 , 68, 143-150	2.1	18
54	An interface facet driven Rayleigh instability in high-aspect-ratio bimetallic nanolayered composites. <i>Applied Physics Letters</i> , 2014 , 105, 111901	3.4	18
53	Ultrahigh Strength and Ductility of Cu-Nb Nanolayered Composites. <i>Materials Science Forum</i> , 2009 , 633-634, 647-653	0.4	18
52	Mechanical response of Zr-based metallic glass. <i>Journal of Non-Crystalline Solids</i> , 2003 , 317, 169-175	3.9	18
51	The Suppression of Instabilities via Biphase Interfaces During Bulk Fabrication of Nanograined Zr. <i>Materials Research Letters</i> , 2015 , 3, 50-57	7.4	16
50	Plasticity at really diminished length scales. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007 , 463, 8-13	5.3	16
49	Residual strain and texture in free-standing nanoscale Cu-Nb multilayers. <i>Journal of Applied Physics</i> , 2007 , 102, 083514	2.5	14
48	Meso-Scale Modeling the Orientation and Interface Stability of Cu/Nb-Layered Composites by Rolling. <i>Jom</i> , 2013 , 65, 431-442	2.1	13
47	Role of interfaces on the trapping of He in 2D and 3D Cu/Nb nanocomposites. <i>Journal of Nuclear Materials</i> , 2015 , 466, 36-42	3.3	12
46	Microstructure Evolution and Mechanical Response of Nanolaminate Composites Irradiated with Helium at Elevated Temperatures. <i>Jom</i> , 2017 , 69, 2206-2213	2.1	12
45	In situ frustum indentation of nanoporous copper thin films. <i>International Journal of Plasticity</i> , 2017 , 98, 139-155	7.6	12
44	Mechanically controlling the reversible phase transformation from zinc blende to wurtzite in AlN. <i>Materials Research Letters</i> , 2017 , 5, 426-432	7.4	11
43	A multi-scale model for texture development in Zr/Nb nanolayered composites processed by accumulative roll bonding. <i>IOP Conference Series: Materials Science and Engineering</i> , 2014 , 63, 012170	0.4	11
42	Aligned carbon nanotubes sandwiched in epitaxial NbC film for enhanced superconductivity. <i>Nanoscale</i> , 2012 , 4, 2268-71	7.7	11

41	High-Throughput Nanomechanical Screening of Phase-Specific and Temperature-Dependent Hardness in Al _x FeCrNiMn High-Entropy Alloys. <i>Jom</i> , 2019 , 71, 3368-3377	2.1	10
40	Interface-Driven Plasticity: The Presence of an Interface Affected Zone in Metallic Lamellar Composites. <i>Advanced Engineering Materials</i> , 2015 , 17, 109-114	3.5	10
39	Synthesis and mechanical behavior of nanoporous nanotwinned copper. <i>Applied Physics Letters</i> , 2013 , 103, 241907	3.4	10
38	Recrystallization and Grain Growth in Accumulative Roll-Bonded Metal Composites. <i>Jom</i> , 2015 , 67, 2810-2819	2.1	9
37	Local Mechanical Property Evolution During High Strain-Rate Deformation of Tantalum. <i>Journal of Dynamic Behavior of Materials</i> , 2016 , 2, 511-520	1.8	9
36	Interfacially Driven Deformation Twinning in Bulk Ag-Cu Composites. <i>Jom</i> , 2012 , 64, 1218-1226	2.1	9
35	Multiscale Model for the Extreme Piezoresistivity in Silicone/Nickel Nanostrand Nanocomposites. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2011 , 42, 3898-3906	2.3	9
34	A comparison of adiabatic shear bands in wrought and additively manufactured 316L stainless steel using nanoindentation and electron backscatter diffraction. <i>Journal of Materials Science</i> , 2020 , 55, 1738-1752	4.7	9
33	Quantifying heterogeneous deformation in grain boundary regions on shock loaded tantalum using spherical and sharp tip nanoindentation. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018 , 737, 373-382	5.3	9
32	Identifying Deformation and Strain Hardening Behaviors of Nanoscale Metallic Multilayers Through Nano-wear Testing. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016 , 47, 1083-1095	2.3	8
31	Maintaining nano-lamellar microstructure in friction stir welding (FSW) of accumulative roll bonded (ARB) Cu-Nb nano-lamellar composites (NLC). <i>Journal of Materials Science and Technology</i> , 2018 , 34, 92-101	1.1	7
30	Structure and properties of pseudomorphically transformed bcc Mg in Mg/Nb multilayered nanolaminates studied using synchrotron X-ray diffraction. <i>Journal of Applied Physics</i> , 2019 , 126, 025302	2.5	7
29	Microstructure and mechanical properties of co-sputtered Al-SiC composites. <i>Materials and Design</i> , 2019 , 168, 107670	8.1	7
28	Nanomechanical mapping and strain rate sensitivity of microcrystalline cellulose. <i>Journal of Materials Research</i> , 2021 , 36, 2251-2265	2.5	6
27	Temperature-dependent mechanical behavior of three-dimensionally ordered macroporous tungsten. <i>Journal of Materials Research</i> , 2020 , 35, 2556-2566	2.5	5
26	Characterization of nickel nanostrand nanocomposites through dielectric spectroscopy and nanoindentation. <i>Polymer Engineering and Science</i> , 2013 , 53, 2666-2673	2.3	5
25	Microcantilever bend testing and finite element simulations of HIP-ed interface-free bulk Al and Al/Al HIP bonded interfaces. <i>Philosophical Magazine</i> , 2013 , 93, 2749-2758	1.6	5
24	Interface Facilitated Reorientation of Mg Nanolayers in Mg-Nb Nanolaminates. <i>Jom</i> , 2019 , 71, 1215-1220	2.1	5

