Zhongwen Yao

List of Publications by Year
in descending order

89 papers	1,652 citations	304743 22 h-index	377865 34 g-index
89 all docs	89 docs citations	89 times ranked	1063 citing authors

#	Article	IF	Citations
1	Dynamic observations of heavy-ion damage in Fe and Feâ€“Cr alloys. Journal of Nuclear Materials, 2009, 389, 197-202.	2.7	146
2	In situ study of defect accumulation in zirconium under heavy ion irradiation. Journal of Nuclear Materials, 2013, 433, 95-107.	2.7	65
3	Spatial ordering of nano-dislocation loops in ion-irradiated materials. Journal of Nuclear Materials, 2014, 455, 16-20.	2.7	58
4	In situ transmission electron microscopy and ion irradiation of ferritic materials. Microscopy Research and Technique, 2009, 72, 182-186.	2.2	52
5	Microstructural evolution of CANDU spacer material Inconel X-750 under in situ ion irradiation. Journal of Nuclear Materials, 2013, 443, 49-58.	2.7	51
6	TEM characterization of in-reactor neutron irradiated CANDU spacer material Inconel X-750. Journal of Nuclear Materials, 2014, 451, 88-96.	2.7	44
7	Molecular dynamics simulations of irradiation cascades in alpha-zirconium under macroscopic strain. Nuclear Instruments & Methods in Physics Research B, 2013, 303, 95-99.	1.4	38
8	Combination of back stress strengthening and Orowan strengthening in bimodal structured Feâ€“9Crâ€“Al ODS steel with high Al addition. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 739, 45-52.	5.6	37
9	Tunable chemical complexity to control atomic diffusion in alloys. Npj Computational Materials, 2020, 6, .	8.7	37
10	Strengthening and toughening austenitic steel by introducing gradient martensite via cyclic forward/reverse torsion. Materials and Design, 2018, 143, 150-159.	7.0	36
11	Irradiation damage and hardening in pure Zr and Zr-Nb alloys at 573â€¯K from self-ion irradiation. Materials and Design, 2019, 161, 147-159.	7.0	33
12	Ion irradiation-induced precipitation of Cr23C6 at dislocation loops in austenitic steel. Scripta Materialia, 2013, 68, 138-141.	5.2	32
13	Atomistic simulations of the formation of <c>-component dislocation loops in Î±-zirconium. Journal of Nuclear Materials, 2016, 478, 125-134.	2.7	30
14	Irradiation induced microstructural changes in Zr-Excel alloy. Journal of Nuclear Materials, 2013, 441, 138-151.	2.7	29
15	Shape of prismatic dislocation loops in anisotropicÎ±-Fe. Philosophical Magazine Letters, 2009, 89, 581-588.	1.2	28
16	Irradiation induced behavior of pure Ni single crystal irradiated with high energy protons. Journal of Nuclear Materials, 2003, 323, 388-393.	2.7	26
17	Dislocation-accelerated void formation under irradiation in zirconium. Acta Materialia, 2015, 82, 94-99.	7.9	26
18	Accumulation of dislocation loops in the Î± phase of Zr Excel alloy under heavy ion irradiation. Journal of Nuclear Materials, 2017, 491, 232-241.	2.7	25

