Remi Dingreville

List of Publications by Year
in descending order

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83 papers	2,001 citations	331538 21 h-index	265120 42 g-index
86 all docs	86 docs citations	86 times ranked	1536 citing authors

#	Article	IF	Citations
1	Surface free energy and its effect on the elastic behavior of nano-sized particles, wires and films. Journal of the Mechanics and Physics of Solids, 2005, 53, 1827-1854.	2.3	658
2	A semi-analytical method to compute surface elastic properties. Acta Materialia, 2007, 55, 141-147.	3.8	86
3	Interfacial excess energy, excess stress and excess strain in elastic solids: Planar interfaces. Journal of the Mechanics and Physics of Solids, 2008, 56, 1944-1954.	2.3	86
4	Multi-morphology lattices lead to improved plastic energy absorption. Materials and Design, 2020, 194, 108883.	3.3	70
5	Accelerating phase-field-based microstructure evolution predictions via surrogate models trained by machine learning methods. Npj Computational Materials, 2021, 7, .	3.5	69
6	The third Sandia fracture challenge: predictions of ductile fracture in additively manufactured metal. International Journal of Fracture, 2019, 218, 5-61.	1.1	62
7	The effect of microstructural representation on simulations of microplastic ratcheting. International Journal of Plasticity, 2010, 26, 617-633.	4.1	42
8	From coherent to incoherent mismatched interfaces: A generalized continuum formulation of surface stresses. Journal of the Mechanics and Physics of Solids, 2014, 72, 40-60.	2.3	39
9	Microstructure morphology and concentration modulation of nanocomposite thin-films during simulated physical vapor deposition. Acta Materialia, 2020, 188, 181-191.	3.8	38
10	A semi-analytical method for quantifying the size-dependent elasticity of nanostructures. Modelling and Simulation in Materials Science and Engineering, 2008, 16, 025002.	0.8	37
11	Multiscale simulations of electron and ion dynamics in self-irradiated silicon. Physical Review B, 2020, 102, .	1.1	37
12	Tractionâ€“separation relationships for hydrogen induced grain boundary embrittlement in nickel via molecular dynamics simulations. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 650, 354-364.	2.6	35
13	On the interaction of solutes with grain boundaries. Acta Materialia, 2016, 104, 237-249.	3.8	34
14	Identification of dominant damage accumulation processes at grain boundaries during irradiation in nanocrystalline Î±-Fe: A statistical study. Acta Materialia, 2016, 110, 306-323.	3.8	31
15	Review of the synergies between computational modeling and experimental characterization of materials across length scales. Journal of Materials Science, 2016, 51, 1178-1203.	1.7	27
16	Accelerating phase-field predictions via recurrent neural networks learning the microstructure evolution in latent space. Computer Methods in Applied Mechanics and Engineering, 2022, 397, 115128.	3.4	27
17	A semi-analytical method to estimate interface elastic properties. Computational Materials Science, 2009, 46, 83-91.	1.4	25
18	Multi-scale simulation of radiation damage accumulation and subsequent hardening in neutron-irradiatedÎ±-Fe. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 015005.	0.8	25

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19	A data-driven surrogate model to rapidly predict microstructure morphology during physical vapor deposition. Applied Mathematical Modelling, 2020, 88, 589-603.	2.2	24
20	A primer on selecting grain boundary sets for comparison of interfacial fracture properties in molecular dynamics simulations. Scientific Reports, 2017, 7, 8332.	1.6	22
21	Compositional and structural origins of radiation damage mitigation in high-entropy alloys. Journal of Applied Physics, 2020, 128, .	1.1	22
22	Irradiation resistance of nanostructured interfaces in Zrâ€“Nb metallic multilayers. Journal of Materials Research, 2019, 34, 2239-2251.	1.2	21
23	Characterizing single isolated radiation-damage events from molecular dynamics via virtual diffraction methods. Journal of Applied Physics, 2018, 123, .	1.1	19
24	Spectrum of embrittling potencies and relation to properties of symmetric-tilt grain boundaries. Acta Materialia, 2021, 205, 116527.	3.8	19
25	Irradiation-induced grain boundary facet motion: In situ observations and atomic-scale mechanisms. Science Advances, 2022, 8, .	4.7	18
26	Investigation of grain-scale microstructural variability in tantalum using crystal plasticity-finite element simulations. Computational Materials Science, 2016, 117, 437-444.	1.4	16
27	Synchronous parallel spatially resolved stochastic cluster dynamics. Computational Materials Science, 2016, 120, 43-52.	1.4	16
28	Cavity Evolution at Grain Boundaries as a Function of Radiation Damage and Thermal Conditions in Nanocrystalline Nickel. Materials Research Letters, 2016, 4, 96-103.	4.1	16
29	In situ TEM investigation of self-ion irradiation of nanoporous gold. Journal of Materials Science, 2019, 54, 7271-7287.	1.7	16
30	Understanding the plasticity contributions during laser-shock loading and spall failure of Cu microstructures at the atomic scales. Computational Materials Science, 2021, 198, 110668.	1.4	16
31	Digital Twins for Materials. Frontiers in Materials, 2022, 9, .	1.2	15
32	Mechanics of point defect diffusion near dislocations and grain boundaries: A chemomechanical framework. Computational Materials Science, 2018, 144, 99-112.	1.4	14
33	Revealing inconsistencies in X-ray width methods for nanomaterials. Nanoscale, 2019, 11, 22456-22466.	2.8	14
34	Wave propagation and dispersion in elasto-plastic microstructured materials. International Journal of Solids and Structures, 2014, 51, 2226-2237.	1.3	12
35	Density Functional Analysis of Fluorite-Structured (Ce, Zr)O₂/CeO₂ Interfaces. Journal of Physical Chemistry C, 2017, 121, 14678-14687.	1.5	12
36	Microscopic and Macroscopic Characterization of Grain Boundary Energy and Strength in Silicon Carbide via Machine-Learning Techniques. ACS Applied Materials & Interfaces, 2021, 13, 3311-3324.	4.0	12

