Surya Kalidindi

List of Publications by Year
in descending order

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327 papers	19,505 citations	8159 76 h-index	14702 127 g-index
335 all docs	335 docs citations	335 times ranked	8593 citing authors

#	Article	IF	Citations
1	Crystallographic texture evolution in bulk deformation processing of FCC metals. Journal of the Mechanics and Physics of Solids, 1992, 40, 537-569.	2.3	1,006
2	Deformation twinning in AZ31: Influence on strain hardening and texture evolution. Acta Materialia, 2010, 58, 6230-6242.	3.8	558
3	Incorporation of deformation twinning in crystal plasticity models. Journal of the Mechanics and Physics of Solids, 1998, 46, 267-290.	2.3	450
4	Influence of grain size and stacking-fault energy on deformation twinning in fcc metals. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1999, 30, 1223-1233.	1.1	418
5	Strain hardening of titanium: role of deformation twinning. Acta Materialia, 2003, 51, 4225-4237.	3.8	396
6	Strain hardening regimes and microstructural evolution during large strain compression of low stacking fault energy fcc alloys that form deformation twins. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1997, 28, 1781-1795.	1.1	393
7	Fully reversible, dislocation-based compressive deformation of Ti3SiC2 to 1 GPa. Nature Materials, 2003, 2, 107-111.	13.3	342
8	Processing and Mechanical Properties of Ti₃SiC₂: II, Effect of Grain Size and Deformation Temperature. Journal of the American Ceramic Society, 1999, 82, 2855-2860.	1.9	335
9	Damage Mechanisms around Hardness Indentations in Ti₃SiC₂. Journal of the American Ceramic Society, 1997, 80, 513-516.	1.9	331
10	Microstructure sensitive design for performance optimization. Progress in Materials Science, 2010, 55, 477-562.	16.0	326
11	Strain hardening due to deformation twinning in Î±-titanium: Constitutive relations and crystal-plasticity modeling. Acta Materialia, 2005, 53, 3495-3502.	3.8	291
12	Key computational modeling issues in Integrated Computational Materials Engineering. CAD Computer Aided Design, 2013, 45, 4-25.	1.4	267
13	Microstructure reconstructions from 2-point statistics using phase-recovery algorithms. Acta Materialia, 2008, 56, 942-948.	3.8	264
14	Spherical nanoindentation stressâ€“strain curves. Materials Science and Engineering Reports, 2015, 91, 1-36.	14.8	255
15	A Review of the Application of Machine Learning and Data Mining Approaches in Continuum Materials Mechanics. Frontiers in Materials, 2019, 6, .	1.2	223
16	Work-hardening/softening behaviour of b.c.c. polycrystals during changing strain paths: I. An integrated model based on substructure and texture evolution, and its prediction of the stressâ€“strain behaviour of an IF steel during two-stage strain paths. Acta Materialia, 2001, 49, 1607-1619.	3.8	219
17	Deep learning approaches for mining structure-property linkages in high contrast composites from simulation datasets. Computational Materials Science, 2018, 151, 278-287.	1.4	219
18	On the elastic properties and mechanical damping of Ti3SiC2, Ti3GeC2, Ti3Si0.5Al0.5C2 and Ti2AlC in the 300â€“1573K temperature range. Acta Materialia, 2006, 54, 2757-2767.	3.8	218

#	Article	IF	Citations
19	Material structure-property linkages using three-dimensional convolutional neural networks. Acta Materialia, 2018, 146, 76-84.	3.8	214
20	Determination of the effective zero-point and the extraction of spherical nanoindentation stressâ€“strain curves. Acta Materialia, 2008, 56, 3523-3532.	3.8	213
21	Modeling anisotropic strain hardening and deformation textures in low stacking fault energy fcc metals. International Journal of Plasticity, 2001, 17, 837-860.	4.1	208
22	Materials Data Science: Current Status and Future Outlook. Annual Review of Materials Research, 2015, 45, 171-193.	4.3	198
23	Prediction of crystallographic texture evolution and anisotropic stressâ€“strain curves during large plastic strains in high purity Î±-titanium using a Taylor-type crystal plasticity model. Acta Materialia, 2007, 55, 423-432.	3.8	194
24	Exploration of data science techniques to predict fatigue strength of steel from composition and processing parameters. Integrating Materials and Manufacturing Innovation, 2014, 3, 90-108.	1.2	170
