Irene Beyerlein

List of Publications by Citations

313 papers	15,184 citations	69 h-index	109 g-index
323 ext. papers	17,517 ext. citations	6.2 avg, IF	7.19 L-index

#	Paper	IF	Citations
313	A dislocation-based constitutive law for pure Zr including temperature effects. *International Journal of Plasticity*, **2008**, 24, 867-895	7.6	429
312	Statistical analyses of deformation twinning in magnesium. *Philosophical Magazine*, **2010**, 90, 2161-2190	1.6	372
311	Texture evolution in equal-channel angular extrusion. *Progress in Materials Science*, **2009**, 54, 427-510	42.2	368
310	Defect-interface interactions. *Progress in Materials Science*, **2015**, 74, 125-210	42.2	351
309	Radiation damage tolerant nanomaterials. *Materials Today*, **2013**, 16, 443-449	21.8	328
308	Effect of microstructure on the nucleation of deformation twins in polycrystalline high-purity magnesium: A multi-scale modeling study. *Journal of the Mechanics and Physics of Solids*, **2011**, 59, 988-1003	5	255
307	Growth Twins and Deformation Twins in Metals. *Annual Review of Materials Research*, **2014**, 44, 329-363	12.8	250
306	Design of radiation tolerant materials via interface engineering. *Advanced Materials*, **2013**, 25, 6975-9	24	248
305	An atomic and probabilistic perspective on twin nucleation in Mg. *Scripta Materialia*, **2010**, 63, 741-746	5.6	244
304	Texture formation during equal channel angular extrusion of fcc and bcc materials: comparison with simple shear. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2005**, 394, 66-77	5.3	241
303	High-strength and thermally stable bulk nanolayered composites due to twin-induced interfaces. *Nature Communications*, **2013**, 4, 1696	17.4	238
302	Nucleation and growth of twins in Zr: A statistical study. *Acta Materialia*, **2009**, 57, 6047-6056	8.4	222
301	Microstructure of cryogenic treated M2 tool steel. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2003**, 339, 241-244	5.3	215
300	Strain rate and temperature effects on the selection of primary and secondary slip and twinning systems in HCP Zr. *Acta Materialia*, **2015**, 88, 55-73	8.4	178
299	Bulk texture evolution of Cu□Nb nanolamellar composites during accumulative roll bonding. *Acta Materialia*, **2012**, 60, 1576-1586	8.4	167
298	Finite element analysis of the plastic deformation zone and working load in equal channel angular extrusion. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2004**, 382, 217-236	5.3	167
297	Nucleation of a (1□012) twin in hexagonal close-packed crystals. *Scripta Materialia*, **2009**, 61, 903-906	5.6	162

296	Heterostructured materials: superior properties from hetero-zone interaction. *Materials Research Letters*, **2021**, 9, 1-31	7.4	160
295	Modeling texture and microstructural evolution in the equal channel angular extrusion process. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing* , **2003**, 345, 122-138	5.3	155
294	Twinning dislocations on {1□011} and {1□013} planes in hexagonal close-packed crystals. *Acta Materialia*, **2011**, 59, 3990-4001	8.4	140
293	Strain rate and temperature sensitive multi-level crystal plasticity model for large plastic deformation behavior: Application to AZ31 magnesium alloy. *International Journal of Plasticity*, **2016**, 83, 90-109	7.6	139
292	Micromechanical simulation of the failure of fiber reinforced composites. *Journal of the Mechanics and Physics of Solids*, **2000**, 48, 621-648	5	131
291	Slip-assisted twin growth in hexagonal close-packed metals. *Scripta Materialia*, **2009**, 60, 32-35	5.6	129
290	Role of twinning in the hardening response of zirconium during temperature reloads. *Acta Materialia*, **2006**, 54, 2887-2896	8.4	129
289	Heterogeneity of deformation texture in equal channel angular extrusion of copper. *Acta Materialia*, **2004**, 52, 4859-4875	8.4	129
288	A polycrystal plasticity model for predicting mechanical response and texture evolution during strain-path changes: Application to beryllium. *International Journal of Plasticity*, **2013**, 49, 185-198	7.6	128
