

Hussein M Zbib

List of Publications by Year in descending order

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78
papers

3,040
citations

201385

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78
docs citations

78
times ranked

1742
citing authors

#	ARTICLE	IF	CITATIONS
1	A Continuum Dislocation Dynamics Crystal Plasticity Approach to Irradiated Body-Centered Cubic α -Iron. Journal of Engineering Materials and Technology, Transactions of the ASME, 2022, 144, .	0.8	3
2	Modeling of porosity and grain size effects on mechanical behavior of additively manufactured structures. Additive Manufacturing, 2021, 38, 101833.	1.7	2
3	A predictive discrete-continuum multiscale model of plasticity with quantified uncertainty. International Journal of Plasticity, 2021, 138, 102935.	4.1	19
4	Accelerating the Discovery of New DP Steel Using Machine Learning-Based Multiscale Materials Simulations. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 3268-3279.	1.1	6
5	A novel continuum approach to gradient plasticity based on the complementing concepts of dislocation and disequilibrium densities. Journal of the Mechanics and Physics of Solids, 2019, 132, 103680.	2.3	6
6	Dislocation Density-Based Multiscale Modeling of Deformation and Subgrain Texture in Polycrystals. Jom, 2019, 71, 4136-4143.	0.9	2
7	Creation of heterogeneous microstructures in copper using high-pressure torsion to enhance mechanical properties. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 756, 142-148.	2.6	22
8	Multiscale Dislocation-Based Plasticity. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2019, , 51-85.	0.3	2
9	3D printed high performance strain sensors for high temperature applications. Journal of Applied Physics, 2018, 123, .	1.1	30
10	Key Factors Influencing the Energy Absorption of Dual-Phase Steels: Multiscale Material Model Approach and Microstructural Optimization. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 2419-2440.	1.1	8
11	Recent advances in modeling of interfaces and mechanical behavior of multilayer metallic/ceramic composites. Journal of Materials Science, 2018, 53, 5604-5617.	1.7	25
12	A Continuum Deformation Model for Steel Coated with Nanolaminate Metallic Systems. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 6093-6109.	1.1	1
13	Molecular dynamics simulations of mechanical behavior in nanoscale ceramic-metallic multilayer composites. Materials Research Letters, 2017, 5, 306-313.	4.1	16
14	Stress/strain gradient plasticity model for size effects in heterogeneous nano-microstructures. International Journal of Plasticity, 2017, 97, 46-63.	4.1	53
15	Microstructure Optimization of Dual-Phase Steels Using a Representative Volume Element and a Response Surface Method: Parametric Study. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 6153-6177.	1.1	8
16	Strength and plastic deformation behavior of nanolaminate composites with pre-existing dislocations. Computational Materials Science, 2017, 138, 42-48.	1.4	13
17	Modeling and Characterization of Grain Boundaries and Slip Transmission in Dislocation Density-Based Crystal Plasticity. Crystals, 2017, 7, 152.	1.0	23
18	A multiscale gradient-dependent plasticity model for size effects. Philosophical Magazine, 2016, 96, 1883-1908.	0.7	24

