

Shenyang Hu

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

83

papers

3,745

citations

30

h-index

60

g-index

88

ext. papers

4,553

ext. citations

4.6

avg, IF

5.33

L-index

#	Paper	IF	Citations
83	Mesoporous silicon sponge as an anti-pulverization structure for high-performance lithium-ion battery anodes. <i>Nature Communications</i> , 2014 , 5, 4105	17.4	646
82	Effect of substrate constraint on the stability and evolution of ferroelectric domain structures in thin films. <i>Acta Materialia</i> , 2002 , 50, 395-411	8.4	392
81	A phase-field model for evolving microstructures with strong elastic inhomogeneity. <i>Acta Materialia</i> , 2001 , 49, 1879-1890	8.4	320
80	In situ TEM study of lithiation behavior of silicon nanoparticles attached to and embedded in a carbon matrix. <i>ACS Nano</i> , 2012 , 6, 8439-47	16.7	291
79	Solute segregation and coherent nucleation and growth near a dislocation – phase-field model integrating defect and phase microstructures. <i>Acta Materialia</i> , 2001 , 49, 463-472	8.4	160
78	Hierarchical porous silicon structures with extraordinary mechanical strength as high-performance lithium-ion battery anodes. <i>Nature Communications</i> , 2020 , 11, 1474	17.4	142
77	Atomistic calculations of interfacial energies, nucleus shape and size of γ precipitates in AlCu alloys. <i>Acta Materialia</i> , 2006 , 54, 4699-4707	8.4	111
76	Computer simulation of spinodal decomposition in constrained films. <i>Acta Materialia</i> , 2003 , 51, 5173-5185	8.4	89
75	Phase-field modeling of gas bubbles and thermal conductivity evolution in nuclear fuels. <i>Journal of Nuclear Materials</i> , 2009 , 392, 292-300	3.3	86
74	Effect of solutes on dislocation motion – phase-field simulation. <i>International Journal of Plasticity</i> , 2004 , 20, 403-425	7.6	86
73	A review: applications of the phase field method in predicting microstructure and property evolution of irradiated nuclear materials. <i>Npj Computational Materials</i> , 2017 , 3,	10.9	73
72	Hierarchical Materials as Tailored Nuclear Waste Forms: A Perspective. <i>Chemistry of Materials</i> , 2018 , 30, 4475-4488	9.6	69
71	Spectral implementation of an adaptive moving mesh method for phase-field equations. <i>Journal of Computational Physics</i> , 2006 , 220, 498-510	4.1	65
70	Phase-field modeling of void lattice formation under irradiation. <i>Journal of Nuclear Materials</i> , 2009 , 394, 155-159	3.3	62
69	Phase-field simulation of void migration in a temperature gradient. <i>Acta Materialia</i> , 2010 , 58, 3230-3237	8.4	62
68	Simulations of stress-induced twinning and de-twinning: A phase field model. <i>Acta Materialia</i> , 2010 , 58, 6554-6564	8.4	61
67	An iterative-perturbation scheme for treating inhomogeneous elasticity in phase-field models. <i>Journal of Computational Physics</i> , 2005 , 208, 34-50	4.1	57

66	Phase-field modeling of void migration and growth kinetics in materials under irradiation and temperature field. <i>Journal of Nuclear Materials</i> , 2010 , 407, 119-125	3-3	51
65	Thermodynamic description and growth kinetics of stoichiometric precipitates in the phase-field approach. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , 2007 , 31, 303-312	1-9	51
64	Spinodal decomposition in a film with periodically distributed interfacial dislocations. <i>Acta Materialia</i> , 2004 , 52, 3069-3074	8.4	42
63	Formation mechanism of gas bubble superlattice in UMo metal fuels: Phase-field modeling investigation. <i>Journal of Nuclear Materials</i> , 2016 , 479, 202-215	3-3	41
62	Models and simulations of nuclear fuel materials properties. <i>Journal of Alloys and Compounds</i> , 2007 , 444-445, 415-423	5-7	39
61	Phase-field simulations of intragranular fission gas bubble evolution in UO ₂ under post-irradiation thermal annealing. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2013 , 303, 62-67	1.2	37
60	Simulation of damage evolution in composites: A phase-field model. <i>Acta Materialia</i> , 2009 , 57, 2088-2098	8.4	37
59	Diffuse-interface modeling of composition evolution in the presence of structural defects. <i>Computational Materials Science</i> , 2002 , 23, 270-282	3-2	37
58	Atomistic studies of nucleation of He clusters and bubbles in bcc iron. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2013 , 303, 68-71	1.2	36
57	A phase-field model for deformation twinning. <i>Philosophical Magazine Letters</i> , 2011 , 91, 110-121	1	36
56	Investigation of the polymorphs and hydrolysis of uranium trioxide. <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 2013 , 296, 105-110	1.5	33
55	Assessment of effective thermal conductivity in UMo metallic fuels with distributed gas bubbles. <i>Journal of Nuclear Materials</i> , 2015 , 462, 64-76	3-3	32
54	Atomistic Simulations of Interactions between Cu Precipitates and an Edge Dislocation in a B.C.C. Fe Single Crystal. <i>Physica Status Solidi (B): Basic Research</i> , 2000 , 220, 845-846	1-3	30
53	Diffusion of small He clusters in bulk and grain boundaries in α -Fe. <i>Journal of Nuclear Materials</i> , 2013 , 442, S667-S673	3-3	29
52	Phase-field model of pitting corrosion kinetics in metallic materials. <i>Npj Computational Materials</i> , 2018 , 4,	10.9	28
51	Computer simulations of interstitial loop growth kinetics in irradiated bcc Fe. <i>Journal of Nuclear Materials</i> , 2012 , 427, 259-267	3-3	21
50	Phase-field simulations of Te-precipitate morphology and evolution kinetics in Te-rich CdTe crystals. <i>Journal of Crystal Growth</i> , 2009 , 311, 3184-3194	1.6	20
49	Effect of grain morphology on gas bubble swelling in UMo fuels [A 3D microstructure dependent Booth model. <i>Journal of Nuclear Materials</i> , 2016 , 480, 323-331	3-3	19