287	Texture evolution during multi-pass equal channel angular extrusion of copper: Neutron diffraction characterization and polycrystal modeling. *Acta Materialia*, **2005**, 53, 2111-2125	8.4	126
286	Reactions of lattice dislocations with grain boundaries in Mg: Implications on the micro scale from atomic-scale calculations. *International Journal of Plasticity*, **2014**, 56, 156-172	7.6	125
285	A dislocation density based crystal plasticity finite element model: Application to a two-phase polycrystalline HCP/BCC composites. *Journal of the Mechanics and Physics of Solids*, **2014**, 66, 16-31	5	121
284	Stress concentrations around multiple fiber breaks in an elastic matrix with local yielding or debonding using quadratic influence superposition. *Journal of the Mechanics and Physics of Solids*, **1996**, 44, 1997-2039	5	121
283	A strain-rate and temperature dependent constitutive model for BCC metals incorporating non-Schmid effects: Application to tantalum□ungsten alloys. *International Journal of Plasticity*, **2014**, 62, 93-104	7.6	120
282	Three dimensional predictions of grain scale plasticity and grain boundaries using crystal plasticity finite element models. *Computer Methods in Applied Mechanics and Engineering*, **2014**, 277, 239-259	5.7	120
281	Explicit incorporation of deformation twins into crystal plasticity finite element models. *Computer Methods in Applied Mechanics and Engineering*, **2015**, 295, 396-413	5.7	118
280	Stochastic modeling of twin nucleation in polycrystals: An application in hexagonal close-packed metals. *International Journal of Plasticity*, **2014**, 56, 119-138	7.6	118
279	Texture evolution via combined slip and deformation twinning in rolled silver□opper cast eutectic nanocomposite. *International Journal of Plasticity*, **2011**, 27, 121-146	7.6	117

278	Emergence of stable interfaces under extreme plastic deformation. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 4386-90	11.5	111
277	On the strength of dislocation interactions and their effect on latent hardening in pure Magnesium. *International Journal of Plasticity*, **2014**, 62, 72-92	7.6	109
276	A study of microstructure-driven strain localizations in two-phase polycrystalline HCP/BCC composites using a multi-scale model. *International Journal of Plasticity*, **2015**, 74, 35-57	7.6	108
275	Interface-driven microstructure development and ultra high strength of bulk nanostructured Cu-Nb multilayers fabricated by severe plastic deformation. *Journal of Materials Research*, **2013**, 28, 1799-1812	2.5	106
274	Atomic-scale study of nucleation of dislocations from fcc–bcc interfaces. *Acta Materialia*, **2012**, 60, 2855-2865	8.4	106
273	On the interaction between slip dislocations and twins in HCP Zr. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2009**, 513-514, 42-51	5.3	106
272	Effect of local stress fields on twin characteristics in HCP metals. *Acta Materialia*, **2016**, 116, 143-154	8.4	104
271	Texture evolution in two-phase Zr/Nb lamellar composites during accumulative roll bonding. *International Journal of Plasticity*, **2014**, 57, 16-28	7.6	97
270	Role of twinning and slip during compressive deformation of beryllium as a function of strain rate. *International Journal of Plasticity*, **2012**, 29, 120-135	7.6	96
269	In situ X-ray diffraction and crystal plasticity modeling of the deformation behavior of extruded Mg–Li–(Al) alloys: An uncommon tension–compression asymmetry. *Acta Materialia*, **2015**, 86, 254-268	8.4	96
268	An atomistically-informed dislocation dynamics model for the plastic anisotropy and tension–compression asymmetry of BCC metals. *International Journal of Plasticity*, **2011**, 27, 1471-1484	7.6	96
267	Statistics for the strength and size effects of microcomposites with four carbon fibers in epoxy resin. *Composites Science and Technology*, **1996**, 56, 75-92	8.6	94
266	Interface dislocation patterns and dislocation nucleation in face-centered-cubic and body-centered-cubic bicrystal interfaces. *International Journal of Plasticity*, **2014**, 53, 40-55	7.6	93
