

A Amine Benzerga

List of Publications by Year in descending order

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96
papers

5,485
citations

81743

39
h-index

79541

73
g-index

103
all docs

103
docs citations

103
times ranked

2843
citing authors

#	ARTICLE	IF	CITATIONS
1	Failure of metals I: Brittle and ductile fracture. <i>Acta Materialia</i> , 2016, 107, 424-483.	3.8	730
2	Ductile Fracture by Void Growth to Coalescence. <i>Advances in Applied Mechanics</i> , 2010, 44, 169-305.	1.4	491
3	Plastic potentials for anisotropic porous solids. <i>European Journal of Mechanics, A/Solids</i> , 2001, 20, 397-434.	2.1	288
4	Anisotropic ductile fracture. <i>Acta Materialia</i> , 2004, 52, 4623-4638.	3.8	230
5	Anisotropic ductile fracture. <i>Acta Materialia</i> , 2004, 52, 4639-4650.	3.8	225
6	Ductile failure modeling. <i>International Journal of Fracture</i> , 2016, 201, 29-80.	1.1	181
7	A constitutive model for plastically anisotropic solids with non-spherical voids. <i>Journal of the Mechanics and Physics of Solids</i> , 2010, 58, 874-901.	2.3	167
8	Failure of metals III: Fracture and fatigue of nanostructured metallic materials. <i>Acta Materialia</i> , 2016, 107, 508-544.	3.8	153
9	Incorporating three-dimensional mechanisms into two-dimensional dislocation dynamics. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2004, 12, 159-196.	0.8	150
10	Coalescence-Controlled Anisotropic Ductile Fracture. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 1999, 121, 221-229.	0.8	143
11	Effect of Stress Triaxiality on the Flow and Fracture of Mg Alloy AZ31. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 3292-3307.	1.1	119
12	The stored energy of cold work: Predictions from discrete dislocation plasticity. <i>Acta Materialia</i> , 2005, 53, 4765-4779.	3.8	101
13	On the path-dependence of the fracture locus in ductile materials – Analysis. <i>International Journal of Plasticity</i> , 2012, 37, 157-170.	4.1	100
14	Power-Law Creep from Discrete Dislocation Dynamics. <i>Physical Review Letters</i> , 2012, 109, 265504.	2.9	95
15	Size effects under homogeneous deformation of single crystals: A discrete dislocation analysis†. <i>Journal of the Mechanics and Physics of Solids</i> , 2008, 56, 132-156.	2.3	94
16	Effective Yield Criterion Accounting for Microvoid Coalescence. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2014, 81, .	1.1	88
17	Work hardening in micropillar compression: In situ experiments and modeling. <i>Acta Materialia</i> , 2011, 59, 3825-3840.	3.8	86
18	Scale dependence of mechanical properties of single crystals under uniform deformation. <i>Scripta Materialia</i> , 2006, 54, 1937-1941.	2.6	84

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19	Effect of strain rate and temperature on fracture of magnesium alloy AZ31B. Acta Materialia, 2016, 112, 194-208.	3.8	84
20	Void growth and coalescence in anisotropic plastic solids. International Journal of Solids and Structures, 2011, 48, 1696-1710.	1.3	81
21	Synergistic effects of plastic anisotropy and void coalescence on fracture mode in plane strain. Modelling and Simulation in Materials Science and Engineering, 2002, 10, 73-102.	0.8	71
22	An analysis of exhaustion hardening in micron-scale plasticity. International Journal of Plasticity, 2008, 24, 1128-1157.	4.1	71
23	Finite-strain elasto-viscoplastic behavior of an epoxy resin: Experiments and modeling in the glassy regime. International Journal of Plasticity, 2014, 62, 138-161.	4.1	67
24	Micro-pillar plasticity: 2.5D mesoscopic simulations. Journal of the Mechanics and Physics of Solids, 2009, 57, 1459-1469.	2.3	56
25	A mechanism of failure in shear bands. Extreme Mechanics Letters, 2018, 23, 67-71.	2.0	56
26	On the path-dependence of the fracture locus in ductile materials: Experiments. International Journal of Solids and Structures, 2015, 71, 79-90.	1.3	54
27	Coalescence of voids by internal necking: Theoretical estimates and numerical results. Journal of the Mechanics and Physics of Solids, 2015, 75, 140-158.	2.3	52
28	On Void Coalescence Under Combined Tension and Shear. Journal of Applied Mechanics, Transactions ASME, 2015, 82, .	1.1	52
29	Effect of UV-aging on the mechanical and fracture behavior of low density polyethylene. Polymer Degradation and Stability, 2020, 180, 109185.	2.7	51
30	Effects of Manufacturing-Induced Voids on Local Failure in Polymer-Based Composites. Journal of Engineering Materials and Technology, Transactions of the ASME, 2008, 130, .	0.8	50
31	Interplay between the effects of deformation mechanisms and dynamic recrystallization on the failure of Mg-3Al-1Zn. Acta Materialia, 2019, 168, 448-472.	3.8	49
32	Void growth and coalescence in hexagonal close packed crystals. Journal of the Mechanics and Physics of Solids, 2019, 125, 198-224.	2.3	46
33	Three dimensional simulations of texture and triaxiality effects on the plasticity of magnesium alloys. Acta Materialia, 2017, 127, 54-72.	3.8	45
34	An approximate yield criterion for anisotropic porous media. Comptes Rendus - Mecanique, 2008, 336, 685-692.	2.1	43
35	High-temperature discrete dislocation plasticity. Journal of the Mechanics and Physics of Solids, 2015, 82, 1-22.	2.3	42
36	Evolution of the 3D plastic anisotropy of HCP metals: Experiments and modeling. International Journal of Plasticity, 2019, 117, 71-92.	4.1	41