48	Phase-field modeling of stacking structure formation and transition of hydride precipitates in zirconium. <i>Acta Materialia</i> , 2019 , 165, 528-546	8.4	19
47	Atomistic simulations of thermodynamic properties of Xe gas bubbles in U10Mo fuels. <i>Journal of Nuclear Materials</i> , 2017 , 490, 49-58	3.3	18
46	Modeling the homogenization kinetics of as-cast U-10wt% Mo alloys. <i>Journal of Nuclear Materials</i> , 2016 , 471, 154-164	3.3	18
45	Mesoscale Phase-Field Modeling of Charge Transport in Nanocomposite Electrodes for Lithium-Ion Batteries. <i>Journal of Physical Chemistry C</i> , 2013 , 117, 28-40	3.8	17
44	A two-set order parameters phase-field modeling of crack deflection/penetration in a heterogeneous microstructure. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019 , 347, 1085-1104	5.7	15
43	Phase-field model for grain boundary grooving in multi-component thin films. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2006 , 14, 433-443	2	15
42	Non-classical nuclei and growth kinetics of Cr precipitates in FeCr alloys during ageing. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014 , 22, 025002	2	14
41	Investigation of magnetic signatures and microstructures for heat-treated ferritic/martensitic HT-9 alloy. <i>Acta Materialia</i> , 2013 , 61, 3285-3296	8.4	14
40	Short communication on Kinetics of grain growth and particle pinning in U-10wt.% Mo. <i>Journal of Nuclear Materials</i> , 2018 , 498, 254-258	3.3	13
39	Application of the phase-field method in predicting gas bubble microstructure evolution in nuclear fuels. <i>International Journal of Materials Research</i> , 2010 , 101, 515-522	0.5	11
38	Computational and experimental investigations of magnetic domain structures in patterned magnetic thin films. <i>Journal Physics D: Applied Physics</i> , 2015 , 48, 305001	3	10
37	Magnesium behavior and structural defects in Mg ⁺ ion implanted silicon carbide. <i>Journal of Nuclear Materials</i> , 2015 , 458, 146-155	3.3	10
36	A physics-based mesoscale phase-field model for predicting the uptake kinetics of radionuclides in hierarchical nuclear wastefrom materials. <i>Computational Materials Science</i> , 2019 , 159, 103-109	3.2	9
35	Microstructure-based model of nonlinear ultrasonic response in materials with distributed defects. <i>Journal of Applied Physics</i> , 2019 , 125, 145108	2.5	9
34	Ab initio study of defect properties in YPO ₄ . <i>Computational Materials Science</i> , 2012 , 54, 170-175	3.2	9
33	Evolution kinetics of interstitial loops in irradiated materials: a phase-field model. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2012 , 20, 015011	2	9
32	. <i>IEEE Magnetics Letters</i> , 2013 , 4, 3500104-3500104	1.6	9
31	Phase-field modeling of void anisotropic growth behavior in irradiated zirconium. <i>Computational Materials Science</i> , 2017 , 133, 22-34	3.2	8