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19	On the homogeneous nucleation and propagation of dislocations under shock compression. Philosophical Magazine, 2016, 96, 2752-2778.	0.7	27
20	Plasticity in Materials with Heterogeneous Microstructures. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 6608-6620.	1.1	12
21	A Mesoscale Model of Plasticity: Dislocation Dynamics and Patterning (One-Dimensional). Journal of Engineering Materials and Technology, Transactions of the ASME, 2016, 138, .	0.8	5
22	A dislocation-based model for deformation and size effect in multi-phase steels. International Journal of Plasticity, 2015, 72, 44-59.	4.1	57
23	On dislocation pileups and stress-gradient dependent plastic flow. International Journal of Plasticity, 2015, 74, 1-16.	4.1	37
24	A stochastic crystal plasticity framework for deformation of micro-scale polycrystalline materials. International Journal of Plasticity, 2015, 68, 21-33.	4.1	35
25	Multiscale modeling and simulation of deformation in nanoscale metallic multilayer systems. International Journal of Plasticity, 2014, 52, 33-50.	4.1	128
26	Prediction of flow stress and textures of AZ31 magnesium alloy at elevated temperature. Philosophical Magazine, 2014, 94, 3353-3367.	0.7	4
27	A continuum thermo-elastic model for damage and healing in self-healing glass materials. International Journal of Plasticity, 2014, 62, 1-16.	4.1	18
28	Statistical Quantification of the Impact of Surface Preparation on Yield Point Phenomena in Nickel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 4307-4315.	1.1	1
29	Stochastic effects in plasticity in small volumes. International Journal of Plasticity, 2014, 52, 117-132.	4.1	31
30	Multiscale Modeling of Inclusions and Precipitation Hardening in Metal Matrix Composites: Application to Advanced High-Strength Steels. Journal of Nanomechanics & Micromechanics, 2013, 3, 24-33.	1.4	15
31	The mechanical response of core-shell structures for nanoporous metallic materials. Philosophical Magazine, 2013, 93, 736-748.	0.7	31
32	Multiscale Modeling of Irradiation Induced Hardening in Iron Alloys. Materials Research Society Symposia Proceedings, 2012, 1444, 43.	0.1	0
33	Determination of Dislocation Interaction Strengths Using Discrete Dislocation Dynamics of Curved Dislocations. Journal of Engineering Materials and Technology, Transactions of the ASME, 2012, 134, .	0.8	22
34	Explicit incorporation of cross-slip in a dislocation density-based crystal plasticity model. Philosophical Magazine, 2012, 92, 3084-3100.	0.7	28
35	Crystallographic orientation and indenter radius effects on the onset of plasticity during nanoindentation. Journal of Materials Research, 2012, 27, 3058-3065.	1.2	19
36	Introduction to Discrete Dislocation Dynamics. , 2012, , 289-317.		2

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37	Analysis of plastic deformation in nanoscale metallic multilayers with coherent and incoherent interfaces. <i>International Journal of Plasticity</i> , 2011, 27, 1618-1639.	4.1	108
38	Treating internal surfaces and interfaces in discrete dislocation dynamics. <i>Journal of the Mechanical Behavior of Materials</i> , 2011, 20, 13-20.	0.7	0
39	Size-dependent strength in nanolaminate metallic systems. <i>Journal of Materials Research</i> , 2011, 26, 1179-1187.	1.2	36
40	Challenges Below the Grain Scale and Multiscale Models. , 2011, , 555-590.		0
41	Energies and distributions of dislocations in stacked pile-ups. <i>International Journal of Solids and Structures</i> , 2010, 47, 1144-1153.	1.3	23
42	Multiscale Modeling of Irradiation Induced Hardening in a-Fe, Fe-Cr and Fe-Ni Systems. <i>Materials Research Society Symposia Proceedings</i> , 2010, 1264, 1.	0.1	5
43	Pseudoelastic behavior of Cu-Ni composite nanowires. <i>Applied Physics Letters</i> , 2009, 94, .	1.5	12
44	Line-integral solution for the stress and displacement fields of an arbitrary dislocation segment in isotropic bi-materials in 3D space. <i>Philosophical Magazine</i> , 2009, 89, 2149-2166.	0.7	16
45	Deformation mechanisms and strength in nanoscale multilayer metallic composites with coherent and incoherent interfaces. <i>Applied Physics Letters</i> , 2009, 94, .	1.5	76
46	Multiscale Modeling of Dislocation Mechanisms in Nanoscale Multilayered Composites. <i>Materials Research Society Symposia Proceedings</i> , 2008, 1130, 130101.	0.1	3
47	Numerical analysis of plane cracks in strain-gradient elastic materials. <i>International Journal of Fracture</i> , 2006, 141, 403-430.	1.1	29
48	Multiscale Discrete Dislocation Dynamics Plasticity. , 2005, , 201-229.		10
49	Multiscale dislocation dynamics simulations of shock compression in copper single crystal. <i>International Journal of Plasticity</i> , 2005, 21, 2369-2390.	4.1	85
50	A Note on Dislocation Dynamics. <i>Journal of the Society of Mechanical Engineers</i> , 2005, 108, 805-808.	0.0	0
51	Modeling planar dislocation boundaries using multi-scale dislocation dynamics plasticity. <i>International Journal of Plasticity</i> , 2004, 20, 1059-1092.	4.1	42
52	A Multiscale Model of Plasticity Based on Discrete Dislocation Dynamics. <i>Journal of Engineering Materials and Technology</i> , <i>Transactions of the ASME</i> , 2002, 124, 78-87.	0.8	74
53	Stochastic Dislocation Dynamics under Creep Conditions in Metals. <i>Materials Research Society Symposia Proceedings</i> , 2002, 731, 171.	0.1	0
54	Special Issue on Multi-Scale Modeling of Plastic Deformation Phenomena. <i>Journal of Engineering Materials and Technology</i> , <i>Transactions of the ASME</i> , 2002, 124, 289-289.	0.8	0

