David T Fullwood

List of Publications by Year
in descending order

94 papers	3,046 citations	218592 26 h-index	175177 52 g-index
94 all docs	94 docs citations	94 times ranked	2172 citing authors

#	Article	IF	Citations
1	Determining Grain Boundary Position and Geometry from EBSD Data: Limits of Accuracy. Microscopy and Microanalysis, 2022, 28, 96-108.	0.2	3
2	Accurate Prediction of Knee Angles during Open-Chain Rehabilitation Exercises Using a Wearable Array of Nanocomposite Stretch Sensors. Sensors, 2022, 22, 2499.	2.1	6
3	Computationally efficient barycentric interpolation of large grain boundary octonion point sets. MethodsX, 2022, 9, 101731.	0.7	0
4	Accounting for Viscoelasticity When Interpreting Nano-Composite High-Deflection Strain Gauges. Sensors, 2022, 22, 5239.	2.1	1
5	Phase determination in dual phase steels via HREBSDâ€based tetragonality mapping. Journal of Microscopy, 2021, 282, 60-72.	0.8	3
6	Coupling kinetic Monte Carlo and finite element methods to model the strain path sensitivity of the isothermal stress-assisted martensite nucleation in TRIP-assisted steels. Mechanics of Materials, 2021, 154, 103707.	1.7	5
7	Optical measurement of voids in situ during infusion of carbon reinforcements. Journal of Composite Materials, 2021, 55, 775-786.	1.2	3
8	Comparison of EBSD, DIC, AFM, and ECCI for active slip system identification in deformed Ti-7Al. Materials Characterization, 2021, 173, 110941.	1.9	20
9	Grain boundary structure-property model inference using polycrystals: The underdetermined case. Acta Materialia, 2021, 209, 116769.	3.8	4
10	Measuring simulated hydrogen diffusion in symmetric tilt nickel grain boundaries and examining the relevance of the Borisov relationship for individual boundary diffusion. Acta Materialia, 2021, 212, 116882.	3.8	14
11	Inference and uncertainty propagation of GB structure-property models: H diffusivity in [100] tilt GBs in Ni. Acta Materialia, 2021, 215, 116967.	3.8	5
12	Micromechanical origins of remarkable elongation-to-fracture in AHSS TRIP steels via continuous bending under tension. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 825, 141876.	2.6	5
13	Five degree-of-freedom property interpolation of arbitrary grain boundaries via Voronoi fundamental zone framework. Computational Materials Science, 2021, 200, 110756.	1.4	9
14	Grain boundary structureâ€“property model inference using polycrystals: the overdetermined case. Journal of Materials Science, 2020, 55, 1562-1576.	1.7	4
15	An investigation of geometrically necessary dislocations and back stress in large grained tantalum via EBSD and CPFEM. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 772, 138704.	2.6	30
16	A predictive strain-gradient model with no undetermined constants or length scales. Journal of the Mechanics and Physics of Solids, 2020, 145, 104178.	2.3	15
17	Predicting vertical ground reaction force during running using novel piezoresponsive sensors and accelerometry. Journal of Sports Sciences, 2020, 38, 1844-1858.	1.0	14
18	Slip band characteristics in the presence of grain boundaries in nickel-based superalloy. Acta Materialia, 2020, 193, 229-238.	3.8	27

