Sc Middleburgh

List of Publications by Year
in descending order

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78 papers	2,355 citations	218592 26 h-index	233338 45 g-index
80 all docs	80 docs citations	80 times ranked	2122 citing authors

#	Article	IF	Citations
1	Interface interactions in UN-X-UO2 systems (XÂ=ÂV, Nb, Ta, Cr, Mo, W) by pressure-assisted diffusion experiments at 1773 K. Journal of Nuclear Materials, 2022, 561, 153554.	1.3	5
2	Self-contained dual-scale composite architectures in spray dried zirconium diboride. Ceramics International, 2022, 48, 17529-17538.	2.3	3
3	Hydrogen accommodation in the TiZrNbHfTa high entropy alloy. Acta Materialia, 2022, 229, 117832.	3.8	11
4	Predicting the thermal expansion of body-centred cubic (BCC) high entropy alloys in the Moâ€“Nbâ€“Taâ€“Tiâ€“W system. JPhys Energy, 2022, 4, 034002.	2.3	2
5	Coated ZrN sphere-UO2 composites as surrogates for UN-UO2 accident tolerant fuels. Journal of Nuclear Materials, 2022, 567, 153845.	1.3	4
6	Structure and properties of amorphous uranium dioxide. Acta Materialia, 2021, 202, 366-375.	3.8	16
7	Ultrafast femtosecond laser micro-marking of single-crystal natural diamond by two-lens focusing system. Materials Today Communications, 2021, 26, 101800.	0.9	2
8	Interface properties of Ti3SiC2/Al2O3 ceramics: Combined experiments and first-principles calculations. Ceramics International, 2021, 47, 6409-6417.	2.3	28
9	High-Entropy Alloys for Advanced Nuclear Applications. Entropy, 2021, 23, 98.	1.1	131
10	Oxidation of UN/U2N3-UO2 composites: an evaluation of UO2 as an oxidation barrier for the nitride phases. Journal of Nuclear Materials, 2021, 544, 152700.	1.3	16
11	Accommodation and diffusion of Nd in uranium silicide - U3Si2. Journal of Nuclear Materials, 2021, 547, 152794.	1.3	0
12	In-situ TEM investigation of nano-scale helium bubble evolution in tantalum-doped tungsten at 800Â°C. Journal of Nuclear Materials, 2021, 550, 152910.	1.3	16
13	Diffusion in doped and undoped amorphous zirconia. Journal of Nuclear Materials, 2021, 555, 153108.	1.3	10
14	The accommodation of lithium in bulk ZrO2. Solid State Ionics, 2021, 373, 115813.	1.3	3
15	Evidence of excess oxygen accommodation in yttria partially-stabilized zirconia. Scripta Materialia, 2020, 175, 7-10.	2.6	7
16	The stability of irradiation-induced defects in Zr3AlC2, Nb4AlC3 and (Zr0.5,Ti0.5)3AlC2 MAX phase-based ceramics. Acta Materialia, 2020, 183, 24-35.	3.8	29
17	Ceramics in the nuclear fuel cycle. , 2020, , 63-87.		2
18	A high density composite fuel with integrated burnable absorber: U3Si2-UB2. Journal of Nuclear Materials, 2020, 529, 151891.	1.3	8