25	Influence of deformation twinning on static annealing of AZ31 Mg alloy. Acta Materialia, 2013, 61, 5966-5978.	3.8	161
26	Structureâ€“property linkages using a data science approach: Application to a non-metallic inclusion/steel composite system. Acta Materialia, 2015, 91, 239-254.	3.8	160
27	The process of shear band formation in plane strain compression of fcc metals: Effects of crystallographic texture. Mechanics of Materials, 1994, 17, 223-243.	1.7	154
28	Kink bands, nonlinear elasticity and nanoindentations in graphite. Carbon, 2004, 42, 1435-1445.	5.4	148
29	Strain hardening regimes and microstructure evolution during large strain compression of high purity titanium. Scripta Materialia, 2002, 46, 419-423.	2.6	145
30	Strong cube recrystallization texture in silicon steel by twin-roll casting process. Acta Materialia, 2014, 76, 106-117.	3.8	145
31	Finite element modeling of crystal plasticity with grains shaped as truncated octahedrons. International Journal of Plasticity, 2006, 22, 1879-1898.	4.1	140
32	Microstructure informatics using higher-order statistics and efficient data-mining protocols. Jom, 2011, 63, 34-41.	0.9	138
33	Microstructure-sensitive design of a compliant beam. Journal of the Mechanics and Physics of Solids, 2001, 49, 1639-1663.	2.3	137
34	Deformation texture transition in brass: critical role of micro-scale shear bands. Acta Materialia, 2000, 48, 2665-2673.	3.8	132
35	Delineation of the space of 2-point correlations in a composite material system. Acta Materialia, 2008, 56, 5285-5292.	3.8	131
36	Crystal plasticity simulations using discrete Fourier transforms. Acta Materialia, 2009, 57, 1777-1784.	3.8	131

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37	Comparison of two grain interaction models for polycrystal plasticity and deformation texture prediction. International Journal of Plasticity, 2002, 18, 359-377.	4.1	130
38	Correlation of spherical nanoindentation stress-strain curves to simple compression stress-strain curves for elastic-plastic isotropic materials using finite element models. Acta Materialia, 2016, 112, 295-302.	3.8	129
39	Establishing structure-property localization linkages for elastic deformation of three-dimensional high contrast composites using deep learning approaches. Acta Materialia, 2019, 166, 335-345.	3.8	125
40	Reduced-order structure-property linkages for polycrystalline microstructures based on 2-point statistics. Acta Materialia, 2017, 129, 428-438.	3.8	123
41	A crystal plasticity based work-hardening/softening model for b.c.c. metals under changing strain paths. Acta Materialia, 2000, 48, 2123-2133.	3.8	122
42	Understanding and visualizing microstructure and microstructure variance as a stochastic process. Acta Materialia, 2011, 59, 6387-6400.	3.8	122
43	Role of Deformation Twinning on Strain Hardening in Cubic and Hexagonal Polycrystalline Metals. Advanced Engineering Materials, 2003, 5, 229-232.	1.6	117
44	Kinking Nonlinear Elastic Solids, Nanoindentations, and Geology. Physical Review Letters, 2004, 92, 255508.	2.9	117
45	Evolution of grain-scale microstructure during large strain simple compression of polycrystalline aluminum with quasi-columnar grains: OIM measurements and numerical simulations. International Journal of Plasticity, 2001, 17, 861-883.	4.1	116
46	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
47	Versatile algorithms for the computation of 2-point spatial correlations in quantifying material structure. Integrating Materials and Manufacturing Innovation, 2016, 5, 1-15.	1.2	111
48	Viscoelasticity and high buckling stress of dense carbon nanotube brushes. Carbon, 2009, 47, 1969-1976.	5.4	109
49	Microscale modeling of kinking nonlinear elastic solids. Physical Review B, 2005, 71, .	1.1	108
50	Microstructure sensitive design of an orthotropic plate subjected to tensile load. International Journal of Plasticity, 2004, 20, 1561-1575.	4.1	104
51	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
52	Texture evolution during equal channel angular extrusion. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 368, 28-40.	2.6	102