265	The heterophase interface character distribution of physical vapor-deposited and accumulative roll-bonded Cu–Nb multilayer composites. *Acta Materialia*, **2012**, 60, 1747-1761	8.4	93
264	An elasto-plastic self-consistent model with hardening based on dislocation density, twinning and de-twinning: Application to strain path changes in HCP metals. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2015**, 638, 262-274	5.3	92
263	Modeling transients in the mechanical response of copper due to strain path changes. *International Journal of Plasticity*, **2007**, 23, 640-664	7.6	92
262	A crystal plasticity model incorporating the effects of precipitates in superalloys: Application to tensile, compressive, and cyclic deformation of Inconel 718. *International Journal of Plasticity*, **2017**, 99, 162-185	7.6	90
261	Plastic instability mechanisms in bimetallic nanolayered composites. *Acta Materialia*, **2014**, 79, 282-291	8.4	86

260	Microstructure, crystallographic texture, and plastic anisotropy evolution in an Mg alloy during equal channel angular extrusion processing. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2011**, 528, 7616-7627	5.3	86
259	Effect of processing route on microstructure and texture development in equal channel angular extrusion of interstitial-free steel. *Acta Materialia*, **2006**, 54, 1087-1100	8.4	84
258	Deformation twinning mechanisms from bimetal interfaces as revealed by in situ straining in the TEM. *Acta Materialia*, **2012**, 60, 5858-5866	8.4	83
257	Review: effect of bimetal interface structure on the mechanical behavior of Cu□Nb fcc□bcc nanolayered composites. *Journal of Materials Science*, **2014**, 49, 6497-6516	4.3	82
256	Analytical modeling of material flow in equal channel angular extrusion (ECAE). *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2004**, 380, 171-190	5.3	82
255	Effect of dislocation density-twin interactions on twin growth in AZ31 as revealed by explicit crystal plasticity finite element modeling. *International Journal of Plasticity*, **2017**, 99, 81-101	7.6	80
254	A dislocation-based multi-rate single crystal plasticity model. *International Journal of Plasticity*, **2013**, 44, 129-146	7.6	80
253	Anomalous Basal Slip Activity in Zirconium under High-strain Deformation. *Materials Research Letters*, **2013**, 1, 133-140	7.4	80
252	Mapping dislocation nucleation behavior from bimetal interfaces. *Acta Materialia*, **2013**, 61, 7488-7499	8.4	79
251	Yield symmetry and reduced strength differential in Mg-2.5Y alloy. *Acta Materialia*, **2016**, 120, 75-85	8.4	77
250	Plastic deformation mechanisms of fcc single crystals at small scales. *Acta Materialia*, **2011**, 59, 7673-7682	8.4	77
249	Coupling elasto-plastic self-consistent crystal plasticity and implicit finite elements: Applications to compression, cyclic tension-compression, and bending to large strains. *International Journal of Plasticity*, **2017**, 93, 187-211	7.6	76
248	Plastic anisotropy in fcc single crystals in high rate deformation. *International Journal of Plasticity*, **2009**, 25, 26-48	7.6	76
247	Effects of lattice distortion and chemical short-range order on the mechanisms of deformation in medium entropy alloy CoCrNi. *Acta Materialia*, **2020**, 199, 352-369	8.4	74
246	Stress and strain relaxation in magnesium AZ31 rolled plate: In-situ neutron measurement and elastic viscoplastic polycrystal modeling. *International Journal of Plasticity*, **2016**, 79, 275-292	7.6	73
245	Deformation and failure of shocked bulk Cu□Nb nanolaminates. *Acta Materialia*, **2014**, 63, 150-161	8.4	73
244	Orientation dependence of shock-induced twinning and substructures in a copper bicrystal. *Acta Materialia*, **2010**, 58, 549-559	8.4	68
243	Glide dislocation nucleation from dislocation nodes at semi-coherent {1 1 1} Cu□Ni interfaces. *Acta Materialia*, **2015**, 98, 206-220	8.4	67

242	Mechanisms for initial grain refinement in OFHC copper during equal channel angular pressing. *Acta Materialia*, **2007**, 55, 655-668	8.4	66
241	Effect of age hardening on the deformation behavior of an MgYNd alloy: In-situ X-ray diffraction and crystal plasticity modeling. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2015**, 628, 396-409	5.3	65
