# Irene Beyerlein

## List of Publications by Year in Descending Order



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| 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 | Visualization and validation of twin nucleation and early-stage growth in magnesium.. *Nature Communications*, **2022**, 13, 20 | 17.4 | 0 |
| 312 | Fabrication and Characterization of High-Quality Epitaxial Nanocolumnar Niobium Films with Abrupt Interfaces on YSZ(001). *Journal of Physical Chemistry C*, **2022**, 126, 2098-2107 | 3.8 | 1 |
| 311 | Helium irradiation-induced ultrahigh hardening in niobium. *Acta Materialia*, **2022**, 226, 117656 | 8.4 | 2 |
| 310 | Development of grain-scale slip activity and lattice rotation fields in Inconel 718. *Acta Materialia*, **2022**, 226, 117627 | 8.4 | 1 |
| 309 | Line-length-dependent dislocation glide in refractory multi-principal element alloys. *Applied Physics Letters*, **2022**, 120, 061901 | 3.4 | 1 |
| 308 | Role of layer thickness and dislocation distribution in confined layer slip in nanolaminated Nb. *International Journal of Plasticity*, **2022**, 152, 103239 | 7.6 | 0 |
| 307 | Transitions in the morphology and critical stresses of gliding dislocations in multiprincipal element alloys. *Physical Review Materials*, **2022**, 6, | 3.2 | 1 |
| 306 | Phase-field modeling of the interactions between an edge dislocation and an array of obstacles. *Computer Methods in Applied Mechanics and Engineering*, **2022**, 389, 114426 | 5.7 | 3 |
| 305 | Twinning pathways enabled by precipitates in AZ91. *Materialia*, **2022**, 21, 101292 | 3.2 | 0 |
| 304 | Geometrically necessary dislocation density evolution as a function of microstructure and strain rate. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2022**, 831, 142224 | 5.3 | 4 |
| 303 | Shock-induced amorphization in medium entropy alloy CoCrNi. *Scripta Materialia*, **2022**, 209, 114379 | 5.6 | 4 |
| 302 | Energetically favorable dislocation/nanobubble bypass mechanism in irradiation conditions. *Acta Materialia*, **2022**, 230, 117849 | 8.4 | 0 |
| 301 | Study of the interplay between lower-order and higher-order energetic strain-gradient effects in polycrystal plasticity. *Journal of the Mechanics and Physics of Solids*, **2022**, 104906 | 5 | 0 |
| 300 | Texture evolution and temperature-dependent deformation modes in ambient- and cryogenic-rolled nanolayered Zr-2.5Nb. *Acta Materialia*, **2022**, 118023 | 8.4 | 0 |
| 299 | Atomistic simulations of the local slip resistances in four refractory multi-principal element alloys. *International Journal of Plasticity*, **2021**, 149, 103157 | 7.6 | 5 |
| 298 | Role of local chemical fluctuations in the shock dynamics of medium entropy alloy CoCrNi. *Acta Materialia*, **2021**, 221, 117380 | 8.4 | 7 |
| 297 | Understanding the interaction of extension twinning and basal-plate precipitates in Mg-9Al using precession electron diffraction. *Materialia*, **2021**, 15, 101044 | 3.2 | 5 |