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37	On plastic flow in notched hexagonal close packed single crystals. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 94, 273-297.	2.3	40
38	Towards designing anisotropy for ductility enhancement: A theory-driven investigation in Mg-alloys. <i>Acta Materialia</i> , 2017, 131, 349-362.	3.8	40
39	Modeling damage accumulation to fracture in a magnesium-rare earth alloy. <i>Acta Materialia</i> , 2017, 124, 225-236.	3.8	40
40	Theoretical and numerical analysis of void coalescence in porous ductile solids under arbitrary loadings. <i>International Journal of Plasticity</i> , 2017, 91, 160-181.	4.1	38
41	Smaller is softer: an inverse size effect in a cast aluminum alloy. <i>Acta Materialia</i> , 2001, 49, 3071-3083.	3.8	37
42	Determination of the intrinsic behavior of polymers using digital image correlation combined with video-monitored testing. <i>International Journal of Solids and Structures</i> , 2013, 50, 1869-1878.	1.3	37
43	On the notch ductility of a magnesium-rare earth alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 647, 74-83.	2.6	37
44	On fracture loci of ductile materials under non-proportional loading. <i>International Journal of Mechanical Sciences</i> , 2016, 117, 135-151.	3.6	35
45	Size Effects in the Charpy V-Notch Test. <i>International Journal of Fracture</i> , 2002, 116, 275-296.	1.1	33
46	Fracture Strains, Damage Mechanisms and Anisotropy in a Magnesium Alloy Across a Range of Stress Triaxialities. <i>Experimental Mechanics</i> , 2014, 54, 493-499.	1.1	33
47	Size effects in aluminium alloy castings. <i>Acta Materialia</i> , 2010, 58, 3006-3013.	3.8	31
48	Void growth and coalescence in a magnesium alloy studied by synchrotron radiation laminography. <i>Acta Materialia</i> , 2018, 155, 80-94.	3.8	31
49	A unified criterion for the growth and coalescence of microvoids. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 97, 19-36.	2.3	30
50	Creep crack growth by grain boundary cavitation under monotonic and cyclic loading. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 108, 68-84.	2.3	27
51	Plastic flow anisotropy drives shear fracture. <i>Scientific Reports</i> , 2019, 9, 1425.	1.6	26
52	Environmentally enhanced creep crack growth by grain boundary cavitation under cyclic loading. <i>Acta Materialia</i> , 2018, 153, 136-146.	3.8	25
53	Microstructural Origin of Residual Stress Relief in Aluminum. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2019, 50, 5038-5055.	1.1	25
54	An analysis of Lode effects in ductile failure. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 153, 104468.	2.3	25