53	Fast computation of first-order elasticâ€“plastic closures for polycrystalline cubic-orthorhombic microstructures. Computational Materials Science, 2007, 39, 643-648.	1.4	102
54	Incipient and regular kink bands in fully dense and 10vol.% porous Ti2AlC. Acta Materialia, 2006, 54, 1631-1639.	3.8	101

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55	Modeling the strain hardening response of low SFE FCC alloys. International Journal of Plasticity, 1998, 14, 1265-1277.	4.1	100
56	Finite approximations to the second-order properties closure in single phase polycrystals. Acta Materialia, 2005, 53, 3563-3577.	3.8	100
57	Optimized structure based representative volume element sets reflecting the ensemble-averaged 2-point statistics. Acta Materialia, 2010, 58, 4432-4445.	3.8	99
58	Novel microstructure quantification framework for databasing, visualization, and analysis of microstructure data. Integrating Materials and Manufacturing Innovation, 2013, 2, 54-80.	1.2	98
59	Development of high throughput assays for establishing process-structure-property linkages in multiphase polycrystalline metals: Application to dual-phase steels. Acta Materialia, 2017, 123, 55-69.	3.8	98
60	Spectral calibration of crystal plasticity models. Acta Materialia, 2006, 54, 1795-1804.	3.8	95
61	Detailed analyses of grainâ€"scale plastic deformation in columnar polycrystalline aluminium using orientation image mapping and crystal plasticity models. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2004, 460, 1935-1956.	1.0	91
62	Materials informatics. Journal of Intelligent Manufacturing, 2019, 30, 2307-2326.	4.4	90
63	Longitudinal and Transverse Moduli and Strengths of Low Angle 3-D Braided Composites. Journal of Composite Materials, 1996, 30, 885-905.	1.2	89
64	Process-Structure Linkages Using a Data Science Approach: Application to Simulated Additive Manufacturing Data. Integrating Materials and Manufacturing Innovation, 2017, 6, 54-68.	1.2	89
65	Determination of unknown stress states in silicon wafers using microlaser Raman spectroscopy. Journal of Applied Physics, 1997, 82, 2595-2602.	1.1	86
66	Microstructural Evolution during Transient Plastic Phase Processing of Titanium Carbide-Titanium Boride Composites. Journal of the American Ceramic Society, 1996, 79, 1945-1952.	1.9	85
67	Effects of temperature, strain rate and grain size on the compressive properties of Ti3SiC2. Acta Materialia, 2005, 53, 4163-4171.	3.8	85
68	3-D Microstructure Analysis of Fuel Cell Materials: Spatial Distributions of Tortuosity, Void Size and Diffusivity. Journal of the Electrochemical Society, 2012, 159, B299-B307.	1.3	85
69	Data science and cyberinfrastructure: critical enablers for accelerated development of hierarchical materials. International Materials Reviews, 2015, 60, 150-168.	9.4	85
70	Influence of deformation path on the strain hardening behavior and microstructure evolution in low SFE FCC metals. International Journal of Plasticity, 2001, 17, 1245-1265.	4.1	83
71	Extraction of reduced-order process-structure linkages from phase-field simulations. Acta Materialia, 2017, 124, 182-194.	3.8	83
72	Spherical Nanoindentations and Kink Bands in Ti3SiC2. Journal of Materials Research, 2004, 19, 1139-1148.	1.2	82

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73	Critical evaluation of the indentation data analyses methods for the extraction of isotropic uniaxial mechanical properties using finite element models. Acta Materialia, 2012, 60, 3943-3952.	3.8	82
74	Elasticâ€“plastic property closures for hexagonal close-packed polycrystalline metals using first-order bounding theories. Acta Materialia, 2007, 55, 2729-2737.	3.8	81
75	Application of microstructure sensitive design to structural components produced from hexagonal polycrystalline metals. Computational Materials Science, 2008, 43, 374-383.	1.4	80
76	Importance of surface preparation on the nano-indentation stress-strain curves measured in metals. Journal of Materials Research, 2009, 24, 1142-1155.	1.2	80
