Ji-Cheng Zhao

List of Publications by Year
in descending order

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132	6,200	76326	76900
papers	citations	40	74
		h-index	g-index

143	143	143	5070
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A general method to synthesize and sinter bulk ceramics in seconds. Science, 2020, 368, 521-526.	12.6	357
2	New frontiers for the materials genome initiative. Npj Computational Materials, 2019, 5, .	8.7	312
3	NMR Confirmation for Formation of [B₁₂H₁₂]²⁻ Complexes during Hydrogen Desorption from Metal Borohydrides. Journal of Physical Chemistry C, 2008, 112, 3164-3169.	3.1	280
4	Ultrahigh-Temperature Nb-Silicide-Based Composites. MRS Bulletin, 2003, 28, 646-653.	3.5	277
5	Structure of unsolvated magnesium borohydride Mg(BH₄)₂. Acta Crystallographica Section B: Structural Science, 2007, 63, 561-568.	1.8	215
6	Magnesium borohydride as a hydrogen storage material: Properties and dehydrogenation pathway of unsolvated Mg(BH4)2. International Journal of Hydrogen Energy, 2009, 34, 916-928.	7.1	211
7	Combinatorial approaches as effective tools in the study of phase diagrams and compositionâ€“structureâ€“property relationships. Progress in Materials Science, 2006, 51, 557-631.	32.8	202
8	Ammine Magnesium Borohydride Complex as a New Material for Hydrogen Storage: Structure and Properties of Mg(BH₄)₂Â·2NH₃. Inorganic Chemistry, 2008, 47, 4290-4298.	4.0	199
9	Spinodal decomposition, ordering transformation, and discontinuous precipitation in a Cuâ€“15Niâ€“8Sn alloy. Acta Materialia, 1998, 46, 4203-4218.	7.9	185
10	Thermal conductivity imaging at micrometre-scale resolution for combinatorial studies of materials. Nature Materials, 2004, 3, 298-301.	27.5	148
11	Phase precipitation and timeâ€“temperature-transformation diagram of Hastelloy X. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2000, 293, 112-119.	5.6	133
12	The Roles of Dihydrogen Bonds in Amine Borane Chemistry. Accounts of Chemical Research, 2013, 46, 2666-2675.	15.6	122
13	A combinatorial approach for efficient mapping of phase diagrams and properties. Journal of Materials Research, 2001, 16, 1565-1578.	2.6	112
14	Mapping of the Nbâ€“Tiâ€“Si phase diagram using diffusion multiples. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 372, 21-27.	5.6	99
15	Combinatorial Materials Science: What's New Since Edison?. MRS Bulletin, 2002, 27, 295-300.	3.5	94
16	Determination of the Nbâ€“Crâ€“Si phase diagram using diffusion multiples. Acta Materialia, 2003, 51, 6395-6405.	7.9	93
17	Facile Synthesis of Aminodiborane and Inorganic Butane Analogue NH₃BH₂NH₂BH₃. Journal of the American Chemical Society, 2010, 132, 10658-10659.	13.7	91
18	High-throughput thermal conductivity measurements of nickel solid solutions and the applicability of the Wiedemannâ€“Franz law. Acta Materialia, 2007, 55, 5177-5185.	7.9	87

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19	THE DIFFUSION-MULTIPLE APPROACH TO DESIGNING ALLOYS. Annual Review of Materials Research, 2005, 35, 51-73.	9.3	84
20	Magnesium borohydride as a hydrogen storage material: Synthesis of unsolvated Mg(BH4)2. International Journal of Hydrogen Energy, 2009, 34, 2144-2152.	7.1	80
21	Thermodynamic assessment of the Al-Zr binary system. Journal of Phase Equilibria and Diffusion, 2001, 22, 544-551.	0.3	79
22	Experimental and Computational Study of the Formation Mechanism of the Diammoniate of Diborane: The Role of Dihydrogen Bonds. Journal of the American Chemical Society, 2011, 133, 14172-14175.	13.7	79