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37	Exploring wave propagation in heterogeneous metastructures using the relaxed micromorphic model. Journal of the Mechanics and Physics of Solids, 2021, 155, 104540.	2.3	12
38	Grain-boundary fracture mechanisms in Li<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e424" altimg="si3.svg"><mml:msub><mml:mrow /><mml:mrow><mml:mn>7</mml:mn></mml:mrow></mml:msub></mml:math>La<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e432" altimg="si4.svg"><mml:msub><mml:mrow /><mml:mrow><mml:mn>3</mml:mn></mml:mrow></mml:msu	2.3	12
39	Stability of immiscible nanocrystalline alloys in compositional and thermal fields. Acta Materialia, 2022, 226, 117620.	3.8	12
40	Reduced-order atomistic cascade method for simulating radiation damage in metals. Journal of Physics Condensed Matter, 2020, 32, 045402.	0.7	11
41	Pressureâ€Induced Formation and Mechanical Properties of 2D Diamond Boron Nitride. Advanced Science, 2021, 8, 2002541.	5.6	11
42	Compositional effects on the mechanical and thermal properties of MoNbTaTi refractory complex concentrated alloys. Materials and Design, 2022, 213, 110311.	3.3	11
43	A stochastic approach to capture crystal plasticity. International Journal of Plasticity, 2011, 27, 1432-1444.	4.1	10
44	Displacement rate and temperature equivalence in stochastic cluster dynamics simulations of irradiated pure Î±-Fe. Journal of Nuclear Materials, 2016, 480, 129-137.	1.3	10
45	Design and analysis of forward and reverse models for predicting defect accumulation, defect energetics, and irradiation conditions. Computational Materials Science, 2018, 148, 272-285.	1.4	10
46	Characterizing the Tensile Strength of Metastable Grain Boundaries in Silicon Carbide Using Machine Learning. Journal of Physical Chemistry C, 2020, 124, 24809-24821.	1.5	9
47	Size-dependent radiation damage mechanisms in nanowires and nanoporous structures. Acta Materialia, 2021, 215, 117018.	3.8	9
48	In situ Transmission Electron Microscopy He+ implantation and thermal aging of nanocrystalline iron. Journal of Nuclear Materials, 2016, 482, 139-146.	1.3	8
49	First-Principles Structural, Mechanical, and Thermodynamic Calculations of the Negative Thermal Expansion Compound Zr2(WO4)(PO4)2. ACS Omega, 2018, 3, 15780-15788.	1.6	8
50	Atomistic simulations of temperature and direction dependent threshold displacement energies in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si2.gif" overflow="scroll"><mml:mrow><mml:mi>Î±</mml:mi></mml:mrow></mml:math>- and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mrow><mml:mi>Î³</mml:mi></mml:mrow></mml:math>-uranium. Computational Materials Science, 2019, 157, 75-86.	1.4	8
51	Stress-induced transition from vacancy annihilation to void nucleation near microcracks. International Journal of Solids and Structures, 2021, 213, 103-110.	1.3	8
52	Atomistic modeling of radiation damage in crystalline materials. Modelling and Simulation in Materials Science and Engineering, 2022, 30, 023001.	0.8	8
53	Compositionally-Driven Formation Mechanism of Hierarchical Morphologies in Co-Deposited Immiscible Alloy Thin Films. Nanomaterials, 2021, 11, 2635.	1.9	8
54	Misfit dislocation networks in semi-coherent miscible phase boundaries: An example for Uâ€“Zr interfaces. Computational Materials Science, 2018, 154, 194-203.	1.4	7

