

Rodney J Mccabe

List of Publications by Year in descending order

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81
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71102

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docs citations

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times ranked

2295
citing authors

#	ARTICLE	IF	CITATIONS
1	Crystal mechanics-based thermo-elastic constitutive modeling of orthorhombic uranium using generalized spherical harmonics and first-order bounding theories. Journal of Nuclear Materials, 2022, 560, 153472.	2.7	11
2	Kink mechanism in Cu/Nb nanolaminates explored by in situ pillar compression. Acta Materialia, 2022, 237, 118150.	7.9	17
3	An automated procedure built on MTEX for reconstructing deformation twin hierarchies from electron backscattered diffraction datasets of heavily twinned microstructures. Materials Characterization, 2021, 171, 110808.	4.4	6
4	Three-dimensional atomic scale characterization of $\langle 111 \rangle$ twin boundaries in titanium. Acta Materialia, 2021, 208, 116707.	2.7	6
5	Revealing the effect of local stresses on twin growth mechanisms in titanium using synchrotron X-ray diffraction. Acta Materialia, 2021, 221, 117359.	7.9	20
6	Atomistic and phase field simulations of three dimensional interactions of $\langle 100 \rangle$ twins with grain boundaries in Mg: Twin transmission and dislocation emission. Materialia, 2021, 20, 101247.	2.7	6
7	Evolution of microstructures and properties leading to layer instabilities during accumulative roll bonding of Fe Cu, Fe Ag, and Fe Al. Materials and Design, 2021, 212, 110204.	7.0	12
8	Microstructure and texture evolution in Mg/Nb layered materials made by accumulative roll bonding. International Journal of Plasticity, 2020, 125, 1-26.	8.8	50
9	Formation and stability of long basal-prismatic facets in Mg. Acta Materialia, 2020, 185, 119-128.	7.9	30
10	Characteristic boundaries associated with three-dimensional twins in hexagonal metals. Science Advances, 2020, 6, eaaz2600.	10.3	24
11	Experimental verification of a crystal plasticity-based simulation framework for predicting microstructure and geometric shape changes: Application to bending and Taylor impact testing of Zr. International Journal of Impact Engineering, 2020, 144, 103655.	5.0	11
12	Predicting deformation behavior of δ -uranium during tension, compression, load reversal, rolling, and sheet forming using elasto-plastic, multi-level crystal plasticity coupled with finite elements. Journal of the Mechanics and Physics of Solids, 2020, 138, 103924.	4.8	34
13	A generalized spherical harmonics-based procedure for the interpolation of partial datasets of orientation distributions to enable crystal mechanics-based simulations. Materialia, 2019, 6, 100328.	2.7	28
14	Modelling recrystallization textures driven by intragranular fluctuations implemented in the viscoplastic self-consistent formulation. Acta Materialia, 2019, 164, 530-546.	7.9	57
15	OpenMP and MPI implementations of an elasto-viscoplastic fast Fourier transform-based micromechanical solver for fast crystal plasticity modeling. Advances in Engineering Software, 2018, 126, 46-60.	7.9	85
16	OpenMP and MPI implementations of an elasto-viscoplastic fast Fourier transform-based micromechanical solver for fast crystal plasticity modeling. Advances in Engineering Software, 2018, 126, 46-60.	3.8	39
17	A Graph Theory-Based Automated Twin Recognition Technique for Electron Backscatter Diffraction Analysis. Integrating Materials and Manufacturing Innovation, 2018, 7, 12-27.	2.6	13
18	Modeling of intragranular misorientation and grain fragmentation in polycrystalline materials using the viscoplastic self-consistent formulation. International Journal of Plasticity, 2018, 109, 193-211.	8.8	46

