Ronald E Miller

List of Publications by Citations

76 papers	6,215 citations	33 h-index	78 g-index
78 ext. papers	6,714 ext. citations	3.8 avg, IF	6.03 L-index

#	Paper	IF	Citations
76	Size-dependent elastic properties of nanosized structural elements. *Nanotechnology*, **2000**, 11, 139-147	3.4	1435
75	An adaptive finite element approach to atomic-scale mechanics—the quasicontinuum method. *Journal of the Mechanics and Physics of Solids*, **1999**, 47, 611-642	5	479
74	Atomistic/continuum coupling in computational materials science. *Modelling and Simulation in Materials Science and Engineering*, **2003**, 11, R33-R68	2	402
73	The Quasicontinuum Method: Overview, applications and current directions. *Journal of Computer-Aided Materials Design*, **2002**, 9, 203-239		326
72	A unified framework and performance benchmark of fourteen multiscale atomistic/continuum coupling methods. *Modelling and Simulation in Materials Science and Engineering*, **2009**, 17, 053001	2	266
71	Quasicontinuum Models of Interfacial Structure and Deformation. *Physical Review Letters*, **1998**, 80, 742-745	7.4	262
70	Multiscale plasticity modeling: coupled atomistics and discrete dislocation mechanics. *Journal of the Mechanics and Physics of Solids*, **2004**, 52, 755-787	5	222
69	Nanoindentation and incipient plasticity. *Journal of Materials Research*, **1999**, 14, 2233-2250	2.5	214
68	Quasicontinuum simulation of fracture at the atomic scale. *Modelling and Simulation in Materials Science and Engineering*, **1998**, 6, 607-638	2	186
67	Modeling Materials: Continuum, Atomistic and Multiscale Techniques **2011**,		180
66	A continuum plasticity model for the constitutive and indentation behaviour of foamed metals. *International Journal of Mechanical Sciences*, **2000**, 42, 729-754	5.5	174
65	Coupled atomistic and discrete dislocation plasticity. *Physical Review Letters*, **2002**, 89, 025501	7.4	165
64	Failure of sandwich beams with metallic foam cores. *International Journal of Solids and Structures*, **2001**, 38, 4901-4920	3.1	156
63	Finite-temperature quasicontinuum: molecular dynamics without all the atoms. *Physical Review Letters*, **2005**, 95, 060202	7.4	139
62	Quasicontinuum models of fracture and plasticity. *Engineering Fracture Mechanics*, **1998**, 61, 427-444	4.2	124
61	A coupled atomistic/continuum model of defects in solids. *Journal of the Mechanics and Physics of Solids*, **2002**, 50, 2085-2106	5	121
60	Modelling grain-boundary resistance in intergranular dislocation slip transmission. *Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties*, **2002**, 82, 2511-2527		96