30	Predicting Thermal Conductivity Evolution of Polycrystalline Materials Under Irradiation Using Multiscale Approach. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2012 , 43, 1060-1069	2.3	8
29	Phase-field modeling of void evolution and swelling in materials under irradiation. <i>Science China: Physics, Mechanics and Astronomy</i> , 2011 , 54, 856-865	3.6	8
28	Simulations of irradiated-enhanced segregation and phase separation in FeCuMn alloys. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017 , 25, 065007	2	7
27	Nonlinear ultrasonic response of voids and Cu precipitates in body-centered cubic Fe. <i>Journal of Applied Physics</i> , 2018 , 124, 035104	2.5	7
26	Thermodynamic and kinetic properties of intrinsic defects and Mg transmutants in 3CBiC determined by density functional theory. <i>Journal of Nuclear Materials</i> , 2014 , 448, 121-128	3.3	7
25	Defect cluster and nonequilibrium gas bubble associated growth in irradiated UMo Fuels A cluster dynamics and phase field model. <i>Journal of Nuclear Materials</i> , 2020 , 542, 152441	3.3	7
24	Recrystallization kinetics of cold-rolled U-10 wt% Mo. <i>Journal of Nuclear Materials</i> , 2019 , 513, 56-61	3.3	7
23	The effect of Mn/Ni on thermodynamic properties of critical nucleus in Fe-Cu-Mn (Ni) ternary alloys. <i>Journal of Nuclear Materials</i> , 2018 , 507, 59-67	3.3	7
22	Perspectives on multiscale modelling and experiments to accelerate materials development for fusion. <i>Journal of Nuclear Materials</i> , 2021 , 554, 153113	3.3	7
21	A Rate-TheoryPhase-Field Model of Irradiation-Induced Recrystallization in UMo Nuclear Fuels. <i>Jom</i> , 2017 , 69, 2554-2562	2.1	6
20	A quantitative phase-field model of gas bubble evolution in UO ₂ . <i>Computational Materials Science</i> , 2020 , 184, 109867	3.2	6
19	Simulation of magnetic hysteresis loops and magnetic Barkhausen noise of Iron containing nonmagnetic particles. <i>AIP Advances</i> , 2015 , 5, 077168	1.5	6
18	Effect of grain structure and strain rate on dynamic recrystallization and deformation behavior: A phase field-crystal plasticity model. <i>Computational Materials Science</i> , 2020 , 180, 109707	3.2	6
17	Phase-field modeling of coring structure evolution in PuGa alloys. <i>Acta Materialia</i> , 2007 , 55, 3641-3648	8.4	5
16	A Potts Model parameter study of particle size, Monte Carlo temperature, and Particle-Assisted Abnormal Grain GrowthComputational Materials Science, 2020 , 185, 109945	3.2	5
15	Simulations of post-recrystallization grain growth in monolithic U ₁₀ Mo fuel processing. <i>Journal of Nuclear Materials</i> , 2019 , 526, 151763	3.3	4
14	Interaction of crack-tip and notch-tip stress singularities for circular cylinder in torsion. <i>Theoretical and Applied Fracture Mechanics</i> , 1993 , 18, 259-272	3.7	4
13	Recrystallization and Grain Growth Simulations for Multiple-Pass Rolling and Annealing of U-10Mo. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2020 , 51, 533-544	2.3	4

12 Process Modeling of U-10wt% Mo Alloys Using Integrated Computational Materials Engineering 3

11 A improved equation of state for Xe gas bubbles in U-Mo fuels. *Journal of Nuclear Materials*, **2020**, 530, 151961 3.3 3

10 A phase field study of the thermal migration of gas bubbles in UO₂ nuclear fuel under temperature gradient. *Computational Materials Science*, **2020**, 183, 109817 3.2 2

9 A Monte Carlo model of irradiation-induced recrystallization in polycrystalline UMo fuels. *Journal of Nuclear Materials*, **2019**, 524, 164-176 3.3 2

8 Phase-Field Method Applied to Strain-Dominated Microstructure Evolution during Solid-State Phase Transformations **2005**, 271-296 2

7 The stress intensity of crack-tip and notch-tip in cylinder under torsion. *International Journal of Engineering Science*, **1995**, 33, 447-455 5.7 2

6 Microstructure-Dependent Rate Theory Model of Radiation-Induced Segregation in Binary Alloys. *Frontiers in Materials*, **2021**, 8, 4 1

5 Formation and dissociation of shear-induced high-energy dislocations: insight from molecular dynamics simulations. *Modelling and Simulation in Materials Science and Engineering*, **2022**, 30, 025012 2 0

4 Leaching model of radionuclides in metal-organic framework particles. *Computational Materials Science*, **2022**, 201, 110886 3.2 0

3 Reply to Comment on simulation of damage evolution in composites: A phase-field model, by H. Emmerich and D. Pilipenko *Scripta Materialia*, **2012**, 66, 128 5.6

2 Simulations of Ion Irradiation Induced Segregation in RPV Model Alloys. *Springer Proceedings in Energy*, **2018**, 75-84 0.2

1 Microstructure-dependent rate theory model of defect segregation and phase stability in irradiated polycrystalline LiAlO₂. *Modelling and Simulation in Materials Science and Engineering*, **2022**, 30, 025005 2