Dongwon Shin

List of Publications by Year
in descending order

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72 papers	3,545 citations	218677 26 h-index	138484 58 g-index
72 all docs	72 docs citations	72 times ranked	4159 citing authors

#	Article	IF	Citations
1	Efficient stochastic generation of special quasirandom structures. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2013, 42, 13-18.	1.6	977
2	Reversible redox reactions in an epitaxially stabilized SrCoOx oxygen sponge. Nature Materials, 2013, 12, 1057-1063.	27.5	349
3	Thermodynamic properties of binary hcp solution phases from special quasirandom structures. Physical Review B, 2006, 74, .	3.2	122
4	Solute segregation at the Al/Î¸â€²-Al2Cu interface in Al-Cu alloys. Acta Materialia, 2017, 141, 327-340.	7.9	121
5	Protection of zirconium by alumina- and chromia-forming iron alloys under high-temperature steam exposure. Journal of Nuclear Materials, 2013, 438, 64-71.	2.7	114
6	First-principles study of soluteâ€“vacancy binding in magnesium. Acta Materialia, 2010, 58, 531-540.	7.9	113
7	Thermodynamic modeling of the Hfâ€“Siâ€“O system. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2006, 30, 375-386.	1.6	98
8	Ab initio thermodynamic properties of stoichiometric phases in the Niâ€“Al system. Acta Materialia, 2005, 53, 1809-1819.	7.9	96
9	Topotactic Metalâ€“Insulator Transition in Epitaxial SrFeO_x Thin Films. Advanced Materials, 2017, 29, 1606566.	21.0	96
10	Solute-vacancy clustering in aluminum. Acta Materialia, 2020, 196, 747-758.	7.9	96
11	Elevated temperature microstructural stability in cast AlCuMnZr alloys through solute segregation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 765, 138279.	5.6	89
12	First-principles study of ternary fcc solution phases from special quasirandom structures. Physical Review B, 2007, 76, .	3.2	72
13	The synergistic role of Mn and Zr/Ti in producing Î¸â€²/L12 co-precipitates in Al-Cu alloys. Acta Materialia, 2020, 194, 577-586.	7.9	71
14	Modern data analytics approach to predict creep of high-temperature alloys. Acta Materialia, 2019, 168, 321-330.	7.9	69
15	Aging behavior and strengthening mechanisms of coarsening resistant metastable Î¸' precipitates in an Alâ€“Cu alloy. Materials and Design, 2021, 198, 109378.	7.0	62
16	Data analytics approach for melt-pool geometries in metal additive manufacturing. Science and Technology of Advanced Materials, 2019, 20, 972-978.	6.1	59
17	Cationâ€“Eutectic Transition via Sublattice Melting in CuInP₂S₆/In_{4/3}P₂S₆ van der Waals Layered Crystals. ACS Nano, 2017, 11, 7060-7073.	14.6	54
18	First-principles density functional calculations for Mg alloys: A tool to aid in alloy development. Scripta Materialia, 2010, 63, 680-685.	5.2	48