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19	Elevated temperature irradiation damage in CANDU spacer material Inconel X-750. Journal of Nuclear Materials, 2014, 445, 227-234.	2.7	24
20	Effect of pack-chromizing temperature on microstructure and performance of AISI 5140 steel with Cr-coatings. Surface and Coatings Technology, 2018, 344, 656-663.	4.8	24
21	Ultrasensitive, Highly Stable, and Flexible Strain Sensor Inspired by Nature. ACS Applied Materials & Interfaces, 2022, 14, 16885-16893.	8.0	23
22	Atomistic simulations of Ni segregation to irradiation induced dislocation loops in Zr-Ni alloys. Acta Materialia, 2017, 140, 56-66.	7.9	22
23	A test of a phenomenological model of size dependent melting in Au nanoparticles. Acta Materialia, 2017, 136, 11-20.	7.9	22
24	Mechanisms for <100> interstitial dislocation loops to diffuse in BCC iron. Nature Communications, 2021, 12, 225.	12.8	22
25	Stability of Ni3(Al, Ti) Gamma Prime Precipitates in a Nickel-Based Superalloy Inconel X-750 Under Heavy Ion Irradiation. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 3422-3428.	2.2	21
26	Convoluted dislocation loops induced by helium irradiation in reduced-activation martensitic steel and their impact on mechanical properties. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 607, 390-396.	5.6	21
27	Highly Efficient Mechanoelectrical Energy Conversion Based on the Nearâ€Tip Stress Field of an Antifracture Slit Observed in Scorpions. Advanced Functional Materials, 2019, 29, 1807693.	14.9	21
28	Study of microstructure and precipitates of a Zr-2.5Nb-0.5Cu CANDUÂspacer material. Journal of Nuclear Materials, 2016, 481, 153-163.	2.7	20
29	Accelerated kinetic Monte Carlo: A case study; vacancy and dumbbell interstitial diffusion traps in concentrated solid solution alloys. Journal of Chemical Physics, 2020, 153, 074109.	3.0	20
30	Effects of alloying elements on the formation of <<i>c</i>>-component loops in Zr alloy Excel under heavy ion irradiation. Journal of Materials Research, 2015, 30, 1310-1334.	2.6	19
31	Zirconium hydrides and Fe redistribution in Zr-2.5%Nb alloy under ion irradiation. Journal of Nuclear Materials, 2016, 480, 332-343.	2.7	19
32	Effect of pre-existing dislocations on the formation of dislocation loops: Pure magnesium under electron irradiation. Journal of Nuclear Materials, 2018, 511, 43-55.	2.7	19
33	A mechanism for basal vacancy loop formation in zirconium. Scripta Materialia, 2019, 172, 72-76.	5.2	19
34	Oxidation behavior of 9Cr-4.5Al ODS steel in 600â€Â°C supercritical water and the effect of pre-oxidation. Corrosion Science, 2020, 165, 108380.	6.6	19
35	Direct determination of trace elements in austenitic stainless steel samples by ETV-ICPOES. Journal of Analytical Atomic Spectrometry, 2016, 31, 2434-2440.	3.0	17
36	A tomographic TEM study of tension-compression asymmetry response of pyramidal dislocations in a deformed Zr-2.5Nb alloy. Scripta Materialia, 2018, 153, 94-98.	5.2	17

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37	Microstructure Characterization and Mechanical Properties of Al Alloyed 9Cr ODS Steels with Different Al Contents. Steel Research International, 2019, 90, 1800594.	1.8	17
38	Preparation of TEM samples of ferritic alloys. Journal of Electron Microscopy, 2008, 57, 91-94.	0.9	16
39	Effect of foil orientation on damage accumulation during irradiation in magnesium and annealing response of dislocation loops. Journal of Nuclear Materials, 2012, 423, 132-141.	2.7	16
40	Radiation induced microstructures in ODS 316 austenitic steel under dual-beam ions. Journal of Nuclear Materials, 2014, 455, 242-247.	2.7	16
41	Synergistic effects of PKA and helium on primary damage formation in Feâ€“0.1%He. Journal of Nuclear Materials, 2007, 367-370, 462-467.	2.7	15
42	The habit plane of ã€ˆaã€‰-type dislocation loops in Î±-zirconium: an atomistic study. Philosophical Magazine, 2017, 97, 944-956.	1.6	15
43	Influences of Laser Surface Alloying with Cr on Microstructural Characteristics and Hardness of Pure Ti. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 3794-3804.	2.2	15
44	Preparation and property optimization of FeCrAl-based ODS alloy by machine learning combined with wedge-shaped hot-rolling. Materials Characterization, 2022, 188, 111894.	4.4	15
45	Effects of pulsed laser surface treatments on microstructural characteristics and hardness of CrCoNi medium-entropy alloy. Philosophical Magazine, 2019, 99, 3015-3031.	1.6	14
46	Characterizing the crystal structure and formation induced plasticity of Î³-hydride phase in zirconium. Materialia, 2019, 8, 100454.	2.7	14
47	Cavity morphology in a Ni based superalloy under heavy ion irradiation with cold pre-injected helium. I. Journal of Applied Physics, 2014, 115, 103508.	2.5	13
48	Deformation mechanism study of a hot rolled Zr-2.5Nb alloy by transmission electron microscopy. I. Dislocation microstructures in as-received state and at different plastic strains. Journal of Applied Physics, 2015, 117, 094307.	2.5	13
49	Metastable phases in Zr-Excel alloy and their stability under heavy ion (Kr2+) irradiation. Journal of Nuclear Materials, 2016, 469, 9-19.	2.7	13
50	Stacking faults observed in {10<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mover accent="true"><mml:mn>1</mml:mn><mml:mo stretchy="true">â^'</mml:mo></mml:mover></mml:math>2} extension twins in a compressed high Sn content Zr alloy. Scripta Materialia, 2017, 141, 72-75.	5.2	13
51	Precipitate Stability in a Zrâ€“2.5Nbâ€“0.5Cu Alloy under Heavy Ion Irradiation. Metals, 2017, 7, 287.	2.3	13
52	In situtransmission electron microscopy study of the thermally induced formation of Î´â€²-ZrO in pure Zr and Zr-based alloy. Journal of Applied Crystallography, 2017, 50, 1028-1035.	4.5	13
53	Radiation effect on nano-indentation properties and deformation mechanisms of a Ni-based superalloy X-750. Journal of Nuclear Materials, 2019, 515, 1-13.	2.7	13
54	Identifying the true structure and origin of the water-quench induced hydride phase in Zr-2.5Nb alloy. Acta Materialia, 2021, 221, 117369.	7.9	12

