Roger E Stoller

List of Publications by Year
in descending order

86 papers	5,401 citations	87723 38 h-index	79541 73 g-index
89 all docs	89 docs citations	89 times ranked	2681 citing authors

#	Article	IF	Citations
1	Primary Radiation Damage Formation in Solids. , 2020, , 620-662.		10
2	Reaction Rate Theory. , 2020, , 717-753.		8
3	Radiation Damage Correlation. , 2020, , 456-467.		1
4	Improving atomic displacement and replacement calculations with physically realistic damage models. Nature Communications, 2018, 9, 1084.	5.8	241
5	Primary radiation damage: A review of current understanding and models. Journal of Nuclear Materials, 2018, 512, 450-479.	1.3	358
6	Accurate classical short-range forces for the study of collision cascades in Feâ€“Niâ€“Cr. Computer Physics Communications, 2017, 219, 11-19.	3.0	39
7	Electronâ€“phonon coupling in Ni-based binary alloys with application to displacement cascade modeling. Journal of Physics Condensed Matter, 2016, 28, 175501.	0.7	30
8	Direct Observation of Defect Range and Evolution in Ion-Irradiated Single Crystalline Ni and Ni Binary Alloys. Scientific Reports, 2016, 6, 19994.	1.6	131
9	Features of primary damage by high energy displacement cascades in concentrated Ni-based alloys. Journal of Applied Physics, 2016, 119, .	1.1	59
10	Impact of Short-Range Forces on Defect Production from High-Energy Collisions. Journal of Chemical Theory and Computation, 2016, 12, 2871-2879.	2.3	49
11	Atomistic material behavior at extreme pressures. Npj Computational Materials, 2016, 2, .	3.5	29
12	Specific features of defect and mass transport in concentrated fcc alloys. Acta Materialia, 2016, 115, 364-371.	3.8	75
13	The effect of alloying nickel with iron on the supersonic ballistic stage of high energy displacement cascades. Acta Materialia, 2016, 116, 136-142.	3.8	32
14	Differences in the accumulation of ion-beam damage in Ni and NiFe explained by atomistic simulations. Journal of Alloys and Compounds, 2016, 662, 415-420.	2.8	36
15	Slow relaxation of cascade-induced defects in Fe. Physical Review B, 2015, 91, .	1.1	22
16	Cascade morphology transition in bcc metals. Journal of Physics Condensed Matter, 2015, 27, 225402.	0.7	36
17	Lattice thermal conductivity of multi-component alloys. Journal of Alloys and Compounds, 2015, 648, 408-413.	2.8	62
18	Atomic-scale mechanisms of helium bubble hardening in iron. Journal of Nuclear Materials, 2015, 465, 448-454.	1.3	53

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19	Self-Evolving Atomistic Kinetic Monte Carlo simulations of defects in materials. Computational Materials Science, 2015, 100, 135-143.	1.4	33
20	Kinetic Activationâ€“Relaxation Technique and Self-Evolving Atomistic Kinetic Monte Carlo: Comparison of on-the-fly Kinetic Monte Carlo algorithms. Computational Materials Science, 2015, 100, 124-134.	1.4	23
21	How do energetic ions damage metallic surfaces?. Current Opinion in Solid State and Materials Science, 2015, 19, 277-286.	5.6	32
22	Molecular dynamics modeling of atomic displacement cascades in 3Câ€“SiC: Comparison of interatomic potentials. Journal of Nuclear Materials, 2015, 465, 83-88.	1.3	27
23	Recombination radius of a Frenkel pair and capture radius of a self-interstitial atom by vacancy clusters in bcc Fe. Journal of Physics Condensed Matter, 2015, 27, 335401.	0.7	17
24	Theoretical investigation of microstructure evolution and deformation of zirconium under neutron irradiation. Journal of Nuclear Materials, 2015, 461, 85-94.	1.3	43
25	Interstitial loop transformations in FeCr. Journal of Alloys and Compounds, 2015, 640, 219-225.	2.8	31
26	Influence of chemical disorder on energy dissipation and defect evolution in concentrated solid solution alloys. Nature Communications, 2015, 6, 8736.	5.8	477
27	Effect of pores and He bubbles on the thermal transport properties of UO2 by molecular dynamics simulation. Journal of Nuclear Materials, 2015, 456, 253-259.	1.3	28
28	Breakthrough in Understanding Radiation Growth of Zirconium. , 2015, , 729-758.		5
29	The behavior of small helium clusters near free surfaces in tungsten. Journal of Nuclear Materials, 2014, 454, 421-426.	1.3	32
30	Analysis of the anisotropy of point defect diffusion in hcp Zr. Acta Materialia, 2014, 78, 173-180.	3.8	76
31	An atomistic assessment of helium behavior in iron. Journal of Nuclear Materials, 2014, 455, 258-262.	1.3	39
32	Physical properties of F82H for fusion blanket design. Fusion Engineering and Design, 2014, 89, 1595-1599.	1.0	48
33	Cascade defect evolution processes: Comparison of atomistic methods. Journal of Nuclear Materials, 2013, 443, 66-70.	1.3	23
34	Solving the Puzzle of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mo stretchy="false">âŸ¨</mml:mo><mml:mn>100</mml:mn><mml:mo stretchy="false">âŸ©</mml:mo></mml:math>Interstitial Loop Formation in bcc Iron. Physical Review Letters, 2013, 110, 265503.	2.9	132
35	Molecular dynamics simulation of cascade-induced ballistic helium resolutioning from bubbles in iron. Journal of Nuclear Materials, 2013, 442, S674-S679.	1.3	7
36	Self-interstitial configurations in hcp Zr: a first principles analysis. Philosophical Magazine Letters, 2013, 93, 93-100.	0.5	40