240	Modeling the texture evolution of Cu/Nb layered composites during rolling. *International Journal of Plasticity*, **2013**, 49, 71-84	7.6	65
239	Plastic flow anisotropy of pure zirconium after severe plastic deformation at room temperature. *Acta Materialia*, **2009**, 57, 4855-4865	8.4	65
238	Multiplicity of dislocation pathways in a refractory multiprincipal element alloy. *Science*, **2020**, 370, 95-101	33.3	65
237	Bulk texture evolution of nanolamellar ZrNb composites processed via accumulative roll bonding. *Acta Materialia*, **2015**, 92, 97-108	8.4	64
236	Experimental characterization and crystal plasticity modeling of anisotropy, tension-compression asymmetry, and texture evolution of additively manufactured Inconel 718 at room and elevated temperatures. *International Journal of Plasticity*, **2020**, 125, 63-79	7.6	64
235	Microstructure and texture evolution during equal channel angular extrusion of interstitial-free steel: Effects of die angle and processing route. *Acta Materialia*, **2007**, 55, 1017-1032	8.4	63
234	Material-based design of the extrusion of bimetallic tubes. *Computational Materials Science*, **2014**, 95, 63-73	3.2	62
233	Tensionâcompression asymmetry in severely deformed pure copper. *Acta Materialia*, **2007**, 55, 4603-4613	8.4	61
232	Comparison of shear-lag theory and continuum fracture mechanics for modeling fiber and matrix stresses in an elastic cracked composite lamina. *International Journal of Solids and Structures*, **1996**, 33, 2543-2574	3.1	61
231	Anisotropic modeling of structural components using embedded crystal plasticity constructive laws within finite elements. *International Journal of Mechanical Sciences*, **2016**, 105, 227-238	5.5	60
230	Shear-lag model for failure simulations of unidirectional fiber composites including matrix stiffness. *Mechanics of Materials*, **1999**, 31, 331-350	3.3	60
229	Characterizing interface dislocations by atomically informed Frank-Bilby theory. *Journal of Materials Research*, **2013**, 28, 1646-1657	2.5	59
228	Statistics of fracture for an elastic notched composite lamina containing Weibull fibersâPart I. Features from Monte-Carlo simulation. *Engineering Fracture Mechanics*, **1997**, 57, 241-265	4.2	59
227	Texture evolution and enhanced grain refinement under high-pressure-double-torsion. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2014**, 611, 29-36	5.3	56
226	Time evolution of stress redistribution around multiple fiber breaks in a composite with viscous and viscoelastic matrices. *International Journal of Solids and Structures*, **1998**, 35, 3177-3211	3.1	54
225	A numerical procedure enabling accurate descriptions of strain rate-sensitive flow of polycrystals within crystal visco-plasticity theory. *Computer Methods in Applied Mechanics and Engineering*, **2016**, 308, 468-482	5.7	54

224	Twinnability of bimetal interfaces in nanostructured composites. *Materials Research Letters*, **2013**, 1, 89-95	7.4	53
223	Strength distributions and size effects for 2D and 3D composites with Weibull fibers in an elastic matrix. *International Journal of Fracture*, **2002**, 115, 41-85	2.3	53
222	Tensile behavior and flow stress anisotropy of accumulative roll bonded Cu-Nb nanolaminates. *Applied Physics Letters*, **2016**, 108, 051903	3.4	51
221	Twinning in bcc metals under shock loading: a challenge to empirical potentials. *Philosophical Magazine Letters*, **2011**, 91, 731-740	1	50
220	Texture formation in orthorhombic alpha-uranium under simple compression and rolling to high strains. *Journal of Nuclear Materials*, **2016**, 473, 143-156	3.3	50
219	Strain fields induced by kink band propagation in Cu-Nb nanolaminate composites. *Acta Materialia*, **2017**, 133, 303-315	8.4	49
218	Dislocation models of interfacial shearing induced by an approaching lattice glide dislocation. *International Journal of Plasticity*, **2013**, 41, 1-13	7.6	49
217	The plasticity of highly oriented nano-layered Zr/Nb composites. *Acta Materialia*, **2016**, 115, 189-203	8.4	48