77	Building texture evolution networks for deformation processing of polycrystalline fcc metals using spectral approaches: Applications to process design for targeted performance. International Journal of Plasticity, 2010, 26, 1183-1194.	4.1	79
78	Delineation of first-order closures for plastic properties requiring explicit consideration of strain hardening and crystallographic texture evolution. International Journal of Plasticity, 2008, 24, 327-342.	4.1	78
79	Analytics for microstructure datasets produced by phase-field simulations. Acta Materialia, 2016, 103, 192-203.	3.8	75
80	Macroscopic shape change and evolution of crystallographic texture in pre-textured FCC metals. Journal of the Mechanics and Physics of Solids, 1994, 42, 459-490.	2.3	74
81	Determination of an effective zero-point and extraction of indentation stressâ€“strain curves without the continuous stiffness measurement signal. Scripta Materialia, 2009, 60, 439-442.	2.6	74
82	A theoretical investigation of the influence of dislocation sheets on evolution of yield surfaces in single-phase B.C.C. polycrystals. Journal of the Mechanics and Physics of Solids, 2002, 50, 783-807.	2.3	73
83	Solid particle erosion resistance of thermally sprayed functionally graded coatings for polymer matrix composites. Surface and Coatings Technology, 2006, 200, 5145-5151.	2.2	72
84	A data-driven approach to establishing microstructureâ€“property relationships in porous transport layers of polymer electrolyte fuel cells. Journal of Power Sources, 2014, 245, 144-153.	4.0	72
85	An approximate procedure for predicting the evolution of crystallographic texture in bulk deformation processing of fcc metals. International Journal of Mechanical Sciences, 1992, 34, 309-329.	3.6	71
86	Measurement of the local mechanical properties in polycrystalline samples using spherical nanoindentation and orientation imaging microscopy. Acta Materialia, 2009, 57, 3020-3028.	3.8	71
87	Selection of representative volume elements for pore-scale analysis of transport in fuel cell materials. Journal of Power Sources, 2012, 197, 168-179.	4.0	71
88	Calibrated localization relationships for elastic response of polycrystalline aggregates. Acta Materialia, 2014, 81, 151-160.	3.8	71
89	The materials innovation ecosystem: A key enabler for the Materials Genome Initiative. MRS Bulletin, 2016, 41, 326-337.	1.7	71
90	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

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91	Compressive creep of fine and coarse-grained T3SiC2 in air in the 1100â€“1300Â°C temperature range. Acta Materialia, 2005, 53, 4963-4973.	3.8	69
92	Quantification and classification of microstructures in ternary eutectic alloys using 2-point spatial correlations and principal component analyses. Acta Materialia, 2016, 110, 131-141.	3.8	69
93	Procedures for construction of anisotropic elasticâ€“plastic property closures for face-centered cubic polycrystals using first-order bounding relations. Journal of the Mechanics and Physics of Solids, 2006, 54, 1744-1762.	2.3	68
94	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.	3.8	68
95	Materials Knowledge Systems in Pythonâ€”a Data Science Framework for Accelerated Development of Hierarchical Materials. Integrating Materials and Manufacturing Innovation, 2017, 6, 36-53.	1.2	67
96	Formulation and calibration of higher-order elastic localization relationships using the MKS approach. Acta Materialia, 2011, 59, 4595-4605.	3.8	66
97	Studying grain boundary regions in polycrystalline materials using spherical nano-indentation and orientation imaging microscopy. Journal of Materials Science, 2012, 47, 815-823.	1.7	66
98	Resolving macro- and micro-porous layer interaction in polymer electrolyte fuel cells using focused ion beam and X-ray computed tomography. Electrochimica Acta, 2013, 87, 201-212.	2.6	66
99	Studies of grain boundary regions in deformed polycrystalline aluminum using spherical nanoindentation. International Journal of Plasticity, 2016, 81, 87-101.	4.1	65
100	On the prediction of yield surfaces by the crystal plasticity models for fcc polycrystals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2000, 293, 120-129.	2.6	63