23	Reliability of the diffusion-multiple approach for phase diagram mapping. Journal of Materials Science, 2004, 39, 3913-3925.	3.7	77
24	Invited Article: Micron resolution spatially resolved measurement of heat capacity using dual-frequency time-domain thermoreflectance. Review of Scientific Instruments, 2013, 84, 071301.	1.3	77
25	Extracting interdiffusion coefficients from binary diffusion couples using traditional methods and a forward-simulation method. Intermetallics, 2013, 34, 132-141.	3.9	74
26	High-temperature oxidation behavior of thermoelectric SnSe. Journal of Alloys and Compounds, 2016, 669, 224-231.	5.5	69
27	High-throughput diffusion multiples. Materials Today, 2005, 8, 28-37.	14.2	67
28	Ammonium Octahydrotriborate (NH4B3H8): New Synthesis, Structure, and Hydrolytic Hydrogen Release. Inorganic Chemistry, 2011, 50, 3738-3742.	4.0	67
29	Continuous cooling transformation kinetics versus isothermal transformation kinetics of steels: a phenomenological rationalization of experimental observations. Materials Science and Engineering Reports, 1995, 15, 135-207.	31.8	62
30	A Diffusion Multiple Approach for the Accelerated Design of Structural Materials. MRS Bulletin, 2002, 27, 324-329.	3.5	62
31	Phase diagram of the Nbâ€“Alâ€“Si ternary system. Journal of Alloys and Compounds, 2003, 360, 183-188.	5.5	59
32	Thermodynamic modeling of the Nbâ€“Hfâ€“Si ternary system. Intermetallics, 2003, 11, 407-415.	3.9	50
33	Enhanced stability of horseradish peroxidase encapsulated in acetalated dextran microparticles stored outside cold chain conditions. International Journal of Pharmaceutics, 2012, 431, 101-110.	5.2	50
34	Measurement of interdiffusion and impurity diffusion coefficients in the bcc phase of the Tiâ€“X (XÂ=ÂCr,) Tj ETQq0 0 0 rgBT /Overlock 3255-3268.	3.7	50
35	Application of dual-anneal diffusion multiples to the effective study of phase diagrams and phase transformations in the Feâ€“Crâ€“Ni system. Acta Materialia, 2015, 88, 196-206.	7.9	46
36	First experimental measurement of calcium diffusion in magnesium using novel liquid-solid diffusion couples and forward-simulation analysis. Scripta Materialia, 2017, 127, 92-96.	5.2	45

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37	Determination of Nbâ€“Hfâ€“Si phase equilibria. Intermetallics, 2001, 9, 681-689.	3.9	44
38	Formation Mechanisms, Structure, Solution Behavior, and Reactivity of Aminodiborane. Journal of the American Chemical Society, 2015, 137, 12406-12414.	13.7	42
39	Experimental investigation of phase equilibria in the Co-rich part of the Co-Al-X (XÂ=ÂW, Mo, Nb, Ni, Ta) ternary systems using diffusion multiples. Journal of Alloys and Compounds, 2017, 691, 110-118.	5.5	42
40	A Simple and Efficient Way to Synthesize Unsolvated Sodium Octahydrotriborate. Inorganic Chemistry, 2010, 49, 8185-8187.	4.0	41
41	Effect of ternary elements on a martensitic transformation in Î²-NiAl. Intermetallics, 2010, 18, 796-802.	3.9	41
42	Micron-scale measurements of the coefficient of thermal expansion by time-domain probe beam deflection. Journal of Applied Physics, 2008, 104, .	2.5	40
43	Largeâ€Scale and Facile Preparation of Pure Ammonia Borane through Displacement Reactions. Chemistry - A European Journal, 2012, 18, 11994-11999.	3.3	40
44	Thermal Conductivity Imaging of Thermal Barrier Coatings. Advanced Engineering Materials, 2005, 7, 622-626.	3.5	39