216	STOCHASTIC PROCESSES OF {1012} DEFORMATION TWINNING IN HEXAGONAL CLOSE-PACKED POLYCRYSTALLINE ZIRCONIUM AND MAGNESIUM. *International Journal for Multiscale Computational Engineering*, **2011**, 9, 459-480	2.4	48
215	Incorporating interface affected zones into crystal plasticity. *International Journal of Plasticity*, **2015**, 65, 206-225	7.6	47
214	Microstructural evolution of nanolayered CuNb composites subjected to high-pressure torsion. *Acta Materialia*, **2014**, 72, 178-191	8.4	47
213	Size and heterogeneity effects on the strength of fibrous composites. *Physica D: Nonlinear Phenomena*, **1999**, 133, 371-389	3.3	47
212	Modeling discrete twin lamellae in a microstructural framework. *Scripta Materialia*, **2016**, 121, 84-88	5.6	46
211	A crystal plasticity study of heterophase interface character stability of Cu/Nb bicrystals. *International Journal of Plasticity*, **2013**, 48, 72-91	7.6	45
210	On the development of microstructure and texture heterogeneity in ECAE via route C. *Acta Materialia*, **2006**, 54, 1397-1408	8.4	45
209	A measure of plastic anisotropy for hexagonal close packed metals: Application to alloying effects on the formability of Mg. *Journal of Alloys and Compounds*, **2017**, 695, 1488-1497	5.7	44
208	Enhancement of orientation gradients during simple shear deformation by application of simple compression. *Journal of Applied Physics*, **2015**, 117, 214309	2.5	43
207	Layer size effect on the shock compression behavior of fccbcc nanolaminates. *Acta Materialia*, **2014**, 79, 74-83	8.4	43

206	In-situ, ex-situ EBSD and (HR-)TEM analyses of primary, secondary and tertiary twin development in an Mg wt%Li alloy. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2014**, 610, 54-64	5.3	43
205	Mechanical properties of bone-shaped-short-fiber reinforced composites. *Acta Materialia*, **1999**, 47, 1767-1781	8.4	43
204	Defect-interface interactions in irradiated Cu/Ag nanocomposites. *Acta Materialia*, **2018**, 160, 211-223	8.4	43
203	Slip band formation and mobile dislocation density generation in high rate deformation of single fcc crystals. *Philosophical Magazine*, **2008**, 88, 1321-1343	1.6	42
202	On the influence of fiber shape in bone-shaped short-fiber composites. *Composites Science and Technology*, **2001**, 61, 1341-1357	8.6	42
201	Curved-fiber pull-out model for nanocomposites. Part 1: Bonded stage formulation. *Mechanics of Materials*, **2009**, 41, 279-292	3.3	40
200	Characterization of creep properties and creep textures in pure aluminum processed by equal-channel angular pressing. *Acta Materialia*, **2008**, 56, 2307-2317	8.4	40
199	Hybrid dislocation dynamics based strain hardening constitutive model. *International Journal of Plasticity*, **2013**, 49, 119-144	7.6	39
198	Bone-shaped short fiber composites—An overview. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2002**, 326, 208-227	5.3	39
197	Transitioning rate sensitivities across multiple length scales: Microstructure-property relationships in the Taylor cylinder impact test on zirconium. *International Journal of Plasticity*, **2016**, 84, 138-159	7.6	38
196	Strong, Ductile, and Thermally Stable bcc-Mg Nanolaminates. *Scientific Reports*, **2017**, 7, 8264	4.9	37
195	Strength of nanoscale metallic multilayers. *Scripta Materialia*, **2018**, 145, 132-136	5.6	37
194	Understanding dislocation mechanics at the mesoscale using phase field dislocation dynamics. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2016**, 374,	3	37
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192	Role of alloying elements on twin growth and twin transmission in magnesium alloys. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2017**, 706, 295-303	5.3	37
191	Manipulating dislocation nucleation and shear resistance of bimetal interfaces by atomic steps. *Acta Materialia*, **2016**, 113, 194-205	8.4	37
190	Origin of texture development in orthorhombic uranium. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2016**, 665, 108-124	5.3	37