59	Atomic-scale simulations of nanoindentation-induced plasticity in copper crystals with nanometer-sized nickel coatings. *Acta Materialia*, **2006**, 54, 33-45	8.4	94
58	A coupled atomistics and discrete dislocation plasticity simulation of nanoindentation into single crystal thin films. *Acta Materialia*, **2004**, 52, 271-284	8.4	94
57	The potential of atomistic simulations and the knowledgebase of interatomic models. *Jom*, **2011**, 63, 17-17	2.1	91
56	A finite-temperature dynamic coupled atomistic/discrete dislocation method. *Modelling and Simulation in Materials Science and Engineering*, **2005**, 13, 1101-1118	2	90
55	Deformation characteristics and stress□train response of nanotwinned copper via molecular dynamics simulation. *Acta Materialia*, **2009**, 57, 4364-4373	8.4	78
54	On the nonlocal nature of dislocation nucleation during nanoindentation. *Journal of the Mechanics and Physics of Solids*, **2008**, 56, 1203-1223	5	68
53	Coupled Atomistic/Discrete Dislocation Simulations of Nanoindentation at Finite Temperature. *Journal of Engineering Materials and Technology, Transactions of the ASME*, **2005**, 127, 358-368	1.8	58
52	Long-Range, Entangled Carbon Nanotube Networks in Polycarbonate. *Advanced Functional Materials*, **2003**, 13, 868-872	15.6	57
51	Multiscale simulation of material removal processes at the nanoscale. *Journal of the Mechanics and Physics of Solids*, **2007**, 55, 2384-2405	5	55
50	A stress-gradient based criterion for dislocation nucleation in crystals. *Journal of the Mechanics and Physics of Solids*, **2004**, 52, 1507-1525	5	52
49	New Perspectives in Plasticity Theory: Dislocation Nucleation, Waves, and Partial Continuity of Plastic Strain Rate. *Mathematics and Mechanics of Solids*, **2008**, 13, 292-315	2.3	51
48	Atomistic simulation of nanoindentation into copper multilayers. *Modelling and Simulation in Materials Science and Engineering*, **2005**, 13, 1089-1099	2	41
47	Finite-Temperature Quasi-Continuum. *Applied Mechanics Reviews*, **2013**, 65,	8.6	40
46	A non-local formulation of the peierls dislocation model. *Journal of the Mechanics and Physics of Solids*, **1998**, 46, 1845-1867	5	40
45	Hybrid Continuum Mechanics and Atomistic Methods for Simulating Materials Deformation and Failure. *MRS Bulletin*, **2007**, 32, 920-926	3.2	38
44	A molecular dynamics study of twin width, grain size and temperature effects on the toughness of 2D-columnar nanotwinned copper. *Modelling and Simulation in Materials Science and Engineering*, **2009**, 17, 055009	2	33
43	Critical analysis of local constitutive models for slip and decohesion. *Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties*, **1996**, 73, 803-827		30
42	Multiscale modeling of crack initiation and propagation at the nanoscale. *Journal of the Mechanics and Physics of Solids*, **2016**, 88, 35-49	5	26

41	Crystallographic Texture and Volume Fraction of and Phases in Zr-2.5Nb Pressure Tube Material During Heating and Cooling. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2012**, 43, 806-821	2.3	21
40	An Energy Balance Criterion for Nanoindentation-Induced Single and Multiple Dislocation Events. *Journal of Applied Mechanics, Transactions ASME*, **2006**, 73, 327-334	2.7	21
39	Direct Coupling of Atomistic and Continuum Mechanics in Computational Materials Science. *International Journal for Multiscale Computational Engineering*, **2003**, 1, 16	2.4	18
38	Grain boundary motion assisted via radiation cascades in bcc Fe. *Physical Review B*, **2008**, 78,	3.3	17
37	Continuum Mechanics and Thermodynamics: From Fundamental Concepts to Governing Equations **2011**,		13
36	Molecular dynamics at constant Cauchy stress. *Journal of Chemical Physics*, **2016**, 144, 184107	3.9	12
35	A perspective on atomistic-continuum multiscale modeling. *Modelling and Simulation in Materials Science and Engineering*, **2017**, 25, 071004	2	11
34	Superior Dynamic Penetration Resistance of Nanoscale Multilayer Polymer/Metal Films. *Journal of Applied Mechanics, Transactions ASME*, **2020**, 87,	2.7	10
33	Multiscale modeling of solids at the nanoscale: dynamic approach. *Canadian Journal of Physics*, **2008**, 86, 391-400	1.1	9
32	Energy absorption mechanisms of nanoscopic multilayer structures under ballistic impact loading. *Computational Materials Science*, **2021**, 195, 110504	3.2	9
31	Physical properties of liquid hexane and derived polar by-products of hexane autoxidation: molecular dynamics calculations using the TraPPE-UA force field. *Molecular Simulation*, **2013**, 39, 882-894	2	8
30	Synthesis and characterization of partially silane-terminated polyurethanes reinforced with acid-treated halloysite nanotubes for transparent armour systems. *Scientific Reports*, **2020**, 10, 13805	4.9	7
29	Density Functional Theory Rate Calculation of Hydrogen Abstraction Reactions of N-Phenyl- haphthylamine Antioxidants. *Industrial & Engineering Chemistry Research*, **2018**, 57, 876-880	3.9	6
28	Umbrella spherical integration: a stable meshless method for non-linear solids. *International Journal for Numerical Methods in Engineering*, **2007**, 69, 2807-2847	2.4	6
27	Molecular dynamics study of the mechanical behaviour of ultrathin polymer metal multilayers under extreme dynamic conditions. *Computational Materials Science*, **2020**, 184, 109951	3.2	6
26	Molecular dynamics study of the penetration resistance of multilayer polymer/ceramic nanocomposites under supersonic projectile impacts. *Extreme Mechanics Letters*, **2021**, 44, 101238	3.9	6
25	Crack Behaviour at Bi-Crystal Interfaces: A Mixed Atomistic and Continuum Approach. *Materials Research Society Symposia Proceedings*, **2000**, 653, 1		5
24	Molecular Dynamics Simulations of Shock Propagation and Spallation in Amorphous Polymers. *Journal of Applied Mechanics, Transactions ASME*, **2021**, 88,	2.7	5