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19	Uranium nitride as LWR TRISO fuel: Thermodynamic modeling of Uâ€“Câ€“N. Journal of Nuclear Materials, 2012, 427, 162-168.	2.7	40
20	First-Principles Calculations, Electrochemical and X-ray Absorption Studies of Li-Ni-PO4Surface-TreatedxLi2MnO3Â·(1â^'x)LiMO2(M = Mn, Ni, Co) Electrodes for Li-Ion Batteries. Journal of the Electrochemical Society, 2011, 159, A121-A127.	2.9	38
21	Coupling physics in machine learning to predict properties of high-temperatures alloys. Npj Computational Materials, 2020, 6, .	8.7	37
22	Thermodynamic modeling of the Cuâ€“Si system. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2008, 32, 520-526.	1.6	35
23	Finite-temperature thermodynamic and vibrational properties of Alâ€“Niâ€“Y compounds via first-principles calculations. Acta Materialia, 2006, 54, 2291-2304.	7.9	34
24	Modification of the thermodynamic model for the Mgâ€“Zr system. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2005, 29, 230-238.	1.6	33
25	Mechanisms for stabilizing Î¸â€²(Al2Cu) precipitates at elevated temperatures investigated with phase field modeling. Materialia, 2019, 6, 100335.	2.7	31
26	A comprehensive study on the fabrication and characterization of Tiâ€“48Alâ€“2Crâ€“2Nb preforms manufactured using electron beam melting. Materialia, 2019, 6, 100284.	2.7	30
27	Temperature-dependent stability of Î¸â€²-Al2Cu precipitates investigated with phase field simulations and experiments. Materialia, 2019, 5, 100185.	2.7	26
28	Lattice mismatch modeling of aluminum alloys. Computational Materials Science, 2017, 138, 149-159.	3.0	25
29	Thermodynamic reassessment of Uâ€“Gdâ€“O system. Journal of Nuclear Materials, 2014, 452, 397-406.	2.7	24
30	Enthalpy of mixing for ternary fcc solid solutions from special quasirandom structures. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2008, 32, 74-81.	1.6	22
31	Thermodynamic modeling of the (U,La)O2Â±x solid solution phase. Journal of Nuclear Materials, 2013, 433, 227-232.	2.7	21
32	Solid-liquid phase equilibria of Fe-Cr-Al alloys and spinels. Journal of Nuclear Materials, 2017, 492, 128-133.	2.7	21
33	Single-step aging treatment for a precipitation-strengthened Ni-based alloy and its influence on high-temperature mechanical behavior. Scripta Materialia, 2019, 162, 416-420.	5.2	21
34	Phase stability of hafnium oxide and zirconium oxide on silicon substrate. Scripta Materialia, 2007, 57, 201-204.	5.2	19
35	The effect of native point defect thermodynamics on off-stoichiometry in Î²-Mg17Al12. Acta Materialia, 2012, 60, 5135-5142.	7.9	18
36	STEM and APT characterization of scale formation on a La,Hf,Ti-doped NiCrAl model alloy. Micron, 2018, 109, 41-52.	2.2	18

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37	Atomic structures of interfacial solute gateways to Î¸â€² precipitates in Al-Cu alloys. Acta Materialia, 2021, 212, 116891.	7.9	18
38	Studies of LaSn[sub 3] as a Negative Electrode for Lithium-Ion Batteries. Journal of the Electrochemical Society, 2009, 156, A536.	2.9	17
39	NiAl Oxidation Reaction Processes Studied In Situ Using MEMS-Based Closed-Cell Gas Reaction Transmission Electron Microscopy. Oxidation of Metals, 2017, 88, 495-508.	2.1	17
40	Petascale supercomputing to accelerate the design of high-temperature alloys. Science and Technology of Advanced Materials, 2017, 18, 828-838.	6.1	17
41	Machine Learning for Thermal Transport Analysis of Aluminum Alloys with Precipitate Morphology. Advanced Theory and Simulations, 2019, 2, 1800196.	2.8	16
42	First-principles study of Alâ€“Niâ€“Y ternary compounds for crystal structure validation. Journal of Alloys and Compounds, 2008, 462, 262-266.	5.5	15
43	First-principles molecular dynamics study of the structure and dynamic behavior of liquid<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>Li</mml:mtext></mml:mrow><mml:mn>4</mml:mn></mml:ms Physical Review B, 2009, 80, .	3.2	15
44	Advanced data science toolkit for non-data scientists â€“ A user guide. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2020, 68, 101733.	1.6	15
45	Rapid Diffusion and Nanosegregation of Hydrogen in Magnesium Alloys from Exposure to Water. ACS Applied Materials & Interfaces, 2017, 9, 38125-38134.	8.0	14
46	Interpreting Electrochemical and Chemical Sodiation Mechanisms and Kinetics in Tin Antimony Battery Anodes Using in Situ Transmission Electron Microscopy and Computational Methods. ACS Applied Energy Materials, 2019, 2, 3578-3586.	5.1	14
47	Thermochemical modeling of the U1â^'yGdyO2Â±x phase. Journal of Nuclear Materials, 2013, 443, 588-595.	2.7	13
48	Correlation analysis of materials properties by machine learning: illustrated with stacking fault energy from first-principles calculations in dilute fcc-based alloys. Journal of Physics Condensed Matter, 2021, 33, 295702.	1.8	13
49	First-Principles Calculations and Thermodynamic Modeling of the Al2O3-Nd2O3System. Journal of the American Ceramic Society, 2008, 91, 3355-3361.	3.8	12
50	Firstâ€Principles Thermochemistry and Thermodynamic Modeling of the Al₂O₃â€“Nd₂O₃â€“SiO₂â€“Y₂O₃ Pseudoquaternary System. Journal of the American Ceramic Society, 2010, 93, 4158-4167.	3.8	12
51	Phase stability of noble metal loaded WO3 for SO2 sensor applications. Sensors and Actuators B: Chemical, 2013, 176, 75-80.	7.8	11
52	Thermodynamic assessment of the Uâ€“Laâ€“O system. Journal of Nuclear Materials, 2015, 456, 142-150.	2.7	11
53	ASCENDS: Advanced data SCiENce toolkit for Non-Data Scientists. Journal of Open Source Software, 2020, 5, 1656.	4.6	11
54	Thermodynamic modeling of the Caâ€“Liâ€“Na system. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2003, 27, 235-241.	1.6	10