189	The role of partial mediated slip during quasi-static deformation of 3D nanocrystalline metals. *Journal of the Mechanics and Physics of Solids*, **2015**, 78, 415-426	5	36

188	Detwinning of High-Purity Zirconium: In-Situ Neutron Diffraction Experiments. *Experimental Mechanics*, **2010**, 50, 125-133	2.6	36
187	Interface-dominant multilayers fabricated by severe plastic deformation: Stability under extreme conditions. *Current Opinion in Solid State and Materials Science*, **2015**, 19, 265-276	12	35
186	Modelling texture evolution in equal channel angular extrusion of bcc materials: effects of processing route and initial texture. *Modelling and Simulation in Materials Science and Engineering*, **2005**, 13, 509-530	2	35
185	The development of compression damage zones in fibrous composites. *Composites Science and Technology*, **2001**, 61, 2461-2480	8.6	35
184	Load transfer from broken fibers in continuous fiber Al2O3-Al composites and dependence on local volume fraction. *Journal of the Mechanics and Physics of Solids*, **1999**, 47, 465-502	5	35
183	Curved-fiber pull-out model for nanocomposites. Part 2: Interfacial debonding and sliding. *Mechanics of Materials*, **2009**, 41, 293-307	3.3	34
182	Evolution of texture in a magnesium alloy processed by ECAP through dies with different angles. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing* , **2010**, 527, 1709-1718	5.3	34
181	Activity of pyramidal I and II slip in Mg alloys as revealed by texture development. *Journal of the Mechanics and Physics of Solids*, **2018**, 111, 290-307	5	34
180	Emergence of grain-size effects in nanocrystalline metals from statistical activation of discrete dislocation sources. *Acta Materialia*, **2015**, 90, 169-181	8.4	33
179	Elastic fields of dislocation loops in three-dimensional anisotropic bimaterials. *Journal of the Mechanics and Physics of Solids*, **2012**, 60, 418-431	5	33
178	Statistics of fracture for an elastic notched composite lamina containing weibull fibers Part II. Probability models of crack growth. *Engineering Fracture Mechanics*, **1997**, 57, 267-299	4.2	33
177	Enhanced Plasticity via Kinking in Cubic Metallic Nanolaminates. *Advanced Engineering Materials*, **2015**, 17, 781-785	3.5	32
176	Theoretical and computational comparison of models for dislocation dissociation and stacking fault/core formation in fcc crystals. *Journal of the Mechanics and Physics of Solids*, **2016**, 95, 719-741	5	32
175	Influence of slip and twinning on the crystallographic stability of bimetal interfaces in nanocomposites under deformation. *Acta Materialia*, **2014**, 72, 137-147	8.4	32
174	Predicting Texture Evolution in Ta and Ta-10W Alloys Using Polycrystal Plasticity. *Jom*, **2015**, 67, 2670-2674	2.1	31
173	Analysis of substructure evolution during simple shear of polycrystals by means of a combined viscoplastic self-consistent and disclination modeling approach. *Acta Materialia*, **2006**, 54, 985-995	8.4	31
172	Delamination dynamics in through-thickness reinforced laminates with application to DCB specimen. *International Journal of Fracture*, **2002**, 118, 119-144	2.3	31
171	Rate and temperature dependent deformation behavior of as-cast WE43 magnesium-rare earth alloy manufactured by direct-chill casting. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2018**, 712, 50-64	5.3	31

170	Coupled texture and non-Schmid effects on yield surfaces of body-centered cubic polycrystals predicted by a crystal plasticity finite element approach. *International Journal of Solids and Structures*, **2017**, 109, 22-32	3.1	30
169	Scale and twist effects on the strength of nanostructured yarns and reinforced composites. *Nanotechnology*, **2009**, 20, 485702	3.4	30
168	The strength and toughness of cement reinforced with bone-shaped steel wires. *Composites Science and Technology*, **2000**, 60, 1753-1761	8.6	30
167	Phase-field-based calculations of the disregistry fields of static extended dislocations in FCC metals. *Philosophical Magazine*, **2019**, 99, 1400-1428	1.6	30