#	Article	IF	Citations
19	The role of crystallographic orientations on heterogeneous deformation in a zirconium alloy: A combined experimental and modeling study. International Journal of Plasticity, 2020, 133, 102785.	4.1	41
20	Oxidation behavior of interstitial free steel: The defining role of substrate crystallographic texture. Acta Materialia, 2020, 190, 43-57.	3.8	17
21	Digital Image Correlation of Forescatter Detector Images for Simultaneous Strain and Orientation Mapping. Microscopy and Microanalysis, 2020, 26, 641-652.	0.2	5
22	Nanoparticle orientation distribution analysis and design for polymeric piezoresistive sensors. Sensors and Actuators A: Physical, 2020, 303, 111851.	2.0	7
23	Interplay of dislocation substructure and elastic strain evolution in additively manufactured Inconel 625. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 785, 139380.	2.6	18
24	The effects of voids in quasi-static indentation of resin-infused reinforced polymers. Journal of Composite Materials, 2019, 53, 4399-4410.	1.2	6
25	Atomistic survey of grain boundary-dislocation interactions in FCC nickel. Computational Materials Science, 2019, 164, 171-185.	1.4	27
26	Percolation analysis for estimating the maximum size of particles passing through nanosphere membranes. Physical Review E, 2019, 99, 022904.	0.8	6
27	Functional Data Analyses of Gait Data Measured Using In-Shoe Sensors. Statistics in Biosciences, 2019, 11, 288-313.	0.6	1
28	Modeling of trans-grain twin transmission in AZ31 via a neighborhood-based viscoplastic self-consistent model. International Journal of Plasticity, 2019, 117, 21-32.	4.1	26
29	Materials selection of flexible open-cell foams in energy absorption applications. Materials and Design, 2018, 137, 414-421.	3.3	23
30	Improved twin detection via tracking of individual Kikuchi band intensity of EBSD patterns. Ultramicroscopy, 2018, 185, 5-14.	0.8	6
31	A Novel Method to Characterize Walking and Running Energy Expenditure. Journal for the Measurement of Physical Behaviour, 2018, 1, 100-107.	0.5	2
32	Resolving pseudosymmetry in Î³-TiAl using cross-correlation electron backscatter diffraction with dynamically simulated reference patterns. Journal of Applied Crystallography, 2018, 51, 655-669.	1.9	10
33	Effect of strain path on forming limits and retained austenite transformation in Q&P 1180 steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2018, 734, 192-199.	2.6	7
34	Inverse Piezoresistive Nanocomposite Sensors for Identifying Human Sitting Posture. Sensors, 2018, 18, 1745.	2.1	14
35	Residual Stress Characterization on the Mesoscale in Additive Manufacturing. Microscopy and Microanalysis, 2018, 24, 968-969.	0.2	0
36	A step towards intelligent EBSD microscopy: machineâ€learning prediction of twin activity in MgAZ31. Journal of Microscopy, 2018, 272, 67-78.	0.8	2

#	Article	IF	Citations
37	Comparison of dislocation characterization by electron channeling contrast imaging and cross-correlation electron backscattered diffraction. Ultramicroscopy, 2018, 184, 125-133.	0.8	28
38	An RVE procedure for micromechanical prediction of mechanical behavior of dual-phase steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 695, 101-111.	2.6	40
39	Estimation of 3D Ground Reaction Force Using Nanocomposite Piezo-Responsive Foam Sensors During Walking. Annals of Biomedical Engineering, 2017, 45, 2122-2134.	1.3	28
40	Microstructure Correlation with Formability for Biaxial Stretching of Magnesium Alloy AZ31B at Mildly Elevated Temperatures. Jom, 2017, 69, 907-914.	0.9	6
41	Influence of Noise-Generating Factors on Cross-Correlation Electron Backscatter Diffraction (EBSD) Measurement of Geometrically Necessary Dislocations (GNDs). Microscopy and Microanalysis, 2017, 23, 460-471.	0.2	18
42	Variability of non-Schmid effects in grain boundary dislocation nucleation criteria. Acta Materialia, 2017, 124, 588-597.	3.8	24
43	Nano-Composite Foam Sensor System in Football Helmets. Annals of Biomedical Engineering, 2017, 45, 2742-2749.	1.3	13
44	Comparison of Dislocation Mapping Using Electron Channeling Contrast Imaging and Cross-Correlation Electron Backscattered Diffraction. Microscopy and Microanalysis, 2017, 23, 546-547.	0.2	0
45	High-resolution computed tomography in resin infused woven carbon fibre composites with voids. Composites Science and Technology, 2016, 131, 12-21.	3.8	50
46	Ductility of Advanced High-Strength Steel in the Presence of a Sheared Edge. Jom, 2016, 68, 1839-1849.	0.9	12
47	Insights into twinning in Mg AZ31: A combined EBSD and machine learning study. Computational Materials Science, 2016, 124, 353-363.	1.4	32
48	Performance of Dynamically Simulated Reference Patterns for Cross-Correlation Electron Backscatter Diffraction. Microscopy and Microanalysis, 2016, 22, 789-802.	0.2	23
49	Vibration monitoring via nano-composite piezoelectric foam bushings. Smart Materials and Structures, 2016, 25, 115013.	1.8	3
50	The effect of length scale on the determination of geometrically necessary dislocations via EBSD continuum dislocation microscopy. Ultramicroscopy, 2016, 164, 1-10.	0.8	49
51	Resolving geometrically necessary dislocation density onto individual dislocation types using EBSD-based continuum dislocation microscopy. International Journal of Plasticity, 2016, 76, 231-243.	4.1	62
52	Analysis of tractionâ€free assumption in highâ€resolution EBSD measurements. Journal of Microscopy, 2015, 260, 73-85.	0.8	27
53	Improving Spatial Detection of Twins Achieved by Measuring Individual Kikuchi Band Intensity in EBSD Patterns. Microscopy and Microanalysis, 2015, 21, 1669-1670.	0.2	0
54	Evolution of nano-junctions in piezoresistive nanostrand composites. Composites Part B: Engineering, 2015, 72, 45-52.	5.9	8