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19	Influence of boron isotope ratio on the thermal conductivity of uranium diboride (UB2) and zirconium diboride (ZrB2). Journal of Nuclear Materials, 2020, 528, 151892.	1.3	12
20	Thermal conductivity variation in uranium dioxide with gadolinia additions. Journal of Nuclear Materials, 2020, 540, 152258.	1.3	11
21	UN microspheres embedded in UO2 matrix: An innovative accident tolerant fuel. Journal of Nuclear Materials, 2020, 540, 152355.	1.3	16
22	Synthesis of candidate advanced technology fuel: Uranium diboride (UB2) via carbo/borothermic reduction of UO2. Journal of Nuclear Materials, 2020, 540, 152388.	1.3	12
23	Short communication on further elucidating the structure of amorphous U2O7 by extended X-ray absorption spectroscopy and DFT simulations. Journal of Nuclear Materials, 2020, 542, 152476.	1.3	5
24	Ion beam irradiation of ABO₄ compounds with the fergusonite, monazite, scheelite, and zircon structures. Journal of the American Ceramic Society, 2020, 103, 5502-5514.	1.9	9
25	Void evolution in tungsten and tungsten-5wt.% tantalum under in-situ proton irradiation at 800 and 1000â€Â°C. Journal of Nuclear Materials, 2019, 526, 151730.	1.3	13
26	Choosing the correct strong correlation correction for U3Si2: Influence of magnetism. Journal of Nuclear Materials, 2019, 527, 151828.	1.3	16
27	Stoichiometry deviation in amorphous zirconium dioxide. RSC Advances, 2019, 9, 16320-16327.	1.7	25
28	Density functional theory calculations of self- and Xe diffusion in U3Si2. Journal of Nuclear Materials, 2019, 515, 312-325.	1.3	43
29	Defect evolution in burnable absorber candidate material: Uranium diboride, UB2. Journal of Nuclear Materials, 2019, 513, 45-55.	1.3	18
30	High temperature, low neutron cross-section high-entropy alloys in the Nb-Ti-V-Zr system. Acta Materialia, 2019, 166, 435-446.	3.8	60
31	Experimental and computational assessment of U Si N ternary phases. Journal of Nuclear Materials, 2019, 516, 194-201.	1.3	6
32	The formation and structure of Fe-Mn-Ni-Si solute clusters and G-phase precipitates in steels. Journal of Nuclear Materials, 2018, 505, 1-6.	1.3	31
33	Solution of hydrogen in accident tolerant fuel candidate material: U3Si2. Journal of Nuclear Materials, 2018, 501, 234-237.	1.3	31
34	Crystallographic evolution of MAX phases in proton irradiating environments. Journal of Nuclear Materials, 2018, 502, 220-227.	1.3	30
35	Uranium nitride-silicide advanced nuclear fuel: higher efficiency and greater safety. Advances in Applied Ceramics, 2018, 117, s76-s81.	0.6	26
36	Anisotropy in the thermal expansion of uranium silicide measured by neutron diffraction. Journal of Nuclear Materials, 2018, 508, 516-520.	1.3	19

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37	Density functional theory study of the magnetic moment of solute Mn in bcc Fe. Physical Review B, 2018, 98, .	1.1	14
38	DFT study of the hexagonal high-entropy alloy fission product system. Journal of Nuclear Materials, 2017, 488, 70-74.	1.3	18
39	Transmutation ofABO4compounds incorporating technetium-99 and caesium-137. Modelling and Simulation in Materials Science and Engineering, 2017, 25, 025011.	0.8	6
40	Spark plasma sintering and microstructural analysis of pure and Mo doped U 3 Si 2 pellets. Journal of Nuclear Materials, 2017, 496, 234-241.	1.3	23
41	First-principles study of defects and fission product behavior in uranium diboride. Journal of Nuclear Materials, 2017, 494, 147-156.	1.3	10
42	Synthesis and DFT investigation of new bismuth-containing MAX phases. Scientific Reports, 2016, 6, 18829.	1.6	97
43	Solubility and partitioning of impurities in Be alloys. Journal of Alloys and Compounds, 2016, 688, 382-385.	2.8	4
44	Phase equilibria in the U-Si system from first-principles calculations. Journal of Nuclear Materials, 2016, 479, 216-223.	1.3	68
45	Non-stoichiometry in U3Si2. Journal of Nuclear Materials, 2016, 482, 300-305.	1.3	64
46	Predicting the formation and stability of single phase high-entropy alloys. Acta Materialia, 2016, 104, 172-179.	3.8	283
47	Atomic scale modelling of hexagonal structured metallic fission product alloys. Royal Society Open Science, 2015, 2, 140292.	1.1	16
48	Ultrafast palladium diffusion in germanium. Journal of Materials Chemistry A, 2015, 3, 3832-3838.	5.2	14
49	Modelling the thermal conductivity of (U Th1â^')O2 and (U Pu1â^')O2. Journal of Nuclear Materials, 2015, 466, 29-35.	1.3	65
50	Structural stability and fission product behaviour in U3Si. Journal of Nuclear Materials, 2015, 466, 739-744.	1.3	22
51	Predicting the Crystal Structure and Phase Transitions in High-Entropy Alloys. Jom, 2015, 67, 2375-2380.	0.9	33
52	Crystal structure, thermodynamics, magnetics and disorder properties of Beâ€“Feâ€“Al intermetallics. Journal of Alloys and Compounds, 2015, 639, 111-122.	2.8	11
53	Formation and structure of Vâ€“Zr amorphous alloy thin films. Acta Materialia, 2015, 83, 269-275.	3.8	21
54	Vacancy mediated cation migration in uranium dioxide: The influence of cluster configuration. Solid State Ionics, 2014, 266, 68-72.	1.3	12