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55	High-throughput thermodynamic screening of carbide/refractory metal cermets for ultra-high temperature applications. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2019, 66, 101631.	1.6	10
56	Computational thermodynamic study of SiC chemical vapor deposition from MTSâ€Ĥ₂*. Journal of the American Ceramic Society, 2021, 104, 3726-3737.	3.8	9
57	Thermodynamic assessment of the Uâ€“Yâ€“O system. Journal of Nuclear Materials, 2015, 460, 5-12.	2.7	8
58	A machine learning approach to predict thermal expansion of complex oxides. Computational Materials Science, 2022, 210, 111034.	3.0	8
59	Thermodynamic investigation of the (La1â˜xGdx)2Zr2O7 pyrochlore phase. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2014, 45, 27-32.	1.6	7
60	Degradation of TiN Coatings on Inconel 617 and Silicon Wafer Substrates Under Pulsed Laser Ablation. Journal of Materials Engineering and Performance, 2014, 23, 1651-1655.	2.5	7
61	Defect engineering of magnetic ground state in EuTiO₃ epitaxial thin films. Journal of the American Ceramic Society, 2021, 104, 4606-4613.	3.8	7
62	Uncertainty Quantification of Machine Learning Predicted Creep Property of Alumina-Forming Austenitic Alloys. Jom, 2021, 73, 164-173.	1.9	6
63	Data analytics approach to predict high-temperature cyclic oxidation kinetics of NiCr-based Alloys. Npj Materials Degradation, 2021, 5, .	5.8	6
64	Theoretical assessment of bonaccordite formation in pressurized water reactors. Journal of Nuclear Materials, 2016, 474, 62-64.	2.7	5
65	Lessons Learned in Employing Data Analytics to Predict Oxidation Kinetics and Spallation Behavior of High-Temperature NiCr-Based Alloys. Oxidation of Metals, 2022, 97, 51-76.	2.1	5
66	Structure and cation ordering in La2UO6, Ce2UO6, LaUO4, and CeUO4 by first principles calculations. Computational Materials Science, 2016, 123, 201-213.	3.0	4
67	Comprehensive evaluation and parametric sensitivity of interatomic potential models for diffusion kinetics of Cr2O3 in molecular dynamics. AIP Advances, 2019, 9, .	1.3	4
68	Equilibrium solute segregation to matrix-Î¸â€² precipitate interfaces in Al-Cu alloys from first principles. Physical Review Materials, 2020, 4, .	2.4	4
69	In situ ceramic layer growth on coated fuel particles dispersed in a zirconium metal matrix. Journal of Nuclear Materials, 2013, 437, 171-177.	2.7	3
70	In situ transmission electron microscopy deformation and mechanical responses of additively manufactured Ni-based superalloy. Scripta Materialia, 2020, 186, 57-62.	5.2	2
71	Thin Films: Topotactic Metalâ€“Insulator Transition in Epitaxial SrFeO_x Thin Films (Adv. Mater. 37/2017). Advanced Materials, 2017, 29, .	21.0	0
72	Thermal annealing and pressure effects on BaFe2â˜xCoxAs2single crystals. Journal of Physics Condensed Matter, 2018, 30, 025501.	1.8	0