45	Comprehensive NMR Study of Magnesium Borohydride. Journal of Physical Chemistry C, 2011, 115, 3172-3177.	3.1	39
46	Li2B12H12Â·7NH3: a new ammine complex for ammonia storage or indirect hydrogen storage. Journal of Materials Chemistry, 2010, 20, 2743.	6.7	38
47	Effects of alloying elements on the elastic properties of bcc Ti-X alloys from first-principles calculations. Computational Materials Science, 2018, 142, 215-226.	3.0	38
48	Hf-Si binary phase diagram determination and thermodynamic modeling. Journal of Phase Equilibria and Diffusion, 2000, 21, 40-45.	0.3	37
49	First Reliable Diffusion Coefficients for Mg-Y and Additional Reliable Diffusion Coefficients for Mg-Sn and Mg-Zn. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 5778-5782.	2.2	37
50	Isothermal decomposition of supercooled austenite in steels. Materials Science and Technology, 1992, 8, 1004-1010.	1.6	33
51	High-capacity hydrogen release through hydrolysis of NaB3H8. International Journal of Hydrogen Energy, 2011, 36, 7038-7042.	7.1	33
52	Thermal conductivity mapping of the Niâ€“Al system and the beta-NiAl phase in the Niâ€“Alâ€“Cr system. Scripta Materialia, 2012, 66, 935-938.	5.2	32
53	Impurity and interdiffusion coefficients of the Crâ€“X (X=Co, Fe, Mo, Nb, Ni, Pd, Pt, Ta) binary systems. Journal of Alloys and Compounds, 2014, 604, 142-150.	5.5	32
54	Thermodynamic assessment of the Al-Hf binary system. Journal of Phase Equilibria and Diffusion, 2002, 23, 416-423.	0.3	31

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55	Thermolysis and solid state NMR studies of NaB₃H₈, NH₃B₃H₇, and NH₄B₃H₈. Dalton Transactions, 2013, 42, 701-708.	3.3	30
56	Facile measurement of single-crystal elastic constants from polycrystalline samples. Npj Computational Materials, 2017, 3, .	8.7	30
57	Elastic knowledge base of bcc Ti alloys from first-principles calculations and CALPHAD-based modeling. Computational Materials Science, 2017, 140, 121-139.	3.0	30
58	Accurate and efficient measurement of impurity (dilute) diffusion coefficients without isotope tracer experiments. Scripta Materialia, 2017, 128, 32-35.	5.2	30
59	Low-profile ultra-wideband inverted-hat monopole antenna for 50â€...MHzâ€“2â€...GHz operation. Electronics Letters, 2009, 45, 142.	1.0	29
60	An integrated experimental and computational study of diffusion and atomic mobility of the aluminumâ€“magnesium system. Acta Materialia, 2020, 189, 214-231.	7.9	29
61	Thermodynamic description of the Ti-Mo-Nb-Ta-Zr system and its implications for phase stability of Ti bio-implant materials. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2018, 61, 72-84.	1.6	28
62	Microstructure and precipitation kinetics in a Cu-7.5Ni-5Sn alloy. Scripta Materialia, 1998, 39, 1509-1516.	5.2	27
63	Study of Aluminoborane Compound AlB4H11 for Hydrogen Storage. Journal of Physical Chemistry C, 2009, 113, 2-11.	3.1	27
64	Combinatorial Approach Based on Interdiffusion Experiments for the Design of Thermoelectrics: Application to the Mg₂(Si,Sn) Alloys. Chemistry of Materials, 2014, 26, 4334-4337.	6.7	27
65	Measurements of diffusion coefficients of Ce, Gd and Mn in Mg. Materialia, 2019, 7, 100353.	2.7	27
66	Anti and gauche conformers of an inorganic butane analogue, NH3BH2NH2BH3. Chemical Communications, 2012, 48, 7943.	4.1	26
67	Diffusion in the Ti-Al-V System. Journal of Phase Equilibria and Diffusion, 2018, 39, 731-746.	1.4	26
68	A comprehensive diffusion mobility database comprising 23 elements for magnesium alloys. Acta Materialia, 2020, 201, 191-208.	7.9	26