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| 296 | Hierarchical and heterogeneous multiphase metallic nanomaterials and laminates. *MRS Bulletin*, **2021**, 46, 236-243 | 3.2 | 2 |
| 295 | The effects of free surfaces on deformation twinning in HCP metals. *Materialia*, **2021**, 101124 | 3.2 | 2 |
| 294 | Generalized stacking fault energies and Peierls stresses in refractory body-centered cubic metals from machine learning-based interatomic potentials. *Computational Materials Science*, **2021**, 192, 110364 | 3.2 | 16 |
| 293 | Effect of interface structure on dislocation glide behavior in nanolaminates. *Journal of Materials Research*, **2021**, 36, 2802-2815 | 2.5 | 2 |
| 292 | Manipulating deformation mechanisms with Y alloying of Mg. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2021**, 817, 141373 | 5.3 | 2 |
| 291 | Bessel function descriptions of magneto-chiral interactions (DMI)-magnetic and spin flexoelectric skyrmions. *Physica B: Condensed Matter*, **2021**, 613, 412980 | 2.8 | |
| 290 | Multiscale modeling of interface-mediated mechanical, thermal, and mass transport in heterogeneous materials: Perspectives and applications. *Journal of Materials Research*, **2021**, 36, 2601-2614 | 2.5 | 2 |
| 289 | Role of interface-affected dislocation motion on the strength of Mg/Nb nanolayered composites inferred by dual-mode confined layer slip crystal plasticity. *Journal of the Mechanics and Physics of Solids*, **2021**, 152, 104421 | 5 | 2 |
| 288 | Insight into microstructure-sensitive elastic strain concentrations from integrated computational modeling and digital image correlation. *Scripta Materialia*, **2021**, 192, 78-82 | 5.6 | 10 |
| 287 | Heterostructured materials: superior properties from hetero-zone interaction. *Materials Research Letters*, **2021**, 9, 1-31 | 7.4 | 160 |
| 286 | Local slip resistances in equal-molar MoNbTi multi-principal element alloy. *Acta Materialia*, **2021**, 202, 68-79 | 8.4 | 25 |
| 285 | Interface-facilitated stable plasticity in ultra-fine layered FeAl/FeAl2 micro-pillar at high temperature. *Journal of Materials Science and Technology*, **2021**, 73, 61-65 | 9.1 | 5 |
| 284 | Accommodation and formation of {1□012} twins in Mg-Y alloys. *Acta Materialia*, **2021**, 204, 116514 | 8.4 | 7 |
| 283 | On the significance of model design in atomistic calculations of the Peierls stress in Nb. *Computational Materials Science*, **2021**, 188, 110150 | 3.2 | 6 |
| 282 | Dislocation-induced Y segregation at basal-prismatic interfaces in Mg. *Computational Materials Science*, **2021**, 188, 110241 | 3.2 | 2 |
| 281 | Adjustment of the Mechanical Properties of Mg2Nd and Mg2Yb by Optimizing Their Microstructures. *Metals*, **2021**, 11, 377 | 2.3 | 1 |
| 280 | Atomic-Scale Hidden Point-Defect Complexes Induce Ultrahigh-Irradiation Hardening in Tungsten. *Nano Letters*, **2021**, 21, 5798-5804 | 11.5 | 2 |
| 279 | Plasticity and structure evolution of ferrite and martensite in DP 1180 during tension and cyclic bending under tension to large strains. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2021**, 820, 141536 | 5.3 | 8 |

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| 278 | Slip localization in Inconel 718: A three-dimensional and statistical perspective. *Acta Materialia*, **2021**, 215, 117037 | 8.4 | 5 |
| 277 | Role of local chemical fluctuations in the melting of medium entropy alloy CoCrNi. *Applied Physics Letters*, **2021**, 119, 121904 | 3.4 | 2 |
| 276 | Effect of neighboring grain orientation on strain localization in slip bands in HCP materials. *International Journal of Plasticity*, **2021**, 144, 103026 | 7.6 | 3 |
| 275 | Grain size dependent microstructure and texture evolution during dynamic deformation of nanocrystalline face-centered cubic materials. *Acta Materialia*, **2021**, 216, 117088 | 8.4 | 2 |
| 274 | Precipitation characteristics and distributions of subsurface hydrides in zirconium. *Acta Materialia*, **2021**, 216, 117146 | 8.4 | 4 |
| 273 | Deformation twin interactions with grain boundary particles in multi-phase magnesium alloys. *Acta Materialia*, **2021**, 219, 117225 | 8.4 | 5 |
| 272 | Modeling lattice rotation fields from discrete crystallographic slip bands in superalloys. *Extreme Mechanics Letters*, **2021**, 49, 101468 | 3.9 | |
| 271 | Role of crystallographic orientation on intragranular void growth in polycrystalline FCC materials. *International Journal of Plasticity*, **2021**, 147, 103104 | 7.6 | 1 |
| 270 | Non-orthogonal computational grids for studying dislocation motion in phase field approaches. *Computational Materials Science*, **2021**, 200, 110834 | 3.2 | 2 |
| 269 | Two-dimensional vacancy platelets as precursors for basal dislocation loops in hexagonal zirconium. *Nature Communications*, **2020**, 11, 5766 | 17.4 | 10 |
| 268 | Embracing the Chaos: Alloying Adds Stochasticity to Twin Embryo Growth. *Physical Review Letters*, **2020**, 125, 205503 | 7.4 | 4 |
| 267 | Twin hopping in nanolayered Zr-2.5Nb. *Materials Research Letters*, **2020**, 8, 307-313 | 7.4 | 7 |
| 266 | Toughening magnesium with gradient twin meshes. *Acta Materialia*, **2020**, 195, 468-481 | 8.4 | 6 |
| 265 | Mechanical behavior and texture evolution of WE43 magnesium-rare earth alloy in Split-Hopkinson Pressure Bar and Taylor Impact Cylinder Testing. *International Journal of Impact Engineering*, **2020**, 143, 103589 | 4 | 8 |
| 264 | Strain-Rate Sensitivity, Tension-Compression Asymmetry, r-Ratio, Twinning, and Texture Evolution of a Rolled Magnesium Alloy Mg-1.3Zn-0.4Ca-0.4Mn. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2020**, 51, 3858-3868 | 2.3 | 6 |
| 263 | Disconnection-mediated twin embryo growth in Mg. *Acta Materialia*, **2020**, 194, 437-451 | 8.4 | 11 |
| 262 | The effects of nanoscale confinement on the behavior of metal laminates. *Scripta Materialia*, **2020**, 187, 130-136 | 5.6 | 9 |
| 261 | Atomistic simulations of dynamics of an edge dislocation and its interaction with a void in copper: a comparative study. *Modelling and Simulation in Materials Science and Engineering*, **2020**, 28, 045004 | 2 | 14 |

