Stephen Niezgoda

List of Publications by Year
in descending order

60	2,927	218677	175258
papers	citations	26 h-index	52 g-index

61	61	61	2039
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Microstructure sensitive design for performance optimization. Progress in Materials Science, 2010, 55, 477-562.	32.8	326
2	Microstructure reconstructions from 2-point statistics using phase-recovery algorithms. Acta Materialia, 2008, 56, 942-948.	7.9	264
3	Perspectives on the Impact of Machine Learning, Deep Learning, and Artificial Intelligence on Materials, Processes, and Structures Engineering. Integrating Materials and Manufacturing Innovation, 2018, 7, 157-172.	2.6	205
4	Numerical study of the stress state of a deformation twin in magnesium. Acta Materialia, 2015, 84, 349-358.	7.9	191
5	Microstructure informatics using higher-order statistics and efficient data-mining protocols. Jom, 2011, 63, 34-41.	1.9	138
6	Influence of deformation induced nanoscale twinning and FCC-HCP transformation on hardening and texture development in medium-entropy CrCoNi alloy. Acta Materialia, 2018, 158, 38-52.	7.9	135
7	Stochastic modeling of twin nucleation in polycrystals: An application in hexagonal close-packed metals. International Journal of Plasticity, 2014, 56, 119-138.	8.8	134
8	Delineation of the space of 2-point correlations in a composite material system. Acta Materialia, 2008, 56, 5285-5292.	7.9	131
9	Understanding and visualizing microstructure and microstructure variance as a stochastic process. Acta Materialia, 2011, 59, 6387-6400.	7.9	122
10	Gradient-based microstructure reconstructions from distributions using fast Fourier transforms. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 494, 68-72.	5.6	104
11	Optimized structure based representative volume element sets reflecting the ensemble-averaged 2-point statistics. Acta Materialia, 2010, 58, 4432-4445.	7.9	99
12	Novel microstructure quantification framework for databasing, visualization, and analysis of microstructure data. Integrating Materials and Manufacturing Innovation, 2013, 2, 54-80.	2.6	98
13	An integrated full-field model of concurrent plastic deformation and microstructure evolution: Application to 3D simulation of dynamic recrystallization in polycrystalline copper. International Journal of Plasticity, 2016, 80, 38-55.	8.8	89
14	Multi-scale modeling of elastic response of three-dimensional voxel-based microstructure datasets using novel DFT-based knowledge systems. Acta Materialia, 2010, 58, 2716-2725.	7.9	68
15	Microstructural and micromechanical evolution during dynamic recrystallization. International Journal of Plasticity, 2018, 100, 52-68.	8.8	66
16	A new framework for computationally efficient structureâ€“structure evolution linkages to facilitate high-fidelity scale bridging in multi-scale materials models. Acta Materialia, 2011, 59, 699-707.	7.9	62
17	Spatially resolved in situ strain measurements from an interior twinned grain in bulk polycrystalline AZ31 alloy. Acta Materialia, 2013, 61, 3612-3620.	7.9	61
18	Representation of the orientation distribution function and computation of first-order elastic properties closures using discrete Fourier transforms. Acta Materialia, 2009, 57, 3916-3923.	7.9	59

#	Article	IF	Citations
19	Estimating the response of polycrystalline materials using sets of weighted statistical volume elements. Acta Materialia, 2012, 60, 5284-5299.	7.9	54
20	Abnormal texture development in magnesium alloy Mgâ€“3Alâ€“1Zn during large strain electroplastic rolling: Effect of pulsed electric current. International Journal of Plasticity, 2016, 87, 86-99.	8.8	51
21	Microstructure and transformation texture evolution during Î± precipitation in polycrystalline Î±/Î² titanium alloys â€“ A simulation study. Acta Materialia, 2015, 94, 224-243.	7.9	41
22	The kinetics of the Ï‰ to Î± phase transformation in Zr, Ti: Analysis of data from shock-recovered samples and atomistic simulations. Acta Materialia, 2014, 77, 191-199.	7.9	40
23	Efficient computation of the angularly resolved chord length distributions and lineal path functions in large microstructure datasets. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 075002.	2.0	36
24	Machine Learningâ€“Based Reduce Order Crystal Plasticity Modeling for ICME Applications. Integrating Materials and Manufacturing Innovation, 2018, 7, 214-230.	2.6	36
25	Analysis of tractionâ€free assumption in highâ€resolution EBSD measurements. Journal of Microscopy, 2015, 260, 73-85.	1.8	27
26	Slip transmission assisted by Shockley partials across <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mrow><mml:mi>Î±</mml:mi><mml:mo>/</mml:mo><mml:mi>Î²</mml:mi></mml:mrow></mml:math> interfaces in Ti-alloys. Acta Materialia, 2019, 171, 291-305.	7.9	27
27	Modeling of trans-grain twin transmission in AZ31 via a neighborhood-based viscoplastic self-consistent model. International Journal of Plasticity, 2019, 117, 21-32.	8.8	26
28	Finite strain phase-field microelasticity theory for modeling microstructural evolution. Acta Materialia, 2020, 191, 253-269.	7.9	17
29	Introducing Grain Boundary Influenced Stochastic Effects into Constitutive Models. Jom, 2013, 65, 419-430.	1.9	16
30	A homogenized primary creep model of nickel-base superalloys and its application to determining micro-mechanistic characteristics. International Journal of Plasticity, 2018, 110, 202-219.	8.8	15
31	Unsupervised Learning for Efficient Texture Estimation From Limited Discrete Orientation Data. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 4891-4905.	2.2	14
32	Comparison of full field predictions of crystal plasticity simulations using the Voce and the dislocation density based hardening laws. International Journal of Plasticity, 2021, 147, 103099.	8.8	14
33	Isothermal annealing of shocked zirconium: Stability of the two-phase Î±/Ï‰ microstructure. Acta Materialia, 2015, 91, 101-111.	7.9	12
34	Heterogeneous<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mtext>Î³â€²</mml:mtext></mml:math>microstructures in nickel-base superalloys and their influence on tensile and creep performance. International Journal of Plasticity, 2018, 109, 153-168.	8.8	12
35	Application of the Maximum Flowâ€“Minimum Cut Algorithm to Segmentation and Clustering of Materials Datasets. Microscopy and Microanalysis, 2019, 25, 924-941.	0.4	10
36	Demonstration of near Field High Energy X-Ray Diffraction Microscopy on High-Z Ceramic Nuclear Fuel Material. Materials Science Forum, 0, 777, 112-117.	0.3	9