23	Processing of Dilute Mg ₂ Ni _{1-x} Al _x Alloy/Nb Multilayers by Accumulative Roll Bonding. <i>Advanced Engineering Materials</i> , 2020 , 22, 1900673	3.5	5
22	Mechanical behavior of rare-earth orthophosphates near the monazite/xenotime boundary characterized by nanoindentation. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017 , 691, 203-210	5.3	4
21	Bond Characterization of Plasma Sprayed Zirconium on Uranium Alloy by Microcantilever Testing. <i>Journal of Thermal Spray Technology</i> , 2013 , 22, 233-241	2.5	4
20	Phase-field modeling of the interactions between an edge dislocation and an array of obstacles. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022 , 389, 114426	5.7	3
19	Tribological performance of monolithic copper thin films during nanowear. <i>Wear</i> , 2018 , 394-395, 50-59	3.5	3
18	Microstructure and local mechanical property evolution during high strain-rate deformation of tantalum. <i>EPJ Web of Conferences</i> , 2015 , 94, 02023	0.3	2
17	Layer Stability and Material Properties of Friction-Stir Welded Cu ₃ Nb Nanolamellar Composite Plates. <i>Materials Research Letters</i> , 2014 , 2, 227-232	7.4	2
16	The Influence of Rolling Schedule on the Dynamic Properties of Accumulatively Roll Bonded Nano-Layered Cu-Nb. <i>Key Engineering Materials</i> , 2014 , 622-623, 1031-1040	0.4	2
15	Effects of Phase Purity and Pore Reinforcement on Mechanical Behavior of NU-1000 and Silica-Infiltrated NU-1000 Metal-Organic Frameworks. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 49971-49981	9.5	2
14	Hierarchical and heterogeneous multiphase metallic nanomaterials and laminates. <i>MRS Bulletin</i> , 2021 , 46, 236-243	3.2	2
13	High temperature nanoindentation of Cu ₃ TiN nanolaminates. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021 , 804, 140522	5.3	2
12	In situ TEM Investigation of Mechanically Induced Phase Transformations in Nanoscale Composites. <i>Microscopy and Microanalysis</i> , 2018 , 24, 1828-1829	0.5	1
11	Mechanical Behavior of Nanostructured Materials. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2010 , 41, 777-777	2.3	1
10	Spherical Nanoindentation Stress-Strain Analysis of Ion-Irradiated Tungsten 2019 , 617		1
9	Quantifying physical parameters to predict brittle/ ductile behavior. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021 , 808, 140899	5.3	1
8	3D Periodic and Interpenetrating Tungsten-Silicon Oxycarbide Nanocomposites Designed for Mechanical Robustness. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 32126-32135	9.5	1
7	Algorithms for Nanoindentation Strain Rate Jump Testing and Analysis. <i>Experimental Mechanics</i> , 2021 , 61, 1031-1040	2.6	0
6	High-Throughput Nanoindentation Mapping of Additively Manufactured T91 Steel. <i>Jom</i> , 2022 , 74, 1469-1476	14.76	0

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- 4 Elevated Temperature Mechanical Properties of Devitrified Metallic Glass. *Materials Research Society Symposia Proceedings*, **2004**, 821, 191
- 3 Nano goes the distance. *Nature Materials*, **2021**, 20, 1456-1458 27
- 2 Spherical Nanoindentation Stress-Strain Analysis of Ion-Irradiated Tungsten. *Minerals, Metals and Materials Series*, **2019**, 617-635 0.3
- 1 Nanomechanical testing in drug delivery: theory, applications, and emerging trends.. *Advanced Drug Delivery Reviews*, **2022**, 114167 18.5