166	Self-energy of elliptical dislocation loops in anisotropic crystals and its application for defect-free core/shell nanowires. *Acta Materialia*, **2011**, 59, 7114-7124	8.4	29
165	Elevated Temperature Effects on the Plastic Anisotropy of an Extruded Mg-4 Wt Pct Li Alloy: Experiments and Polycrystal Modeling. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2017**, 48, 446-458	2.3	28
164	Microstructure effects on the recrystallization of low-symmetry alpha-uranium. *Journal of Nuclear Materials*, **2015**, 465, 189-195	3.3	28
163	Multiscale Modeling of Microstructure-Property Relationships of Polycrystalline Metals during Thermo-Mechanical Deformation. *Advanced Engineering Materials*, **2018**, 20, 1700956	3.5	28
162	An atomic-scale modeling and experimental study of <c+a> dislocations in Mg. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2017**, 695, 270-278	5.3	27
161	Prediction of the plastic anisotropy of magnesium alloys with synthetic textures and implications for the effect of texture on formability. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2016**, 675, 345-360	5.3	27
160	Stacking fault emission from grain boundaries: Material dependencies and grain size effects. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing* , **2014**, 600, 200-210	5.3	27
159	Characterization of deformation textures in pure copper processed by equal channel angular extrusion via route A. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2006**, 431, 339-345	5.3	27
158	Shear-lag model for a single fiber metal matrix composite with an elasto-plastic matrix and a slipping interface. *International Journal of Solids and Structures*, **2004**, 41, 4197-4218	3.1	26
157	Microstructure and texture evolution in Mg/Nb layered materials made by accumulative roll bonding. *International Journal of Plasticity*, **2020**, 125, 1-26	7.6	26
156	Homogenization of plastic deformation in heterogeneous lamella structures. *Materials Research Letters*, **2017**, 5, 251-257	7.4	25
155	NEW METHODOLOGY FOR DETERMINING IN SITU FIBER, MATRIX AND INTERFACE STRESSES IN DAMAGED MULTIFIBER COMPOSITES. *Science and Engineering of Composite Materials*, **1998**, 7, 151-204	1.5	25
154	Local slip resistances in equal-molar MoNbTi multi-principal element alloy. *Acta Materialia*, **2021**, 202, 68-79	8.4	25
153	A comparison of different continuum approaches in modeling mixed-type dislocations in Al. *Modelling and Simulation in Materials Science and Engineering*, **2019**, 27, 074004	2	24

152	Stress profiles and energy release rates around fiber breaks in a lamina with propagating zones of matrix yielding and debonding. *Composites Science and Technology*, **1997**, 57, 869-885	8.6	24
151	Plastic anisotropy in aluminum and copper pre-strained by equal channel angular extrusion. *Journal of Materials Science*, **2007**, 42, 1733-1750	4.3	24
150	Distributions and size scalings for strength in a one-dimensional random lattice with load redistribution to nearest and next-nearest neighbors. *Physical Review E*, **2000**, 62, 1622-45	2.4	24
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148	Interaction of small mobile stacking fault tetrahedra with free surfaces, dislocations, and interfaces in Cu and Cu-Nb. *Physical Review B*, **2016**, 93,	3.3	23
147	Relationship between monolayer stacking faults and twins in nanocrystals. *Acta Materialia*, **2015**, 88, 207-217	8.4	23
146	Bridged crack models for the toughness of composites reinforced with curved nanotubes. *Journal of the Mechanics and Physics of Solids*, **2011**, 59, 1938-1952	5	23
145	Statistical strength of twisted fiber bundles with load sharing controlled by frictional length scales. *Journal of Mechanics of Materials and Structures*, **2007**, 2, 773-791	1.2	23
144	Modeling the plastic anisotropy in pure copper after one pass of ECAE. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2005**, 410-411, 201-206	5.3	23
143	Atomistic calculations of the generalized stacking fault energies in two refractory multi-principal element alloys. *Intermetallics*, **2020**, 124, 106844	3.5	23
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