69	Effect of MeV ion irradiation on the coefficient of thermal expansion of Feâ€“Ni Invar alloys: A combinatorial study. Acta Materialia, 2010, 58, 1236-1241.	7.9	25
70	High-throughput experimental tools for the materials genome initiative. Science Bulletin, 2014, 59, 1652-1661.	1.7	25
71	Experimental Determination of Impurity and Interdiffusion Coefficients in Seven Ti and Zr Binary Systems Using Diffusion Multiples. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 3108-3116.	2.2	24
72	Thermal Decomposition Behavior of Hydrated Magnesium Dodecahydrododecaborates. Journal of Physical Chemistry Letters, 2010, 1, 201-204.	4.6	23

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73	Rapid Synthesis and Sintering of Metals from Powders. Advanced Science, 2021, 8, e2004229.	11.2	23
74	Phase transformation kinetics and the assessment of equilibrium and metastable states. Journal of Phase Equilibria and Diffusion, 1993, 14, 303-315.	0.3	22
75	A Convenient Synthesis and a NMR Study of the Diammoniate of Diborane. Chemistry - A European Journal, 2012, 18, 3490-3492.	3.3	22
76	Determination of the Fe-Cr-Mo Phase Diagram at Intermediate Temperatures using Dual-Anneal Diffusion Multiples. Journal of Phase Equilibria and Diffusion, 2016, 37, 25-38.	1.4	21
77	Experimental determination of the phase diagrams of the Co-Ni-X (X = W, Mo, Nb, Ta) ternary systems using diffusion multiples. Intermetallics, 2018, 93, 20-29.	3.9	21
78	Kinetics of the fcc to hcp phase transformation and the formation of martensite in pure cobalt. Scripta Metallurgica Et Materialia, 1995, 32, 1671-1676.	1.0	20
79	High-throughput measurements of materials properties. Jom, 2011, 63, 40-44.	1.9	20
80	High-efficiency combinatorial approach as an effective tool for accelerating metallic biomaterials research and discovery. Materials Science and Engineering C, 2014, 39, 273-280.	7.3	20
81	The thermodynamic prediction of phase stability in multicomponent superalloys. Jom, 2002, 54, 37-41.	1.9	18
82	Examination of Ni-base superalloy diffusion couples containing multiphase regions. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 407, 135-146.	5.6	18
83	A general model for thermal and electrical conductivity of binary metallic systems. Acta Materialia, 2017, 126, 272-279.	7.9	17
84	Effects of Ni, Cr and W on the microstructural stability of multicomponent CoNi-base superalloys studied using CALPHAD and diffusion-multiple approaches. Journal of Materials Science and Technology, 2021, 80, 139-149.	10.7	17
85	Synthesis, structural analysis, and thermal decomposition studies of [(NH3)2BH2]B3H8. RSC Advances, 2013, 3, 7460.	3.6	16
86	Generation and detection of gigahertz surface acoustic waves using an elastomeric phase-shift mask. Journal of Applied Physics, 2013, 114, .	2.5	16
87	Measurement of Diffusion Coefficients in the bcc Phase of the Ti-Sn and Zr-Sn Binary Systems. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 1409-1420.	2.2	16
88	Techno-economic analysis of high-efficiency natural-gas generators for residential combined heat and power. Applied Energy, 2018, 226, 1064-1075.	10.1	15
89	Recommendation for reliable evaluation of diffusion coefficients from diffusion profiles with steep concentration gradients. Materialia, 2018, 2, 63-67.	2.7	15
90	Recommendations for simplified yet robust assessments of atomic mobilities and diffusion coefficients of ternary and multicomponent solid solutions. Scripta Materialia, 2022, 207, 114227.	5.2	15