#	Article	IF	Citations
55	Piezoresistive in-situ strain sensing of composite laminate structures. Composites Part B: Engineering, 2015, 69, 534-541.	5.9	26
56	Validation of kinematically simulated pattern HR-EBSD for measuring absolute strains and lattice tetragonality. Materials Characterization, 2015, 107, 270-277.	1.9	40
57	Nucleation and propagation of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mrow><mml:mo stretchy="false">{</mml:mo><mml:mn>1</mml:mn><mml:mspace width="0.12em" /><mml:mn>0</mml:mn><mml:mspace width="0.12em" /><mml:mover accent="true"><mml:mrow><mml:mn>1</mml:mn></mml:mrow><mml:mrow><mml:mo>Â¯</mml:mo></mml:mrow></mml:mover><m width="0.12em" /><mml:mn>2</mml:mn><mml:mo stretchy="false">}</mml:mo></mml:mrow></mml:mat	3.8	178
58	Local dislocation creep accommodation of a zirconium diboride silicon carbide composite. Acta Materialia, 2015, 84, 359-367.	3.8	14
59	Evaluation and development of electrical conductivity models for nickel nanostrand polymer composites. Polymer Engineering and Science, 2015, 55, 549-557.	1.5	6
60	Microstructure Detail Extraction via EBSD: An Overview. , 2014, , 405-437.		4
61	Correlating structure topological metrics with bulk composite properties via neural network analysis. Computational Materials Science, 2014, 91, 20-27.	1.4	6
62	Five-Parameter Grain Boundary Inclination Recovery with EBSD and Interaction Volume Models. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 4165-4172.	1.1	12
63	Four-Parameter Hybridâ€"Bishopâ€"Hill Model Applied to OFE Copper for the Evaluation of Elastic/Yield Limit. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 4710-4722.	1.1	0
64	Room Temperature Shear Band Development in Highly Twinned Wrought Magnesium AZ31B Sheet. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 512-516.	1.1	26
65	Estimation of the full Nyeâ€™s tensor and its gradients by micro-mechanical stereo-inference using EBSD dislocation microscopy. International Journal of Plasticity, 2013, 50, 146-157.	4.1	16
66	Twinning in magnesium alloy AZ31B under different strain paths at moderately elevated temperatures. International Journal of Plasticity, 2013, 45, 160-173.	4.1	84
67	Reducing the microstructure design space of 2nd order homogenization techniques using discrete Fourier Transforms. Mechanics of Materials, 2013, 59, 14-23.	1.7	7
68	Estimations of bulk geometrically necessary dislocation density using high resolution EBSD. Ultramicroscopy, 2013, 133, 8-15.	0.8	110
69	Characterization of nickel nanostrand nanocomposites through dielectric spectroscopy and nanoindentation. Polymer Engineering and Science, 2013, 53, 2666-2673.	1.5	6
70	Design for Performance Optimization. , 2013, , 195-235.		17
71	Efficient Propagation of Error Through System Models for Functions Common in Engineering. Journal of Mechanical Design, Transactions of the ASME, 2012, 134, .	1.7	4
72	Quantitative methods for correlating dispersion and electrical conductivity in conductorâ€"polymer nanostrand composites. Composites Part A: Applied Science and Manufacturing, 2012, 43, 1939-1946.	3.8	11