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55	Fingerprinting shock-induced deformations via diffraction. Scientific Reports, 2021, 11, 9872.	1.6	7
56	Disconnection-Mediated Transition in Segregation Structures at Twin Boundaries. Journal of Physical Chemistry Letters, 2021, 12, 6875-6882.	2.1	7
57	Multiresolution Modeling of the Dynamic Loading of Metal Matrix Composites. Jom, 2013, 65, 203-214.	0.9	6
58	Electron Beam Effects during In-Situ Annealing of Self-Ion Irradiated Nanocrystalline Nickel. Materials Research Society Symposia Proceedings, 2015, 1809, 13-18.	0.1	6
59	An embedded-atom method potential parameterized for sulfur-induced embrittlement of nickel. Modelling and Simulation in Materials Science and Engineering, 2019, 27, 085016.	0.8	6
60	Decoding defect statistics from diffractograms via machine learning. Npj Computational Materials, 2021, 7, .	3.5	6
61	Hybrid Monte Carlo Simulation of Stress-Induced Texture Evolution with Inelastic Effects. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 575-581.	1.1	5
62	Mechanics of finite cracks in dissimilar anisotropic elastic media considering interfacial elasticity. Journal of the Mechanics and Physics of Solids, 2017, 99, 1-18.	2.3	5
63	Vacancy surface migration mechanisms in dilute nickel-chromium alloys. Scripta Materialia, 2021, 202, 113998.	2.6	5
64	An electronic origin to the oscillatory segregation behavior in Ni-Cr and other BCC defects in FCC metals. Acta Materialia, 2021, 218, 117215.	3.8	5
65	Statistical analysis of the interaction between irradiation-induced defects and triple junctions. Advanced Modeling and Simulation in Engineering Sciences, 2020, 7, .	0.7	5
66	Learning time-dependent deposition protocols to design thin films via genetic algorithms. Materials and Design, 2022, 219, 110815.	3.3	5
67	Scaling laws and stability of nano-sized defect clusters in niobium via atomistic simulations and statistical analysis. Journal of Materials Science, 2019, 54, 14002-14028.	1.7	4
68	Elastic Greenâ€™s Function in Anisotropic Bimaterials Considering Interfacial Elasticity. Journal of Elasticity, 2018, 131, 277-296.	0.9	3
69	Re-examining the silicon self-interstitial charge states and defect levels: A density functional theory and bounds analysis study. AIP Advances, 2020, 10, .	0.6	3
70	Invariant surface elastic properties in FCC metals and their correlation to bulk properties revealed by machine learning methods. Journal of the Mechanics and Physics of Solids, 2022, 163, 104852.	2.3	3
71	Atomistic Simulation Techniques to Model Hydrogen Segregation and Hydrogen Embrittlement in Metallic Materials. , 2018, , 1-34.		2
72	Temperature and radiation effects on brittle versus ductile fracture behavior in miscible phase boundaries: insight from atomistic simulations. International Journal of Fracture, 2021, 228, 1-13.	1.1	2

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73	The effects of dose, dose rate, and irradiation type and their equivalence on radiation-induced segregation in binary alloy systems via phase-field simulations. Journal of Nuclear Materials, 2022, 569, 153924.	1.3	2
74	Effective elastic modulus of nano-particles. , 0, , .		1
75	Uncertainty analysis for the net-section-collapse failure criterion of circumferentially cracked cylinders for multiple arbitrary-shaped circumferential cracks. International Journal of Pressure Vessels and Piping, 2014, 123-124, 30-45.	1.2	1
76	Synergies between computational modeling and experimental characterization of materials across length scales. Journal of Materials Science, 2016, 51, 1176-1177.	1.7	1
77	Modeling and characterization of interfaces — from an atomistic description to a continuum approach. , 2008, , .		0
78	Atomistic Simulation Techniques to Model Hydrogen Segregation and Hydrogen Embrittlement in Metallic Materials. , 2019, , 357-390.		0
79	Origins of the change in mechanical strength of silicon/gold nanocomposites during irradiation. Scientific Reports, 2021, 11, 19526.	1.6	0
80	Parameterized Reduced Order Models Constructed Using Hyper Dual Numbers. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 179-192.	0.3	0
81	Efficient Stochastic Finite Element Modeling Using Parameterized Reduced Order Models. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 193-201.	0.3	0
82	Surface Energy and Its Effects on Nanomaterials. , 2018, , 1-19.		0
83	Surface Energy and Its Effects on Nanomaterials. , 2020, , 2361-2380.		0