23	Multiscale approach for determining hydrogen diffusivity in zirconium. *Modelling and Simulation in Materials Science and Engineering*, **2018**, 26, 085002	2	5
22	First principles study of hydrogen in lead zirconate titanate. *Smart Materials and Structures*, **2019**, 28, 034002	3.4	4
21	A Continuum Plasticity Model for the Constitutive Behaviour of Foamed Metals. *Materials Research Society Symposia Proceedings*, **1998**, 521, 39		4
20	Effect of single initial overload and mean load on the low-cycle fatigue life of normalized 300 M alloy steel. *International Journal of Fatigue*, **2020**, 130, 105273	5	4
19	The Theory and Implementation of the Quasicontinuum Method **2005**, 663-682		4
18	Benchmarking, validation and reproducibility of concurrent multiscale methods are still needed. *Modelling and Simulation in Materials Science and Engineering*, **2017**, 25, 071001	2	3
17	Multiscale modeling of ductile crystals at the nanoscale subjected to cyclic indentation. *Acta Materialia*, **2008**, 56, 2799-2809	8.4	3
16	A multi-state modified embedded atom method potential for titanium. *Modelling and Simulation in Materials Science and Engineering*, **2017**, 25, 015010	2	2
15	A Differential Scanning Calorimetry (DSC) Study of Phase Changes in an As-Received Zr-2.5Nb Pressure Tube Material during Continuous Heating and Cooling. *Materials Science Forum*, **2012**, 706-709, 853-858	0.4	2
14	Experimental observations of void growth in the Zr2.5Nb pressure tube alloy. *Journal of Nuclear Materials*, **2005**, 341, 231-234	3.3	2
13	Microstructural evidence of the toughening mechanisms of polyurethane reinforced with halloysite nanotubes under high strain-rate tensile loading. *Scientific Reports*, **2021**, 11, 13161	4.9	2
12	Molecular-level investigation on the spallation of polyurea. *MRS Communications*, **2021**, 11, 532-538	2.7	2
11	Crack Behaviour at Bi-Crystal Interfaces: A Mixed Atomistic and Continuum Approach. *Materials Research Society Symposia Proceedings*, **2000**, 653,		1
10	Effect of a Halloysite-polyurethane nanocomposite interlayer on the ballistic performance of laminate transparent armour. *Composites Part C: Open Access*, **2022**, 7, 100231	1.6	1
9	Quantum and classical molecular dynamics simulations of shocked polyurea and polyurethane. *Computational Materials Science*, **2022**, 203, 111166	3.2	1
8	A study of nano-indentation using coupled atomistic and discrete dislocation (CADD) modeling **2003**, 455-459		1
7	Finite Temperature Coupled Atomistic/Continuum Discrete Dislocation Dynamics Simulation of Nanoindentation **2006**, 225-234		1
6	Molecular dynamics study on the shock induced spallation of polyethylene. *Journal of Applied Physics*, **2022**, 131, 025102	2.5	0

5	Molecular dynamics simulation of pull-out Halloysite nanotube from polyurethane matrix. *Advances in Mechanical Engineering*, **2021**, 13, 168781402110446	1.2	0
4	Transiting the molecular potential energy surface along low energy pathways: the TRREAT algorithm. *Journal of Computational Chemistry*, **2013**, 34, 2502-13	3.5	
3	Coupled atomistic/continuum modelling of plasticity in materials **2007**, 189-219		
2	Denuded zones in zirconium pressure vessels: oxygen role examined via multi-scale diffusion model. *Modelling and Simulation in Materials Science and Engineering*, **2020**, 28, 065005	2	
1	Mesoscopic Length Scales for Deformed Nanostructures **2006**, 263-275		