101	Quantitative prediction of textures in aluminium cold rolled to moderate strains. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2002, 336, 233-244.	2.6	62
102	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
103	Measuring the dynamic mechanical response of hydrated mouse bone by nanoindentation. Journal of the Mechanical Behavior of Biomedical Materials, 2011, 4, 34-43.	1.5	62
104	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.	3.8	62
105	Estimating mechanical properties from spherical indentation using Bayesian approaches. Materials and Design, 2018, 147, 92-105.	3.3	61
106	Representation of the orientation distribution function and computation of first-order elastic properties closures using discrete Fourier transforms. Acta Materialia, 2009, 57, 3916-3923.	3.8	59
107	Mechanical characterization of grain boundaries using nanoindentation. Current Opinion in Solid State and Materials Science, 2014, 18, 196-204.	5.6	59
108	Numerical evaluation of isostrain and weighted-average models for elastic moduli of three-dimensional composites. Composites Science and Technology, 1997, 57, 293-305.	3.8	58

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109	Dynamic Elastic Hysteretic Solids and Dislocations. Physical Review Letters, 2005, 94, 085501.	2.9	58
110	Vision for Data and Informatics in the Future Materials Innovation Ecosystem. Jom, 2016, 68, 2126-2137.	0.9	58
111	Application of Gaussian process regression models for capturing the evolution of microstructure statistics in aging of nickel-based superalloys. Acta Materialia, 2019, 178, 45-58.	3.8	58
112	Adhesive/Cohesive Properties of Thermally Sprayed Functionally Graded Coatings for Polymer Matrix Composites. Journal of Thermal Spray Technology, 2005, 14, 45-51.	1.6	57
113	Machine learning approaches for elastic localization linkages in high-contrast composite materials. Integrating Materials and Manufacturing Innovation, 2015, 4, 192-208.	1.2	56
114	On capturing the grain-scale elastic and plastic anisotropy of alpha-Ti with spherical nanoindentation and electron back-scattered diffraction. Acta Materialia, 2016, 117, 23-34.	3.8	55
115	Estimating the response of polycrystalline materials using sets of weighted statistical volume elements. Acta Materialia, 2012, 60, 5284-5299.	3.8	54
116	Modeling texture evolution in equal channel angular extrusion using crystal plasticity finite element models. International Journal of Plasticity, 2009, 25, 768-779.	4.1	52
117	Understanding pop-ins in spherical nanoindentation. Applied Physics Letters, 2014, 105, .	1.5	51
118	Effect of microstructure on oxygen rich layer evolution and its impact on fatigue life during high-temperature application of Î±/Î² titanium. Acta Materialia, 2016, 107, 377-389.	3.8	51
119	The secondary hardening phenomenon in strain-hardened MP35N alloy. Acta Materialia, 1998, 46, 5795-5806.	3.8	50
120	Effect of the continuous stiffness measurement on the mechanical properties extracted using spherical nanoindentation. Acta Materialia, 2013, 61, 3744-3751.	3.8	50
121	Representation and calibration of elastic localization kernels for a broad class of cubic polycrystals. Acta Materialia, 2015, 94, 26-35.	3.8	50
122	Data-driven reduced order models for effective yield strength and partitioning of strain in multiphase materials. Journal of Computational Physics, 2017, 346, 242-261.	1.9	50
123	Data-driven reduced-order models for rank-ordering the high cycle fatigue performance of polycrystalline microstructures. Materials and Design, 2018, 154, 170-183.	3.3	49
124	Mechanical characterization of Ti-6Al-4V titanium alloy at multiple length scales using spherical indentation stress-strain measurements. Materials and Design, 2016, 111, 463-472.	3.3	48
125	High throughput exploration of process-property linkages in Al-6061 using instrumented spherical microindentation and microstructurally graded samples. Integrating Materials and Manufacturing Innovation, 2016, 5, 192-211.	1.2	48
126	On the accuracy of the predictions of texture evolution by the finite element technique for fcc polycrystals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 257, 108-117.	2.6	47