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55	Discrete dislocation simulations of compression of tapered micropillars. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 101, 223-234.	2.3	23
56	A discrete dislocation analysis of the Bauschinger effect in microcrystals. <i>Acta Materialia</i> , 2008, 56, 5477-5491.	3.8	22
57	On the modeling of asymmetric yield functions. <i>International Journal of Solids and Structures</i> , 2016, 80, 486-500.	1.3	21
58	Discrete shear-transformation-zone plasticity modeling of notched bars. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 111, 18-42.	2.3	20
59	An analysis of impact-induced deformation and fracture modes in amorphous glassy polymers. <i>Engineering Fracture Mechanics</i> , 2008, 75, 3328-3342.	2.0	19
60	A phenomenological model of size-dependent hardening in crystal plasticity. <i>Philosophical Magazine</i> , 2008, 88, 3585-3601.	0.7	19
61	On the localization of plastic flow in glassy polymers. <i>European Journal of Mechanics, A/Solids</i> , 2013, 39, 251-267.	2.1	19
62	Finite element implementation of a macromolecular viscoplastic polymer model. <i>International Journal for Numerical Methods in Engineering</i> , 2013, 94, 895-919.	1.5	19
63	A computational framework for analyzing the dynamic response of glassy polymers. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2008, 197, 4485-4502.	3.4	18
64	A micromechanical model for the dynamic behavior of porous media in the void coalescence stage. <i>International Journal of Solids and Structures</i> , 2015, 71, 1-18.	1.3	17
65	Ductile failure as a constitutive instability in porous plastic solids. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 139, 103917.	2.3	15
66	Constitutive relations and their time integration for anisotropic elasto-plastic porous materials. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2016, 310, 495-534.	3.4	14
67	Energy dissipation rate and kinetic relations for Eshelby transformations. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 136, 103699.	2.3	14
68	A discrete dislocation analysis of strengthening in bilayer thin films. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2007, 15, S239-S254.	0.8	12
69	Photo-oxidation of semicrystalline polymers: Damage nucleation versus growth. <i>Polymer</i> , 2020, 188, 122090.	1.8	11
70	Numerical assessment of an anisotropic porous metal plasticity model. <i>Mechanics of Materials</i> , 2015, 90, 212-228.	1.7	10
71	Orientation-dependent plastic deformation in transformer steel: Experiments and dislocation dynamics simulations. <i>Acta Materialia</i> , 2015, 84, 256-264.	3.8	9
72	Discrete shear transformation zone plasticity. <i>Extreme Mechanics Letters</i> , 2016, 9, 21-29.	2.0	9

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73	Computational Methodology for Modeling Fracture in Fiber-Reinforced Polymer Composites. Journal of Aerospace Engineering, 2009, 22, 296-303.	0.8	8
74	Ductile Fracture in Plane Stress. Journal of Applied Mechanics, Transactions ASME, 2022, 89, .	1.1	8
75	Incorporating three-dimensional mechanisms into two-dimensional dislocation dynamics. Modelling and Simulation in Materials Science and Engineering, 2004, 12, 557-559.	0.8	7
76	A variational fast Fourier transform method for phase-transforming materials. Modelling and Simulation in Materials Science and Engineering, 2021, 29, 045001.	0.8	6
77	On the micromechanics of void mediated failure in HCP crystals. Journal of the Mechanics and Physics of Solids, 2022, 165, 104923.	2.3	6
78	Material inertia and size effects in the Charpy V-notch test. European Journal of Mechanics, A/Solids, 2004, 23, 373-386.	2.1	5
79	An analysis of deformation and failure in rectangular tensile bars accounting for void shape changes. International Journal of Fracture, 2021, 230, 133-156.	1.1	5
80	Micromechanics-based constitutive relations for post-localization analysis. MethodsX, 2018, 5, 1431-1439.	0.7	4
81	Limits on Transformation Strains for Non-Negative Dissipation. Journal of Applied Mechanics, Transactions ASME, 2019, 86, 051005.	1.1	4
82	Shear Transformation Zone (STZ) plasticity analysis of constrained shear. Mechanics of Materials, 2021, 160, 103935.	1.7	3
83	On the effects of dislocation density on micropillar strength. Materials Research Society Symposia Proceedings, 2009, 1185, 61.	0.1	2
84	Evolution of geometrically necessary dislocation density from computational dislocation dynamics. IOP Conference Series: Materials Science and Engineering, 2009, 3, 012008.	0.3	2
85	Analysis of shape memory alloy sensory particles for damage detection via substructure and continuum damage modeling. Proceedings of SPIE, 2016, , .	0.8	2
86	Strain Localization in Determining the Constitutive Response of Polymers. , 2016, , .		1
87	Modeling the 3D Plastic Anisotropy of a Magnesium Alloy Processed Using Severe Plastic Deformation. Minerals, Metals and Materials Series, 2019, , 283-287.	0.3	1
88	A Theory for Designing Ductile Materials with Anisotropy. Minerals, Metals and Materials Series, 2019, , 359-362.	0.3	1
89	Micromechanical Models of Ductile Damage and Fracture. , 2015, , 939-962.		1
90	A Predictive Multisurface Approach to Damage Modeling in Mg Alloys. Minerals, Metals and Materials Series, 2022, , 293-297.	0.3	1

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91	A Computational Framework for Analyzing the Dynamic Behavior and Failure of Amorphous Polymers. , 2008, , .		0
92	Prediction of Impact-Induced Damage Accumulation in a Composite Using a Macromolecular Polymer Model. , 2009, , .		0
93	Micromechanical Models of Ductile Damage and Fracture. , 2013, , 1-22.		0
94	Ductility Enhancement in Mg Alloys by Anisotropy Engineering. Minerals, Metals and Materials Series, 2017, , 153-158.	0.3	0
95	Discrete Dislocation Predictions for Single Crystal Hardening: Tension VS Bending. Solid Mechanics and Its Applications, 2004, , 235-242.	0.1	0
96	A Computational Methodology for Modeling Ductile Fracture. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2008, , 67-77.	0.1	0