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91	pydiffusion: A Python Library for Diffusion Simulation and Data Analysis. Journal of Open Research Software, 2019, 7, 13.	5.9	14
92	Intermolecular dihydrogen- and hydrogen-bonding interactions in diammoniumcloso-decahydrodecaborate sesquihydrate. Acta Crystallographica Section C: Crystal Structure Communications, 2010, 66, m1-m3.	0.4	13
93	Structure determination of an amorphous compound AlB4H11. Chemical Science, 2012, 3, 3183.	7.4	13
94	Desolvation and Dehydrogenation of Solvated Magnesium Salts of Dodecahydrododecaborate: Relationship between Structure and Thermal Decomposition. Chemistry - A European Journal, 2014, 20, 7325-7333.	3.3	13
95	Large dataset generation, integration and simulation in materials science, part II. Jom, 2011, 63, 40-40.	1.9	12
96	The structural characterization of (NH4)2B10H10 and thermal decomposition studies of (NH4)2B10H10 and (NH4)2B12H12. International Journal of Hydrogen Energy, 2012, 37, 4267-4273.	7.1	12
97	Experimental determination of the Niâ€“Crâ€“Ru phase diagram and thermodynamic reassessments of the Crâ€“Ru and Niâ€“Crâ€“Ru systems. Intermetallics, 2015, 64, 86-95.	3.9	12
98	Effective evaluation of interfacial energy by matching precipitate sizes measured along a composition gradient with Kampmann-Wagner numerical (KWN) modeling. Scripta Materialia, 2019, 160, 70-74.	5.2	12
99	Diffusion Coefficients and Phase Equilibria of the Cu-Zn Binary System Studied Using Diffusion Couples. Journal of Phase Equilibria and Diffusion, 2020, 41, 642-653.	1.4	12
100	A simple yet general model of binary diffusion coefficients emerged from a comprehensive assessment of 18 binary systems. Acta Materialia, 2021, 215, 117077.	7.9	12
101	High-throughput exploration of alloying effects on the microstructural stability and properties of multi-component CoNi-base superalloys. Journal of Alloys and Compounds, 2021, 881, 160618.	5.5	12
102	Ordering transformation and spinodal decomposition in Auâ€”Ni alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1999, 30, 707-716.	2.2	11
103	Synthesis, Structural Characterization, and Thermal Decomposition Study of Mg(H₂O)₆B₁₀H₁₀·4H₂O. Journal of Physical Chemistry C, 2011, 115, 11793-11802.	3.1	10
104	Anisotropic thermal conductivity of magnetocaloric AlFe2B2. Materialia, 2018, 1, 150-154.	2.7	10
105	Ultrafast high-temperature sintering to avoid metal loss toward high-performance and scalable cermets. Matter, 2022, 5, 594-604.	10.0	10
106	Diffusion quadruples for the determination of quaternary phase diagrams applied to FeCoNiCr system. Scripta Metallurgica, 1988, 22, 1825-1829.	1.2	8
107	The Thermodynamics and Kinetics of High-Entropy Alloys. Journal of Phase Equilibria and Diffusion, 2017, 38, 351-352.	1.4	8
108	First measurement of the full elastic constants of Ni-based superalloy RenÃ© 88DT. Scripta Materialia, 2018, 152, 24-26.	5.2	8

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109	Gradient temperature heat treatment for efficient study of phase precipitation in a high-temperature Fe-Cr-Mo ferritic steel. Materialia, 2018, 3, 31-40.	2.7	8
110	High-Throughput and Systematic Study of Phase Transformations and Metastability Using Dual-Anneal Diffusion Multiples. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 5006-5022.	2.2	8
111	First measurement of diffusion coefficients of lithium in magnesium. Materialia, 2020, 11, 100674.	2.7	8