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55	Cavity morphology in a Ni based superalloy under heavy ion irradiation with hot pre-injected helium. II. Journal of Applied Physics, 2014, 115, 103509.	2.5	11
56	Superfast Liquid Transfer Strategy Through Sliding on a Liquid Membrane Inspired from Scorpion Setae. Advanced Materials Interfaces, 2018, 5, 1800802.	3.7	11
57	A direct comparison of annealing in TEM thin foils and bulk material: Application to Zr-2.5Nb-0.5Cu alloy. Materials Characterization, 2019, 151, 175-181.	4.4	11
58	Influence of Al Addition Strategy on the Microstructure of a Lowâ€Cr Oxide Dispersionâ€Strengthened Ferritic Steel. Advanced Engineering Materials, 2020, 22, 1900879.	3.5	11
59	Stability of vacancy and interstitial dislocation loops in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si24.svg"><mml:mi>Î±</mml:mi></mml:math>-zirconium: atomistic calculations and continuum modelling. Journal of Nuclear Materials, 2021, 554, 153059.	2.7	11
60	Primary damage production in the presence of extended defects and growth of vacancy-type dislocation loops in hcp zirconium. Physical Review Materials, 2019, 3, .	2.4	11
61	Characterization of phases in the Zrâ€“Nbâ€“Fe ternary system at the Zrâ€“Nb rich side of the phase diagram. Journal of Nuclear Materials, 2020, 534, 152142.	2.7	11
62	Indentation behaviour of ion-irradiated X-750 Ni-based superalloy. Philosophical Magazine Letters, 2017, 97, 101-109.	1.2	10
63	Towards resolving a long existing phase stability controversy in the Zr-H, Ti-H systems. Journal of Nuclear Materials, 2021, 543, 152540.	2.7	10
64	Revealing Microstructural, Textural, and Hardness Evolution of Tiâ€“6Alâ€“4V Sheet Cooled From Sub Î²-Transus Temperature at Different Rates. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2022, 53, 3179-3193.	2.2	10
65	Deformation mechanism study of a hot rolled Zr-2.5Nb alloy by transmission electron microscopy. II. In situ transmission electron microscopy study of deformation mechanism change of a Zr-2.5Nb alloy upon heavy ion irradiation. Journal of Applied Physics, 2015, 117, .	2.5	9
66	Effect of the addition of Cu on irradiation induced defects and hardening in Zr-Nb alloys. Journal of Nuclear Materials, 2019, 519, 10-21.	2.7	9
67	Effect of Shear Strain Rate on Microstructure and Properties of Austenitic Steel Processed by Cyclic Forward/Reverse Torsion. Materials, 2019, 12, 506.	2.9	9
68	Effect of He on the Order-Disorder Transition in Ni3Al under Irradiation. Physical Review Letters, 2020, 124, 075901.	7.8	9
69	The behavior of coatings and SiCf/SiC composites under thermal shock. Journal of Nuclear Materials, 2000, 283-287, 1077-1080.	2.7	8
70	Asymmetrical response of edge pyramidal dislocations in HCP zirconium under tension and compression: A molecular dynamics study. Computational Materials Science, 2019, 170, 109183.	3.0	8
71	The stability of thermodynamically metastable phases in a Zr-Sn-Nb-Mo alloy: Effects of alloying elements, morphology and applied stress/strain. Journal of Nuclear Materials, 2017, 493, 84-95.	2.7	7
72	Deformation-free nanotwin formation in zirconium and titanium. Materials Letters, 2019, 247, 111-114.	2.6	7