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37	Recent progress of R&D activities on reduced activation ferritic/martensitic steels. Journal of Nuclear Materials, 2013, 442, S2-S8.	1.3	180
38	Radiation Growth of HCP Metals under Cascade Damage Conditions. Materials Research Society Symposia Proceedings, 2012, 1383, 55.	0.1	2
39	Self-evolving atomistic kinetic Monte Carlo: fundamentals and applications. Journal of Physics Condensed Matter, 2012, 24, 375402.	0.7	34
40	Dislocation nucleation and defect formation in copper by stepped spherical indenter. Philosophical Magazine, 2012, 92, 3158-3171.	0.7	7
41	Cascade annealing simulations of bcc iron using object kinetic Monte Carlo. Journal of Nuclear Materials, 2012, 423, 102-109.	1.3	39
42	<i>Ab initio</i>study of palladium and silicon carbide. Philosophical Magazine, 2011, 91, 458-467.	0.7	4
43	Simulating complex atomistic processes: On-the-fly kinetic Monte Carlo scheme with selective active volumes. Physical Review B, 2011, 84, .	1.1	64
44	An atomistic study of helium resolution in bcc iron. Journal of Nuclear Materials, 2011, 417, 1106-1109.	1.3	14
45	Atomistic studies of formation and diffusion of helium clusters and bubbles in BCC iron. Journal of Nuclear Materials, 2011, 417, 1110-1114.	1.3	74
46	Status and key issues of reduced activation ferritic/martensitic steels as the structural material for a DEMO blanket. Journal of Nuclear Materials, 2011, 417, 9-15.	1.3	144
47	Molecular dynamics study of influence of vacancy types defects on thermal conductivity of Î²-SiC. Journal of Nuclear Materials, 2011, 418, 174-181.	1.3	28
48	On the correlation between primary damage and long-term nanostructural evolution in iron under irradiation. Journal of Nuclear Materials, 2011, 419, 122-133.	1.3	28
49	Atomistic Study of Helium Bubbles in Fe: Equilibrium State. Materials Research Society Symposia Proceedings, 2011, 1298, 79.	0.1	2
50	Modeling the long-term evolution of the primary damage in ferritic alloys using coarse-grained methods. Journal of Nuclear Materials, 2010, 406, 39-54.	1.3	65
51	Elasticity to atomistics: Predictive modeling of defect behavior. Philosophical Magazine, 2010, 90, 803-804.	0.7	0
52	Technical issues of reduced activation ferritic/martensitic steels for fabrication of ITER test blanket modules. Fusion Engineering and Design, 2008, 83, 1471-1476.	1.0	84
53	Mean field rate theory and object kinetic Monte Carlo: A comparison of kinetic models. Journal of Nuclear Materials, 2008, 382, 77-90.	1.3	124
54	Irradiation Creep Behavior of Reduced Activation Ferritic/Martensitic Steel Irradiated in HFIR. Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, 2007, 71, 559-562.	0.2	0