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| 260 | Three-dimensional maps of geometrically necessary dislocation densities in additively manufactured Ni-based superalloy IN718. *International Journal of Plasticity*, **2020**, 131, 102709 | 7.6 | 18 |
| 259 | Interface facilitated transformation of voids directly into stacking fault tetrahedra. *Acta Materialia*, **2020**, 188, 623-634 | 8.4 | 9 |
| 258 | Local microstructure and micromechanical stress evolution during deformation twinning in hexagonal polycrystals. *Journal of Materials Research*, **2020**, 35, 217-241 | 2.5 | 10 |
| 257 | Comparative modeling of the disregistry and Peierls stress for dissociated edge and screw dislocations in Al. *International Journal of Plasticity*, **2020**, 129, 102689 | 7.6 | 22 |
| 256 | Atomic-level calculations and experimental study of dislocations in InSb. *Journal of Applied Physics*, **2020**, 127, 135104 | 2.5 | 3 |
| 255 | Mesoscale, Microstructure-Sensitive Modeling for Interface-Dominated, Nanostructured Materials **2020**, 1111-1152 | | 1 |
| 254 | Atomistic calculations of the generalized stacking fault energies in two refractory multi-principal element alloys. *Intermetallics*, **2020**, 124, 106844 | 3.5 | 23 |
| 253 | Revealing the deformation mechanisms for room-temperature compressive superplasticity in nanocrystalline magnesium. *Materialia*, **2020**, 11, 100731 | 3.2 | 4 |
| 252 | Influence of plastic properties on the grain size effect on twinning in Ti and Mg. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2020**, 771, 138644 | 5.3 | 12 |
| 251 | Elastic constants of pure body-centered cubic Mg in nanolaminates. *Computational Materials Science*, **2020**, 174, 109501 | 3.2 | 7 |
| 250 | 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 |
| 249 | Role of twinning on the omega-phase transformation and stability in zirconium. *Acta Materialia*, **2020**, 185, 211-217 | 8.4 | 9 |
| 248 | A phase field model for dislocations in hexagonal close packed crystals. *Journal of the Mechanics and Physics of Solids*, **2020**, 137, 103823 | 5 | 9 |
| 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 | Multiplicity of dislocation pathways in a refractory multiprincipal element alloy. *Science*, **2020**, 370, 95-101 | 33.3 | 65 |
| 245 | Effects of three-dimensional Cu/Nb interfaces on strengthening and shear banding in nanoscale metallic multilayers. *Acta Materialia*, **2020**, 199, 593-601 | 8.4 | 18 |
| 244 | Rare-earth- and aluminum-free, high strength dilute magnesium alloy for Biomedical Applications. *Scientific Reports*, **2020**, 10, 15839 | 4.9 | 6 |
| 243 | Achieving room-temperature brittle-to-ductile transition in ultrafine layered Fe-Al alloys. *Science Advances*, **2020**, 6, | 14.3 | 14 |