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19	Spectral database constitutive representation within a spectral micromechanical solver for computationally efficient polycrystal plasticity modelling. <i>Computational Mechanics</i> , 2018, 61, 89-104.	4.0	31
20	Predicting intragranular misorientation distributions in polycrystalline metals using the viscoplastic self-consistent formulation. <i>Acta Materialia</i> , 2017, 140, 398-410.	7.9	43
21	Texture formation in orthorhombic alpha-uranium under simple compression and rolling to high strains. <i>Journal of Nuclear Materials</i> , 2016, 473, 143-156.	2.7	66
22	Transitioning rate sensitivities across multiple length scales: Microstructure-property relationships in the Taylor cylinder impact test on zirconium. <i>International Journal of Plasticity</i> , 2016, 84, 138-159.	8.8	47
23	Origin of texture development in orthorhombic uranium. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 665, 108-124.	5.6	44
24	Average intragranular misorientation trends in polycrystalline materials predicted by a viscoplastic self-consistent approach. <i>Acta Materialia</i> , 2016, 104, 228-236.	7.9	60
25	Anisotropic modeling of structural components using embedded crystal plasticity constitutive laws within finite elements. <i>International Journal of Mechanical Sciences</i> , 2016, 105, 227-238.	6.7	74
26	Effect of martensitic phase transformation on the behavior of 304 austenitic stainless steel under tension. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 649, 174-183.	5.6	63
27	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	13
28	A statistical analysis of the influence of microstructure and twin-twin junctions on twin nucleation and twin growth in Zr. <i>Acta Materialia</i> , 2015, 95, 399-410.	7.9	49
29	The Suppression of Instabilities via Biphase Interfaces During Bulk Fabrication of Nanograined Zr. <i>Materials Research Letters</i> , 2015, 3, 50-57.	8.7	18
30	Strain rate and temperature effects on the selection of primary and secondary slip and twinning systems in HCP Zr. <i>Acta Materialia</i> , 2015, 88, 55-73.	7.9	216
31	Explicit incorporation of deformation twins into crystal plasticity finite element models. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2015, 295, 396-413.	6.6	133
32	Microstructural evolution of a uranium-10wt.% molybdenum alloy for nuclear reactor fuels. <i>Journal of Nuclear Materials</i> , 2015, 465, 784-792.	2.7	31
33	A new implementation of the spectral crystal plasticity framework in implicit finite elements. <i>Mechanics of Materials</i> , 2015, 84, 114-126.	3.2	72
34	Spectral database solutions to elasto-viscoplasticity within finite elements: Application to a cobalt-based FCC superalloy. <i>International Journal of Plasticity</i> , 2015, 70, 151-165.	8.8	62
35	Bulk texture evolution of nanolamellar Zr-Nb composites processed via accumulative roll bonding. <i>Acta Materialia</i> , 2015, 92, 97-108.	7.9	79
36	Predicting Texture Evolution in Ta and Ta-10W Alloys Using Polycrystal Plasticity. <i>Jom</i> , 2015, 67, 2670-2674.	1.9	33

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37	Microstructure effects on the recrystallization of low-symmetry alpha-uranium. <i>Journal of Nuclear Materials</i> , 2015, 465, 189-195.	2.7	33
38	Recrystallization and Grain Growth in Accumulative Roll-Bonded Metal Composites. <i>Jom</i> , 2015, 67, 2810-2819.	1.9	9
39	Co-zone {110} Twin Interaction in Magnesium Single Crystal. <i>Materials Research Letters</i> , 2014, 2, 82-88.	8.7	89
40	Observations of the Atomic Structure of Tensile and Compressive Twin Boundaries and Twin-Twin Interactions in Zirconium. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 5891-5897.	2.2	46
41	Toward understanding twin-twin interactions in hcp metals: Utilizing multiscale techniques to characterize deformation mechanisms in magnesium. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2014, 613, 365-371.	5.6	63
42	In-Situ TEM Observation of Twinning and Detwinning During Cyclic Loading in Mg. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 36-40.	2.2	64
43	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.	2.2	67
44	A strain-rate and temperature dependent constitutive model for BCC metals incorporating non-Schmid effects: Application to tantalum-tungsten alloys. <i>International Journal of Plasticity</i> , 2014, 62, 93-104.	8.8	143
45	The critical role of grain orientation and applied stress in nanoscale twinning. <i>Nature Communications</i> , 2014, 5, 3806.	12.8	62
46	Influence of slip and twinning on the crystallographic stability of bimetal interfaces in nanocomposites under deformation. <i>Acta Materialia</i> , 2014, 72, 137-147.	7.9	40
47	Deformation behavior of the cobalt-based superalloy Haynes 25: Experimental characterization and crystal plasticity modeling. <i>Acta Materialia</i> , 2014, 63, 162-168.	7.9	86
48	Twin-twin interactions in magnesium. <i>Acta Materialia</i> , 2014, 77, 28-42.	7.9	243
49	Engineering Interface Structures and Thermal Stabilities via SPD Processing in Bulk Nanostructured Metals. <i>Scientific Reports</i> , 2014, 4, 4226.	3.3	65
50	Variability in EBSD statistics for textured zirconium. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013, 574, 157-162.	5.6	21
51	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.	2.6	142
52	Modeling mechanical response and texture evolution of α -uranium as a function of strain rate and temperature using polycrystal plasticity. <i>International Journal of Plasticity</i> , 2013, 43, 70-84.	8.8	118
53	Integration of self-consistent polycrystal plasticity with dislocation density based hardening laws within an implicit finite element framework: Application to low-symmetry metals. <i>Journal of the Mechanics and Physics of Solids</i> , 2013, 61, 2034-2046.	4.8	146
54	Filiform-mode hydride corrosion of uranium surfaces. <i>Journal of Nuclear Materials</i> , 2013, 442, 106-115.	2.7	30