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55	Stability of nanometer-sized oxide clusters in mechanically-alloyed steel under ion-induced displacement cascade damage conditions. Journal of Nuclear Materials, 2007, 360, 136-142.	1.3	99
56	Kinetics of coarsening of helium bubbles during implantation and post-implantation annealing. Journal of Nuclear Materials, 2007, 361, 149-159.	1.3	64
57	Destruction processes of large stacking fault tetrahedra induced by direct interaction with gliding dislocations. Journal of Nuclear Materials, 2006, 351, 285-294.	1.3	48
58	Calculation of helium defect clustering properties in iron using a multi-scale approach. Journal of Nuclear Materials, 2006, 351, 109-118.	1.3	83
59	Effect of displacement cascade structure and defect mobility on the growth of point defect clusters under irradiation. Journal of Nuclear Materials, 2006, 351, 39-46.	1.3	32
60	Dependence of radiation damage accumulation in iron on underlying models of displacement cascades and subsequent defect migration. Journal of Nuclear Materials, 2006, 355, 89-103.	1.3	44
61	On the features of dislocationâ€“obstacle interaction in thin films: large-scale atomistic simulation. Philosophical Magazine Letters, 2006, 86, 511-519.	0.5	35
62	Secondary factors influencing cascade damage formation. Journal of Nuclear Materials, 2004, 329-333, 1238-1242.	1.3	29
63	MD description of damage production in displacement cascades in copper and Î±-iron. Journal of Nuclear Materials, 2003, 323, 152-162.	1.3	142
64	The effect of free surfaces on cascade damage production in iron. Journal of Nuclear Materials, 2002, 307-311, 935-940.	1.3	32
65	Modeling of microstructure evolution in austenitic stainless steels irradiated under light water reactor condition. Journal of Nuclear Materials, 2001, 299, 53-67.	1.3	32
66	The Influence of PKA Direction on Displacement Cascade Evolution. Materials Research Society Symposia Proceedings, 2000, 650, 351.	0.1	5
67	The role of cascade energy and temperature in primary defect formation in iron. Journal of Nuclear Materials, 2000, 276, 22-32.	1.3	211
68	Evaluation of neutron energy spectrum effects and RPV thru-wall attenuation based on molecular dynamics cascade simulations. Nuclear Engineering and Design, 2000, 195, 129-136.	0.8	24
69	Subcascade formation in displacement cascade simulations: Implications for fusion reactor materials. Journal of Nuclear Materials, 1999, 271-272, 57-62.	1.3	87
70	Effect of neutron-irradiation on the spinodal decomposition of Fe-32% Cr model alloy. Journal of Nuclear Materials, 1996, 230, 219-225.	1.3	39
71	Rate theory modeling of defect evolution under cascade damage conditions: the influence of vacancy-type cascade remnants on defect evolution. Journal of Nuclear Materials, 1996, 233-237, 1022-1028.	1.3	8
72	Point defect survival and clustering fractions obtained from molecular dynamics simulations of high energy cascades. Journal of Nuclear Materials, 1996, 233-237, 999-1003.	1.3	75

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73	A comparison of displacement cascades in copper and iron by molecular dynamics and its application to microstructural evolution. Journal of Nuclear Materials, 1995, 223, 245-261.	1.3	276
74	Rate theory investigation of influence of cascade cluster formation and solute trapping on point defect agglomeration and extended defect evolution. Journal of Nuclear Materials, 1994, 212-215, 179-185.	1.3	6
75	An evaluation of low temperature radiation embrittlement mechanisms in ferritic alloys. Journal of Nuclear Materials, 1994, 210, 268-281.	1.3	40
76	The influence of He/dpa ratio and displacement rate on microstructural evolution: a comparison of theory and experiment. Journal of Nuclear Materials, 1994, 210, 290-302.	1.3	37
77	Effects of Helium Pre-Implantation on the Microstructure and Mechanical Properties Of Irradiated 316 Stainless Steel. Materials Research Society Symposia Proceedings, 1994, 373, 207.	0.1	1
78	Dose dependence of the microstructural evolution in neutron-irradiated austenitic stainless steel. Journal of Nuclear Materials, 1993, 206, 266-286.	1.3	323
79	Numerical Estimation of Synergistic Effects of Displacement Damage and Helium Generation on Microstructural Evolution. Materials Transactions, JIM, 1992, 33, 795-801.	0.9	5
80	Modeling the effects of damage rate and He/dpa ratio on microstructural evolution. Journal of Nuclear Materials, 1992, 191-194, 1144-1149.	1.3	14
81	Preliminary Model of Radiation Damage in Ceramics. Journal of the American Ceramic Society, 1990, 73, 2446-2451.	1.9	4
82	The influence of helium on microstructural evolution: Implications for DT fusion reactors. Journal of Nuclear Materials, 1990, 174, 289-310.	1.3	111
83	The effects of helium implantation on microstructural evolution in an austenitic alloy. Journal of Nuclear Materials, 1988, 154, 286-304.	1.3	41
84	Analytical solutions for helium bubble and critical radius parameters using a hard sphere equation of state. Journal of Nuclear Materials, 1985, 131, 118-125.	1.3	115
85	A theoretical assessment of the effect of microchemical, microstructural and environmental mechanisms on swelling incubation in austenitic stainless steels. Journal of Nuclear Materials, 1984, 122, 514-519.	1.3	34
86	A model based fission-fusion correlation of cavity swelling in stainless steel. Journal of Nuclear Materials, 1981, 104, 1361-1365.	1.3	23