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55	Thermal conductivity and energetic recoils in UO₂using a many-body potential model. Journal of Physics Condensed Matter, 2014, 26, 495401.	0.7	28
56	Hydrogen accommodation in -iron and nickel. Journal of Alloys and Compounds, 2014, 587, 794-799.	2.8	15
57	Swelling due to the partition of soluble fission products between the grey phase and uranium dioxide. Progress in Nuclear Energy, 2014, 72, 33-37.	1.3	7
58	Segregation and migration of species in the CrCoFeNi high entropy alloy. Journal of Alloys and Compounds, 2014, 599, 179-182.	2.8	126
59	Novel Chemical Synthesis and Characterization of CeTi2O6 Brannerite. Inorganic Chemistry, 2014, 53, 6761-6768.	1.9	30
60	Peroxide defect formation in zirconate perovskites. Journal of Materials Chemistry A, 2014, 2, 15883-15888.	5.2	25
61	Hydrogen induced vacancy formation in tungsten. Journal of Nuclear Materials, 2014, 448, 270-275.	1.3	47
62	Theoretical and experimental Raman spectroscopic studies of synthetic thorutite (ThTi2O6). Journal of Nuclear Materials, 2014, 446, 68-72.	1.3	19
63	Formation of (Cr,Al)UO4 from doped UO2 and its influence on partition of soluble fission products. Journal of Nuclear Materials, 2013, 443, 236-241.	1.3	16
64	Density and structural effects in the radiation tolerance of TiO2polymorphs. Journal of Physics Condensed Matter, 2013, 25, 355402.	0.7	10
65	Raman spectroscopic study of natural and synthetic brannerite. Journal of Nuclear Materials, 2013, 437, 149-153.	1.3	31
66	Structure, properties and formation of PuCrO3 and PuAlO3 of relevance to doped nuclear fuels. Journal of Materials Chemistry A, 2013, 1, 14633.	5.2	17
67	Preferential formation of Al self-interstitial defects in Î³-TiAl under irradiation. Intermetallics, 2013, 32, 230-232.	1.8	14
68	Technetium and ruthenium incorporation into rutile TiO2. Journal of Nuclear Materials, 2013, 441, 380-389.	1.3	16
69	Accommodation of excess oxygen in fluorite dioxides. Solid State Ionics, 2013, 253, 119-122.	1.3	27
70	The incorporation of plutonium in lanthanum zirconate pyrochlore. Journal of Nuclear Materials, 2013, 443, 444-451.	1.3	44
71	Accommodation of Excess Oxygen in Group II Monoxides. Journal of the American Ceramic Society, 2013, 96, 308-311.	1.9	67
72	Partition of soluble fission products between the grey phase, ZrO2 and uranium dioxide. Journal of Nuclear Materials, 2013, 438, 238-245.	1.3	19

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73	Gradual Structural Evolution from Pyrochlore to Defect-Fluorite in Y₂Sn_{2â€“x}Zr_xO₇: Average vs Local Structure. Journal of Physical Chemistry C, 2013, 117, 26740-26749.	1.5	54
74	Accommodation, Accumulation, and Migration of Defects in <scp><scp>Ti</scp></scp>₃<scp><scp>SiC</scp></scp>₂ and <scp><scp>Ti</scp></scp>₃<scp><scp>AlC</scp></scp>₂ MAX Phases. Journal of the American Ceramic Society, 2013, 96, 3196-3201.	1.9	73
75	Solution of trivalent cations into uranium dioxide. Journal of Nuclear Materials, 2012, 420, 258-261.	1.3	44
76	Swelling due to fission products and additives dissolved within the uranium dioxide lattice. Journal of Nuclear Materials, 2012, 427, 359-363.	1.3	90
77	Atomic Scale Modeling of Point Defects in Zirconium Diboride. Journal of the American Ceramic Society, 2011, 94, 2225-2229.	1.9	34
78	Defects and transport processes in beryllium. Acta Materialia, 2011, 59, 7095-7103.	3.8	44