#	ARTICLE	IF	CITATIONS
55	Nd-Mo-borosilicate glass-ceramic: Synthesis, characterization and response to ionizing radiation. <i>Journal of Nuclear Materials</i> , 2013, 437, 216-221.	2.7	13
56	Modeling the texture evolution of Cu/Nb layered composites during rolling. <i>International Journal of Plasticity</i> , 2013, 49, 71-84.	8.8	72
57	Quantification of strain and orientation measurement error in cross-correlation EBSD in hexagonal close-packed materials. <i>Scripta Materialia</i> , 2012, 67, 818-821.	5.2	7
58	Anisotropic stress-strain response and microstructure evolution of textured δ -uranium. <i>Acta Materialia</i> , 2012, 60, 702-715.	7.9	109
59	Powder Synthesis and Hot Pressing of a LiTaO_3 Ceramic. <i>Journal of the American Ceramic Society</i> , 2012, 95, 2820-2826.	3.8	13
60	Effect of microstructure on the nucleation of deformation twins in polycrystalline high-purity magnesium: A multi-scale modeling study. <i>Journal of the Mechanics and Physics of Solids</i> , 2011, 59, 988-1003.	4.8	291
61	Automatic twin statistics from electron backscattered diffraction data. <i>Journal of Microscopy</i> , 2010, 238, 218-229.	1.8	36
62	Detwinning of High-Purity Zirconium: In-Situ Neutron Diffraction Experiments. <i>Experimental Mechanics</i> , 2010, 50, 125-133.	2.0	38
63	Deformation of wrought uranium: Experiments and modeling. <i>Acta Materialia</i> , 2010, 58, 5447-5459.	7.9	53
64	Establishing reactor operations from uranium targets used for the production of plutonium. <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 2009, 282, 573-579.	1.5	6
65	Quantitative analysis of deformation twinning in zirconium. <i>International Journal of Plasticity</i> , 2009, 25, 454-472.	8.8	133
66	Deformation twinning and twinning related fracture in coarse-grained δ -uranium. <i>Journal of Nuclear Materials</i> , 2009, 392, 105-113.	2.7	23
67	Origin of dislocations within tensile and compressive twins in pure textured Zr. <i>Acta Materialia</i> , 2009, 57, 305-315.	7.9	51
68	Nucleation and growth of twins in Zr: A statistical study. <i>Acta Materialia</i> , 2009, 57, 6047-6056.	7.9	249
69	Temperature and direction dependence of internal strain and texture evolution during deformation of uranium. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2009, 512, 67-75.	5.6	39
70	Nuclear, chemical, and physical characterization of nuclear materials. <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 2008, 276, 467-473.	1.5	34
71	EBSD and FIB/TEM examination of shape memory effect deformation structures in $\sim 14\text{at.}\%$ Nb. <i>Acta Materialia</i> , 2008, 56, 2638-2648.	7.9	29
72	Exploring the dislocation/twin interactions in zirconium. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007, 463, 122-127.	5.6	56

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73	Analysis of recrystallized volume fractions in uranium using electron backscatter diffraction. <i>Journal of Microscopy</i> , 2006, 223, 33-39.	1.8	34
74	Role of twinning in the hardening response of zirconium during temperature reloads. <i>Acta Materialia</i> , 2006, 54, 2887-2896.	7.9	140
75	Effects of texture, temperature and strain on the deformation modes of zirconium. <i>Philosophical Magazine</i> , 2006, 86, 3595-3611.	1.6	96
76	Experimentally determined content of a geometrically necessary dislocation boundary in copper. <i>Acta Materialia</i> , 2004, 52, 705-714.	7.9	32
77	Dislocation motion in thin Cu foils: a comparison between computer simulations and experiment. <i>Acta Materialia</i> , 2004, 52, 1535-1542.	7.9	25
78	A Single-Tilt TEM Stereomicroscopy Technique for Crystalline Materials. <i>Microscopy and Microanalysis</i> , 2003, 9, 29-35.	0.4	7
79	Creep of tin, Sb-solution-strengthened tin, and SbSn-precipitate-strengthened tin. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2002, 33, 1531-1539.	2.2	95
80	Unexpected transient creep behavior of tin alloys strengthened by high volume fractions of SbSn. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2002, 33, 575-580.	2.2	4
81	High creep resistance tin-based alloys for soldering applications. <i>Journal of Electronic Materials</i> , 2002, 31, 1276-1282.	2.2	19