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| 242 | The effect of local chemical ordering on Frank-Read source activation in a refractory multi-principal element alloy. *International Journal of Plasticity*, **2020**, 134, 102850 | 7.6 | 17 |
| 241 | A 3D phase field dislocation dynamics model for body-centered cubic crystals. *Computational Materials Science*, **2020**, 171, 109217 | 3.2 | 17 |
| 240 | Predicting the size scaling in strength of nanolayered materials by a discrete slip crystal plasticity model. *International Journal of Plasticity*, **2020**, 124, 247-260 | 7.6 | 21 |
| 239 | Polycrystal plasticity modeling for load reversals in commercially pure titanium. *International Journal of Plasticity*, **2020**, 125, 294-313 | 7.6 | 19 |
| 238 | Processing of Dilute MgZnMnCa Alloy/Nb Multilayers by Accumulative Roll Bonding. *Advanced Engineering Materials*, **2020**, 22, 1900673 | 3.5 | 5 |
| 237 | 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 |
| 236 | Atomistic simulations of dipole tilt wall stability in thin films. *Thin Solid Films*, **2019**, 689, 137457 | 2.2 | 5 |
| 235 | Atomistic simulations of tungsten nanotubes under uniform tensile loading. *Journal of Applied Physics*, **2019**, 126, 095105 | 2.5 | 3 |
| 234 | Density functional theory calculations of generalized stacking fault energy surfaces for eight face-centered cubic transition metals. *Journal of Applied Physics*, **2019**, 126, 105112 | 2.5 | 19 |
| 233 | Synergetic effects of solute and strain in biocompatible Zn-based and Mg-based alloys. *Acta Materialia*, **2019**, 181, 423-438 | 8.4 | 11 |
| 232 | A single crystal plasticity finite element formulation with embedded deformation twins. *Journal of the Mechanics and Physics of Solids*, **2019**, 133, 103723 | 5 | 7 |
| 231 | Determination of minimal energy facet structures in Σ3 and Σ9 grain boundaries: Experiment and simulation. *Materialia*, **2019**, 5, 100221 | 3.2 | 2 |
| 230 | Microstructure insensitive twinning: A statistical analysis of incipient twins in high-purity titanium. *Materialia*, **2019**, 6, 100303 | 3.2 | 5 |
| 229 | Bi-metal interface-mediated defects distribution in neon ion bombarded Cu/Ag nanocomposites. *Scripta Materialia*, **2019**, 171, 1-5 | 5.6 | 9 |
| 228 | 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 |
| 227 | Revealing deformation mechanisms in MgY alloy by in situ deformation of nano-pillars with mediated lateral stiffness. *Journal of Materials Research*, **2019**, 34, 1542-1554 | 2.5 | 3 |
| 226 | Sequential obstacle interactions with dislocations in a planar array. *Acta Materialia*, **2019**, 174, 160-172 | 8.4 | 22 |
| 225 | Twin formation from a twin boundary in Mg during in-situ nanomechanical testing. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2019**, 759, 142-153 | 5.3 | 11 |

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| 224 | Strengthening of alloy AA6022-T4 by continuous bending under tension. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2019**, 758, 47-55 | 5.3 | 11 |
| 223 | BisQue for 3D Materials Science in the Cloud: Microstructure-Property Linkages. *Integrating Materials and Manufacturing Innovation*, **2019**, 8, 52-65 | 2.9 | 5 |
| 222 | Strength and ductility of bulk Cu/Nb nanolaminates exposed to extremely high temperatures. *Scripta Materialia*, **2019**, 166, 73-77 | 5.6 | 17 |
| 221 | Alloy design for mechanical properties: Conquering the length scales. *MRS Bulletin*, **2019**, 44, 257-265 | 3.2 | 12 |
| 220 | In situ transmission electron microscopy investigation on <c + a> slip in Mg. *Journal of Materials Research*, **2019**, 34, 1499-1508 | 2.5 | 4 |
| 219 | Ab initio-informed phase-field modeling of dislocation core structures in equal-molar CoNiRu multi-principal element alloys. *Modelling and Simulation in Materials Science and Engineering*, **2019**, 27, 084001 | 2 | 15 |
| 218 | Intrinsic and extrinsic size effects in materials. *Journal of Materials Research*, **2019**, 34, 2147 | 2.5 | 0 |
| 217 | The effect of strain path changes on texture evolution and deformation behavior of Ti6Al4V subjected to accumulative angular drawing. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2019**, 764, 138168 | 5.3 | 7 |
| 216 | Structure and properties of pseudomorphically transformed bcc Mg in Mg/Nb multilayered nanolaminates studied using synchrotron X-ray diffraction. *Journal of Applied Physics*, **2019**, 126, 025302 | 2.5 | 7 |
| 215 | Hierarchical 3D Nanolayered Duplex-Phase Zr with High Strength, Strain Hardening, and Ductility. *Physical Review Letters*, **2019**, 122, 255501 | 7.4 | 20 |
| 214 | Modeling dislocations with arbitrary character angle in face-centered cubic transition metals using the phase-field dislocation dynamics method with full anisotropic elasticity. *Mechanics of Materials*, **2019**, 139, 103200 | 3.3 | 18 |
| 213 | Computational homogenization for multiscale forward modeling of resonant ultrasound spectroscopy of heterogeneous materials. *Materials Characterization*, **2019**, 158, 109945 | 3.9 | 1 |
| 212 | Deformation profile and interface-mediated defect interaction in Cu/CuZr nanolaminates: An effective-temperature description. *Physical Review Materials*, **2019**, 3, | 3.2 | 1 |
| 211 | Phase-field-based calculations of the disregistry fields of static extended dislocations in FCC metals. *Philosophical Magazine*, **2019**, 99, 1400-1428 | 1.6 | 30 |
| 210 | Role of local stresses on co-zone twin-twin junction formation in HCP magnesium. *Acta Materialia*, **2019**, 168, 353-361 | 8.4 | 20 |
| 209 | Interface-driven mechanisms in cubic/noncubic nanolaminates at different scales. *MRS Bulletin*, **2019**, 44, 31-39 | 3.2 | 24 |
| 208 | Stronger and more failure-resistant with three-dimensional serrated bimetal interfaces. *Acta Materialia*, **2019**, 166, 231-245 | 8.4 | 22 |
| 207 | Modeling of trans-grain twin transmission in AZ31 via a neighborhood-based viscoplastic self-consistent model. *International Journal of Plasticity*, **2019**, 117, 21-32 | 7.6 | 19 |