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55	Stochastic Dislocation Dynamics for Dislocation-Defects Interaction: A Multiscale Modeling Approach. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2002, 124, 335-341.	0.8	27
56	Free-Surface Effects in 3D Dislocation Dynamics: Formulation and Modeling. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2002, 124, 342-351.	0.8	46
57	Dislocation dynamics simulations of the interaction between a short rigid fiber and a glide circular dislocation pile-up. <i>Computational Materials Science</i> , 2002, 24, 310-322.	1.4	33
58	Localized deformation and hardening in irradiated metals: Three-dimensional discrete dislocation dynamics simulations. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2002, 33, 285-296.	1.0	58
59	A multiscale model of plasticity. <i>International Journal of Plasticity</i> , 2002, 18, 1133-1163.	4.1	310
60	Crystal Plasticity from Dislocation Dynamics. <i>MRS Bulletin</i> , 2001, 26, 191-195.	1.7	31
61	The Interaction of a Circular Dislocation Pile-up with a Short Rigid Fiber: a 3-D Dislocation Dynamics Simulation. <i>Materials Research Society Symposia Proceedings</i> , 2001, 683, 1.	0.1	0
62	Stress Patterns of Deformation Induced Planar Dislocation Boundaries. <i>Materials Research Society Symposia Proceedings</i> , 2001, 683, 1.	0.1	4
63	Modeling of Dislocation Mobility in Metals: Effect of Obstacles and Thermal Processes. <i>Materials Research Society Symposia Proceedings</i> , 2001, 683, 1.	0.1	1
64	A strain-gradient thermodynamic theory of plasticity based on dislocation density and incompatibility tensors. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2001, 309-310, 416-419.	2.6	19
65	Internal structures of deformation induced planar dislocation boundaries. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2001, 309-310, 220-226.	2.6	28
66	A mesoscopic model for inelastic deformation and damage. <i>International Journal of Engineering Science</i> , 2001, 39, 1597-1615.	2.7	13
67	The treatment of traction-free boundary condition in three-dimensional dislocation dynamics using generalized image stress analysis. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2001, 309-310, 283-287.	2.6	21
68	Dislocation stress fields for dynamic codes using anisotropic elasticity: methodology and analysis. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2001, 309-310, 288-293.	2.6	34
69	Size and boundary effects in discrete dislocation dynamics: coupling with continuum finite element. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2001, 309-310, 294-299.	2.6	61
70	3D dislocation dynamics: stress-strain behavior and hardening mechanisms in fcc and bcc metals. <i>Journal of Nuclear Materials</i> , 2000, 276, 154-165.	1.3	135
71	Multiscale modelling of plastic flow localization in irradiated materials. <i>Nature</i> , 2000, 406, 871-874.	13.7	308
72	Optimum Forming Loading Paths for Pb-Sn Superplastic Sheet Materials. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 1999, 121, 341-345.	0.8	18

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73	On plastic deformation and the dynamics of 3D dislocations. International Journal of Mechanical Sciences, 1998, 40, 113-127.	3.6	411
74	Crystal plasticity: micro-shear banding in polycrystals using voronoi tessellation. International Journal of Plasticity, 1998, 14, 771-788.	4.1	55
75	A macroscopic model for plastic flow in metal-matrix composites. International Journal of Plasticity, 1995, 11, 471-499.	4.1	21
76	The Somigliana ring dislocation. Journal of Elasticity, 1992, 28, 223-246.	0.9	24
77	A gradient-dependent model for the Portevin-Le Chatelier effect. Scripta Metallurgica, 1988, 22, 1331-1336.	1.2	61
78	On the structure and width of shear bands. Scripta Metallurgica, 1988, 22, 703-708.	1.2	67