#	Article	IF	Citations
73	Strain monitoring of carbon fiber composite via embedded nickel nano-particles. Composites Part B: Engineering, 2012, 43, 1155-1163.	5.9	41
74	Pattern Center Determination in Electron Backscatter Diffraction Microscopy. Microscopy and Microanalysis, 2011, 17, 330-340.	0.2	37
75	Clustering metrics for two-phase composites. Computational Materials Science, 2011, 50, 2262-2272.	1.4	21
76	Multiscale Model for the Extreme Piezoresistivity in Silicone/Nickel Nanostrand Nanocomposites. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 3898-3906.	1.1	9
77	Room Temperature Ductility and Microstructure of Magnesium AZ31B Sheet. Journal of Materials Engineering and Performance, 2011, 20, 1357-1363.	1.2	9
78	Optimization of nickel nanocomposite for large strain sensing applications. Sensors and Actuators A: Physical, 2011, 166, 40-47.	2.0	15
79	Microstructure sensitive design for performance optimization. Progress in Materials Science, 2010, 55, 477-562.	16.0	326
80	EBSD-based continuum dislocation microscopy. International Journal of Plasticity, 2010, 26, 1234-1247.	4.1	49
81	Reply to comment by Maurice et al. in response to â€œBraggâ€™s Law Diffraction Simulations for Electron Backscatter Diffraction Analysisâ€• Ultramicroscopy, 2010, 110, 760-762.	0.8	21
82	Optimized structure based representative volume element sets reflecting the ensemble-averaged 2-point statistics. Acta Materialia, 2010, 58, 4432-4445.	3.8	99
83	Bragg's Law diffraction simulations for electron backscatter diffraction analysis. Ultramicroscopy, 2009, 109, 1148-1156.	0.8	204
84	Second-Order Microstructure Sensitive Design Using 2-Point Spatial Correlations. , 2009, , 177-188.		4
85	Computationally efficient database and spectral interpolation for fully plastic Taylor-type crystal plasticity calculations of face-centered cubic polycrystals. International Journal of Plasticity, 2008, 24, 1264-1276.	4.1	115
86	Gradient-based microstructure reconstructions from distributions using fast Fourier transforms. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 494, 68-72.	2.6	104
87	A strong contrast homogenization formulation for multi-phase anisotropic materials. Journal of the Mechanics and Physics of Solids, 2008, 56, 2287-2297.	2.3	62
88	Microstructure reconstructions from 2-point statistics using phase-recovery algorithms. Acta Materialia, 2008, 56, 942-948.	3.8	264
89	A new spectral framework for establishing localization relationships for elastic behavior of composites and their calibration to finite-element models. Acta Materialia, 2008, 56, 2272-2282.	3.8	28
90	Spectral representation of higher-order localization relationships for elastic behavior of polycrystalline cubic materials. Acta Materialia, 2008, 56, 3843-3853.	3.8	26

#	Article	IF	Citations
91	Delineation of the space of 2-point correlations in a composite material system. Acta Materialia, 2008, 56, 5285-5292.	3.8	131
92	Generalized Pareto front methods applied to second-order material property closures. Computational Materials Science, 2007, 38, 788-799.	1.4	27
93	Lattice-based structures for studying percolation in two-dimensional grain networks. Acta Materialia, 2006, 54, 1381-1388.	3.8	8
94	Elastic properties closures using second-order homogenization theories: Case studies in composites of two isotropic constituents. Acta Materialia, 2006, 54, 3117-3126.	3.8	70