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| 206 | Enhancing strength and thermal stability of TWIP steels with a heterogeneous structure. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2018**, 720, 231-237 | 5.3 | 14 |
| 205 | Multiscale Modeling of Microstructure-Property Relationships of Polycrystalline Metals during Thermo-Mechanical Deformation. *Advanced Engineering Materials*, **2018**, 20, 1700956 | 3.5 | 28 |
| 204 | Origin of plastic anisotropy in (ultra)-fine-grained Mg□n□r alloy processed by isothermal multi-step forging and rolling: Experiments and modeling. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2018**, 713, 81-93 | 5.3 | 22 |
| 203 | Reversed compressive yield anisotropy in magnesium with microlaminated structure. *Acta Materialia*, **2018**, 146, 12-24 | 8.4 | 20 |
| 202 | Effect of Grain Shape on Texture Formation during Severe Plastic Deformation of Pure Copper . *Advanced Engineering Materials*, **2018**, 20, 1600829 | 3.5 | 5 |
| 201 | Strength of nanoscale metallic multilayers. *Scripta Materialia*, **2018**, 145, 132-136 | 5.6 | 37 |
| 200 | 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 |
| 199 | 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 |
| 198 | Phenomenology of chiral Dzyaloshinskii-Moriya interactions in strained materials. *Physical Review B* , **2018**, 98, | 3.3 | 11 |
| 197 | Application of chord length distributions and principal component analysis for quantification and representation of diverse polycrystalline microstructures. *Materials Characterization*, **2018**, 145, 671-685 | 3.9 | 21 |
| 196 | Review of microstructure and micromechanism-based constitutive modeling of polycrystals with a low-symmetry crystal structure. *Journal of Materials Research*, **2018**, 33, 3711-3738 | 2.5 | 13 |
| 195 | Mesoscale, Microstructure-Sensitive Modeling for Interface-Dominated, Nanostructured Materials **2018**, 1-42 | | 2 |
| 194 | Defect-interface interactions in irradiated Cu/Ag nanocomposites. *Acta Materialia*, **2018**, 160, 211-223 | 8.4 | 43 |
| 193 | Room temperature deformation mechanisms of Mg/Nb nanolayered composites. *Journal of Materials Research*, **2018**, 33, 1311-1332 | 2.5 | 23 |
| 192 | Texture simulation of a severely cold rolled low carbon steel using polycrystal modeling. *International Journal of Plasticity*, **2018**, 109, 137-152 | 7.6 | 12 |
| 191 | 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 |
| 190 | Homogenization of plastic deformation in heterogeneous lamella structures. *Materials Research Letters*, **2017**, 5, 251-257 | 7.4 | 25 |
| 189 | Effects of He radiation on cavity distribution and hardness of bulk nanolayered Cu-Nb composites. *Journal of Nuclear Materials*, **2017**, 487, 311-316 | 3.3 | 19 |