112	Data on the comprehensive first-principles diffusion study of the aluminum-magnesium system. Data in Brief, 2020, 30, 105381.	1.0	7
113	Thermodynamic Assessment of the Al-Zr Binary System. Journal of Phase Equilibria and Diffusion, 2001, 22, 544-551.	0.3	7
114	Ordering transformation and spinodal decomposition in Au-Ni alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1999, 30, 707-716.	2.2	6
115	Dynamic surface acoustic response to a thermal expansion source on an anisotropic half space. Journal of the Acoustical Society of America, 2013, 133, 2634-2640.	1.1	6
116	Dual Silicon Oxycarbide Accelerated Growth of Wellâ€Ordered Graphitic Networks for Electronic and Thermal Applications. Advanced Materials Technologies, 2019, 4, 1800324.	5.8	6
117	Vapor pressure measurements of Mg(BH4)2 using Knudsen torsion effusion thermo graphic method. International Journal of Hydrogen Energy, 2014, 39, 2175-2186.	7.1	5
118	Thermal Conductivity Degradation and Microstructural Damage Characterization in Low-Dose Ion Beam-Irradiated 3C-SiC. Metallurgical and Materials Transactions E, 2017, 4, 61-69.	0.5	5
119	Phase Equilibria and Diffusion in the Ni-Cr-Pt System at 1200ÂÂ°C. Journal of Phase Equilibria and Diffusion, 2019, 40, 542-552.	1.4	4
120	A Mnemonic Scheme for Thermodynamics. MRS Bulletin, 2009, 34, 92-94.	3.5	3
121	Spatially Resolved Measurements of Thermal Stresses by Picosecond Time-Domain Probe Beam Deflection. Journal of Thermal Stresses, 2009, 33, 9-14.	2.0	3
122	Measurement of an Isoâ€Curie Temperature Line of a Coï£¿Crï£¿Mo Solid Solution by Magnetic Force Microscopy Imaging on a Diffusion Multiple. Advanced Engineering Materials, 2013, 15, 321-324.	3.5	3
123	Redetermination of di-Î¼-hydrido-hexahydridotetrakis(tetrahydrofuran)dialuminium(III)magnesium(II). Acta Crystallographica Section E: Structure Reports Online, 2010, 66, m575-m575.	0.2	2
124	Microstructure and Fracture Toughness of an Aluminum-Steel Impact Weld and Effect of Thermal Exposure. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2021, 52, 2795.	2.2	2
125	Evaluation of Phase Relations in the Nb-Cr-Al System at 1000 Â°C Using a Diffusion-Multiple Approach. Journal of Phase Equilibria and Diffusion, 2004, 25, 152-159.	1.4	2
126	Magnetizationâ€“structureâ€“composition phase diagram mapping in Co-Fe-Ni alloys using diffusion multiples and scanning Hall probe microscopy. Scientific Reports, 2022, 12, 1957.	3.3	2

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127	Constructing ternary phase diagrams directly from EPMA compositional maps. Microscopy and Microanalysis, 2008, 14, 1276-1277.	0.4	1
128	Large dataset generation, integration and simulation in materials science. Jom, 2011, 63, 24-24.	1.9	1
129	Digital Physical Property Data for the Materials Genome Initiative. Journal of Phase Equilibria and Diffusion, 2012, 33, 258-259.	1.4	1
130	Nonlinear Arrhenius behavior of self-diffusion in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î²</mml:mi><mml:mtext>â^'</mml:mtext><mml:mi>Ti</mml:mi></mml:math> and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Mo</mml:mi></mml:math>. Physical Review Materials, 2022, 6, .	2.4	1
131	Celebrating the 80th Birthday of Professor Zhanpeng Jin. Journal of Phase Equilibria and Diffusion, 2018, 39, 455-455.	1.4	0
132	A Review of Residential-Scale Natural Gas-Powered Micro-Combined Heat and Power Engine Systems. Energy, Environment, and Sustainability, 2019, , 381-419.	1.0	0