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73	Quasi in-situ energy dispersive X-ray spectroscopy observation of matrix and solute interactions on Y Ti O oxide particles in an austenitic stainless steel under 1ÂMeV Kr2+ high temperature irradiation. Acta Materialia, 2017, 141, 241-250.	7.9	6
74	Irradiation Induced Defect Clustering in Zircaloy-2. Applied Sciences (Switzerland), 2017, 7, 854.	2.5	6
75	In situ heavy ion irradiation in ferritic/martensitic ODS steels at 500Â°C. Materials Science and Technology, 2018, 34, 42-46.	1.6	6
76	In-situ study of heavy ion irradiation induced lattice defects and phase instability in Î²-Zr of a Zrâ€“Nb alloy. Journal of Nuclear Materials, 2019, 522, 192-199.	2.7	6
77	In situ TEM and multiscale study of dislocation loop formation in the vicinity of a grain boundary. Journal of Nuclear Materials, 2020, 528, 151872.	2.7	6
78	Microstructure evolution during electron and ion irradiation in commercial purity magnesium. Philosophical Magazine, 2014, 94, 1909-1923.	1.6	5
79	Effect of heavy ion irradiation on thermodynamically equilibrium Zr-Excel alloy. Journal of Nuclear Materials, 2017, 488, 33-45.	2.7	5
80	An embedded atom method interatomic potential for the zirconium-iron system. Computational Materials Science, 2017, 133, 6-13.	3.0	5
81	Novel techniques of preparing TEM samples for characterization of irradiation damage. Journal of Microscopy, 2013, 252, 251-257.	1.8	3
82	Mechanoelectrical Energy Conversion: Highly Efficient Mechanoelectrical Energy Conversion Based on the Nearâ€Tip Stress Field of an Antifracture Slit Observed in Scorpions (Adv. Funct. Mater. 22/2019). Advanced Functional Materials, 2019, 29, 1970147.	14.9	3
83	A method for calculation of bias factor in anisotropic mediums, application to Î±â^'zirconium. Journal of Nuclear Materials, 2020, 528, 151882.	2.7	3
84	Spectral and raw quasi in-situ energy dispersive X-ray data captured via a TEM analysis of an ODS austenitic stainless steel sample under 1 MeV Kr 2+ high temperature irradiation. Data in Brief, 2017, 14, 707-712.	1.0	2
85	Effects of heavy ion irradiation on Zr-2.5Nb pressure tube alloy. II. Orientation dependent dislocation loop propagation and elemental redistribution. Journal of Applied Physics, 2019, 125, .	2.5	2
86	Crystal Structure of Hydride Platelets in Hot Rolled Zircaloy-2, Characterized with Synchrotron X-Ray Diffraction, S/TEM, and EELS. , 2021, , 732-761.		2
87	In-situ Observation of Irradiation Induced Defects in Fe and Fe-Cr Alloys. Microscopy and Microanalysis, 2020, 26, 886-886.	0.4	1
88	Interstitialcy-based reordering kinetics of Ni3Al precipitates in irradiated Ni-based super alloys. Materialia, 2021, 19, 101180.	2.7	0
89	Quantifying Irradiation Defects in Zirconium Alloys: A Comparison between Transmission Electron Microscopy and Whole-Pattern Diffraction Line-Profile Analysis. , 2018, , 691-724.		0