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37	Threeâ€dimensional imaging of shear bands in bulk metallic glass composites. Journal of Microscopy, 2016, 264, 304-310.	1.8	9
38	Uncertainty Quantification for Parameter Estimation and Response Prediction. Integrating Materials and Manufacturing Innovation, 2019, 8, 273-293.	2.6	9
39	Analysis of Misorientation Relationships Between Austenite Parents and Twins. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 837-855.	2.2	9
40	Pressure amplification and modelization in laser shock peening of Ti-6Al-4V and AA7085 with adhesive-backed opaque overlays. Journal of Materials Processing Technology, 2022, 299, 117381.	6.3	9
41	Modeling the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mrow><mml:mi>Î±</mml:mi><mml:mo>/</mml:mo><mml:mi>Ï‰</mml:mi></mml:mrow></mml:math> thermal stability in shocked Zr: A coupling between dislocation removal and phase transformation. Acta Materialia, 2018, 156, 104-115.	7.9	8
42	Characterization of Martensite Orientation Relationships in Steels and Ferrous Alloys from EBSD Data Using Bayesian Inference. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 142-153.	2.2	8
43	Uncertainty Quantification Accounting for Model Discrepancy Within a Random Effects Bayesian Framework. Integrating Materials and Manufacturing Innovation, 2020, 9, 181-198.	2.6	8
44	Measurement and characterization of nanosecond laser driven shockwaves utilizing photon Doppler velocimetry. Journal of Applied Physics, 2021, 129, .	2.5	8
45	Probabilistic Reconstruction of Austenite Microstructure from Electron Backscatter Diffraction Observations of Martensite. Microscopy and Microanalysis, 2021, 27, 1035-1055.	0.4	8
46	Effect of Reinforcement Size on the Scratch Resistance and Crystallinity of HVOF Sprayed Nylon-11/Ceramic Composite Coatings. Journal of Thermal Spray Technology, 2006, 15, 731-738.	3.1	7
47	Quantification of strain and orientation measurement error in cross-correlation EBSD in hexagonal close-packed materials. Scripta Materialia, 2012, 67, 818-821.	5.2	7
48	Long-time behavior of the Ï‰â†'Î± transition in shocked zirconium: Interplay of nucleation and plastic deformation. Acta Materialia, 2016, 108, 138-142.	7.9	5
49	A Rapid Throughput System for Shock and Impact Characterization: Design and Examples in Compaction, Spallation, and Impact Welding. Journal of Manufacturing and Materials Processing, 2020, 4, 116.	2.2	5
50	High-precision orientation mapping from spherical harmonic transform indexing of electron backscatter diffraction patterns. Ultramicroscopy, 2021, 222, 113187.	1.9	5
51	Development of the Cube Component $$ left({left{ 001 ight}leftlangle {100} ightangle }) Tj ETQq1 1 0.784314 rgBT /Overlock 10 T Nucleation. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2022, 53, 503-522.	2.2	5
52	Symmetrized Bingham distribution for representing texture: parameter estimation with respect to crystal and sample symmetries. Journal of Applied Crystallography, 2016, 49, 1315-1319.	4.5	4
53	Validation and Uncertainty Quantification for Manufacturing Design Accounting for Material Variability. , 2018, , .		1
54	Development of Bulk Metallic Glass Matrix Composites (BMGMC) by Additive Manufacturing: Modelling and Simulation â€“ A Review: Part B. Advanced Materials Research, 2019, 1154, 40-79.	0.3	1

#	Article	IF	Citations
55	Bayesian Inference for Crystallographic Texture Uncertainty Quantification. , 2019, , .		1
56	Non-Intrusive Stochastic Modeling to Account for Microstructure Variability. , 2017, , .		0
57	Ensemble Predictions of Material Behavior for ICMSE. , 2018, , .		0
58	Bayesian inference for polycrystalline materials. Stat, 2021, 10, e340.	0.4	0
59	Bayesian Calibration of Expensive Computer Experiments. , 2021, , .		0
60	Spectral Methods in the Statistical Description and Design of Microstructure. Ceramic Transactions, 0, , 687-699.	0.1	0