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127	Representation and computational structure-property relations of random media. Jom, 2011, 63, 45-51.	0.9	47
128	Crystal plasticity finite element simulations using a database of discrete Fourier transforms. International Journal of Plasticity, 2015, 66, 71-84.	4.1	47
129	Strain-path effects on the evolution of microstructure and texture during the severe-plastic deformation of aluminum. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2006, 37, 2879-2891.	1.1	46
130	Grain-scale measurement of slip resistances in aluminum polycrystals using spherical nanoindentation. Acta Materialia, 2015, 90, 27-36.	3.8	46
131	Extracting single-crystal elastic constants from polycrystalline samples using spherical nanoindentation and orientation measurements. Acta Materialia, 2014, 79, 108-116.	3.8	45
132	Application of spherical indentation and the materials knowledge system framework to establishing microstructure-yield strength linkages from carbon steel scoops excised from high-temperature exposed components. Acta Materialia, 2018, 144, 758-767.	3.8	45
133	Extracting knowledge from molecular mechanics simulations of grain boundaries using machine learning. Acta Materialia, 2017, 133, 100-108.	3.8	44
134	Large deformation simple compression of a copper single crystal. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1993, 24, 989-992.	1.4	43
135	Sapphire: A kinking nonlinear elastic solid. Journal of Applied Physics, 2006, 99, 063501.	1.1	42
136	Thermomechanical Processing for Recovery of Desired $$ {leftlangle {001} ightangle } $$ Fiber Texture in Electric Motor Steels. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2008, 39, 1738-1746.	1.1	42
137	Morphological Analyses of Polymer Electrolyte Fuel Cell Electrodes with Nanoâ€Scale Computed Tomography Imaging. Fuel Cells, 2013, 13, 935-945.	1.5	42
138	Role of materials data science and informatics in accelerated materials innovation. MRS Bulletin, 2016, 41, 596-602.	1.7	42
139	Biomaterialomics: Data science-driven pathways to develop fourth-generation biomaterials. Acta Biomaterialia, 2022, 143, 1-25.	4.1	42
140	Statistical construction of 3-D microstructures from 2-D exemplars collected on oblique sections. Acta Materialia, 2016, 102, 136-148.	3.8	40
141	Application of chord length distributions and principal component analysis for quantification and representation of diverse polycrystalline microstructures. Materials Characterization, 2018, 145, 671-685.	1.9	40
142	Data science approaches for microstructure quantification and feature identification in porous membranes. Journal of Membrane Science, 2017, 540, 88-97.	4.1	39
143	Quantifying the mechanical effects of He, W and HeÂ+ÂW ion irradiation on tungsten with spherical nanoindentation. Journal of Materials Science, 2018, 53, 5296-5316.	1.7	39
144	Feature engineering of material structure for AI-based materials knowledge systems. Journal of Applied Physics, 2020, 128, .	1.1	39

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145	Strategies for rapid parametric assessment of microstructure-sensitive fatigue for HCP polycrystals. International Journal of Fatigue, 2017, 104, 231-242.	2.8	37
146	A crystal plasticity finite element analysis of texture evolution in equal channel angular extrusion. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 410-411, 207-212.	2.6	36
147	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.	0.8	36
148	A new framework for rotationally invariant two-point spatial correlations in microstructure datasets. Acta Materialia, 2018, 158, 53-64.	3.8	36
149	The role of crystallinity in the crystallographic texture evolution of polyethylenes during tensile deformation. Polymer, 2003, 44, 5355-5367.	1.8	35
150	A quantitative evaluation of the deformation texture predictions for aluminium alloys from crystal plasticity finite element method. Modelling and Simulation in Materials Science and Engineering, 2004, 12, 845-870.	0.8	35
151	Analyzing indentation stressâ€“strain response of LaGaO3 single crystals using spherical indenters. Journal of the European Ceramic Society, 2008, 28, 2213-2220.	2.8	35