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| 188 | 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 |
| 187 | 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 |
| 186 | Strain fields induced by kink band propagation in Cu-Nb nanolaminate composites. *Acta Materialia*, **2017**, 133, 303-315 | 8.4 | 49 |
| 185 | Microstructure Correlation with Formability for Biaxial Stretching of Magnesium Alloy AZ31B at Mildly Elevated Temperatures. *Jom*, **2017**, 69, 907-914 | 2.1 | 6 |
| 184 | Effects of Pressure and Number of Turns on Microstructural Homogeneity Developed in High-Pressure Double Torsion. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2017**, 48, 1249-1263 | 2.3 | 10 |
| 183 | Strong, Ductile, and Thermally Stable bcc-Mg Nanolaminates. *Scientific Reports*, **2017**, 7, 8264 | 4.9 | 37 |
| 182 | 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 |
| 181 | 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 |
| 180 | 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 |
| 179 | First-principles study of crystallographic slip modes in Zr. *Scientific Reports*, **2017**, 7, 8932 | 4.9 | 9 |
| 178 | Nanograin size effects on the strength of biphase nanolayered composites. *Scientific Reports*, **2017**, 7, 11251 | 4.9 | 11 |
| 177 | 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 |
| 176 | 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 |
| 175 | Yield symmetry and reduced strength differential in Mg-2.5Y alloy. *Acta Materialia*, **2016**, 120, 75-85 | 8.4 | 77 |
| 174 | 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 |
| 173 | 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 |
| 172 | Modeling discrete twin lamellae in a microstructural framework. *Scripta Materialia*, **2016**, 121, 84-88 | 5.6 | 46 |
| 171 | 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 |

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| 170 | The plasticity of highly oriented nano-layered Zr/Nb composites. *Acta Materialia*, **2016**, 115, 189-203 | 8.4 | 48 |
| 169 | Understanding dislocation mechanics at the mesoscale using phase field dislocation dynamics. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2016**, 374, | 3 | 37 |
| 168 | Statistical dislocation activation from grain boundaries and its role in the plastic anisotropy of nanotwinned copper. *Acta Materialia*, **2016**, 110, 8-18 | 8.4 | 15 |
| 167 | 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 |
| 166 | A relaxation method for the energy and morphology of grain boundaries and interfaces. *Journal of the Mechanics and Physics of Solids*, **2016**, 94, 388-408 | 5 | 13 |
| 165 | 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 |
| 164 | An analytical model of interfacial energy based on a lattice-matching interatomic energy. *Journal of the Mechanics and Physics of Solids*, **2016**, 89, 174-193 | 5 | 20 |
| 163 | A phase field dislocation dynamics model for a bicrystal interface system: An investigation into dislocation slip transmission across cube-on-cube interfaces. *International Journal of Plasticity*, **2016** , 79, 293-313 | 7.6 | 37 |
| 162 | Effect of local stress fields on twin characteristics in HCP metals. *Acta Materialia*, **2016**, 116, 143-154 | 8.4 | 104 |
| 161 | Coupled crystal orientation-size effects on the strength of nano crystals. *Scientific Reports*, **2016**, 6, 26254 | 4.9 | 21 |
| 160 | Tensile behavior and flow stress anisotropy of accumulative roll bonded Cu-Nb nanolaminates. *Applied Physics Letters*, **2016**, 108, 051903 | 3.4 | 51 |
| 159 | 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 |
| 158 | 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 |
| 157 | Manipulating dislocation nucleation and shear resistance of bimetal interfaces by atomic steps. *Acta Materialia*, **2016**, 113, 194-205 | 8.4 | 37 |
| 156 | Origin of texture development in orthorhombic uranium. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2016**, 665, 108-124 | 5.3 | 37 |
| 155 | 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 |
| 154 | Neutron reflectometry investigations of interfacial structures of Ti/TiN layers deposited by magnetron sputtering. *Thin Solid Films*, **2016**, 616, 399-407 | 2.2 | 9 |
| 153 | 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 |

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| 152 | Enhanced Plasticity via Kinking in Cubic Metallic Nanolaminates. *Advanced Engineering Materials*, **2015**, 17, 781-785 | 3.5 | 32 |
| 151 | Mesoscale investigations for the evolution of interfaces in plasticity. *Current Opinion in Solid State and Materials Science*, **2015**, 19, 203-211 | 12 | 9 |
| 150 | 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 |
| 149 | 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 |
| 148 | Enhancement of orientation gradients during simple shear deformation by application of simple compression. *Journal of Applied Physics*, **2015**, 117, 214309 | 2.5 | 43 |
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