152	Assessment of lamellar level properties in mouse bone utilizing a novel spherical nanoindentation data analysis method. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 13, 102-117.	1.5	35
153	Application of data science tools to quantify and distinguish between structures and models in molecular dynamics datasets. Nanotechnology, 2015, 26, 344006.	1.3	35
154	Estimating the slip resistance from spherical nanoindentation and orientation measurements in polycrystalline samples of cubic metals. International Journal of Plasticity, 2017, 92, 19-30.	4.1	35
155	Probing nanoscale damage gradients in ion-irradiated metals using spherical nanoindentation. Scientific Reports, 2017, 7, 11918.	1.6	35
156	Materials knowledge system for nonlinear composites. Computer Methods in Applied Mechanics and Engineering, 2019, 346, 180-196.	3.4	34
157	Reduced-order microstructure-sensitive protocols to rank-order the transition fatigue resistance of polycrystalline microstructures. International Journal of Fatigue, 2019, 119, 1-10.	2.8	33
158	Structure-processing correlations and mechanical properties in freeze-cast Ti-6Al-4V with highly aligned porosity and a lightweight Ti-6Al-4V-PMMA composite with excellent energy absorption capability. Acta Materialia, 2017, 132, 182-192.	3.8	32
159	Synthesis and characterization of a poly(methyl methacrylate-acrylic acid) copolymer for bioimplant applications. Journal of Applied Polymer Science, 1997, 63, 75-87.	1.3	31
160	Modeling the evolution of anisotropy in Alâ€“Li alloys: application to Alâ€“Li 2090-T8E41. International Journal of Plasticity, 2002, 18, 1373-1393.	4.1	31
161	Microstructure-based knowledge systems for capturing process-structure evolution linkages. Current Opinion in Solid State and Materials Science, 2017, 21, 129-140.	5.6	31
162	Modeling Anisotropic Stress-Strain Response and Crystallographic Texture Evolution in Î±-Titanium during Large Plastic Deformation using Taylor-Type Models: Influence of Initial Texture and Purity. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2008, 39, 3046-3054.	1.1	30

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163	Analytical Model for the Low Pressure Chemical Vapor Deposition of SiO2 from Tetraethoxysilane. Journal of the Electrochemical Society, 1990, 137, 624-628.	1.3	28
164	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
165	Dependence of mechanical properties on crystal orientation of semi-crystalline polyethylene structures. Polymer, 2014, 55, 4248-4257.	1.8	28
166	Context Aware Machine Learning Approaches for Modeling Elastic Localization in Three-Dimensional Composite Microstructures. Integrating Materials and Manufacturing Innovation, 2017, 6, 160-171.	1.2	28
167	Carbon stoichiometry and mechanical properties of high entropy carbides. Acta Materialia, 2021, 215, 117051.	3.8	28
168	Generalized Pareto front methods applied to second-order material property closures. Computational Materials Science, 2007, 38, 788-799.	1.4	27
169	Ambientâ€•and Highâ€Temperature Properties of Titanium Carbideâ€“Titanium Boride Composites Fabricated by Transient Plastic Phase Processing. Journal of the American Ceramic Society, 1999, 82, 665-672.	1.9	26
170	Spectral representation of higher-order localization relationships for elastic behavior of polycrystalline cubic materials. Acta Materialia, 2008, 56, 3843-3853.	3.8	26
171	Multiresolution mechanical characterization of hierarchical materials: Spherical nanoindentation on martensitic Fe-Ni-C steels. Acta Materialia, 2018, 153, 257-269.	3.8	26
172	Spectral methods for capturing crystallographic texture evolution during large plastic strains in metals. Acta Materialia, 2005, 53, 3613-3623.	3.8	25
173	Extraction of Process-Structure Evolution Linkages from X-ray Scattering Measurements Using Dimensionality Reduction and Time Series Analysis. Integrating Materials and Manufacturing Innovation, 2017, 6, 147-159.	1.2	25
174	Computationally efficient predictions of crystal plasticity based forming limit diagrams using a spectral database. International Journal of Plasticity, 2018, 103, 168-187.	4.1	25
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