Ji-Cheng Zhao

List of Publications by Year in descending order

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76326 76900 6,200 132 40 74 citations h-index g-index papers 143 143 143 5070 docs citations times ranked citing authors all docs

#	Article	IF	CITATIONS
1	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
2	Ultrafast high-temperature sintering to avoid metal loss toward high-performance and scalable cermets. Matter, 2022, 5, 594-604.	10.0	10
3	Magnetization–structure–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
4	Nonlinear Arrhenius behavior of self-diffusion in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>\hat{l}^2</mml:mi><mml:mtext>\hat{a}^2</mml:mtext><mn <mml:math="" and="" xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Mo</mml:mi></mn></mml:math> . Physical Review Materials, 2022, 6, .	nl:mi>Ti 1<br 2.4	mml:mi>1
5	Rapid Synthesis and Sintering of Metals from Powders. Advanced Science, 2021, 8, e2004229.	11.2	23
6	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
7	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
8	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
9	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
10	An integrated experimental and computational study of diffusion and atomic mobility of the aluminum–magnesium system. Acta Materialia, 2020, 189, 214-231.	7.9	29
11	A comprehensive diffusion mobility database comprising 23 elements for magnesium alloys. Acta Materialia, 2020, 201, 191-208.	7.9	26
12	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
13	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
14	A general method to synthesize and sinter bulk ceramics in seconds. Science, 2020, 368, 521-526.	12.6	357
15	Data on the comprehensive first-principles diffusion study of the aluminum-magnesium system. Data in Brief, 2020, 30, 105381.	1.0	7
16	First measurement of diffusion coefficients of lithium in magnesium. Materialia, 2020, 11, 100674.	2.7	8
17	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
18	Phase Equilibria and Diffusion in the Ni-Cr-Pt System at 1200°C. Journal of Phase Equilibria and Diffusion, 2019, 40, 542-552.	1.4	4

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19	Measurements of diffusion coefficients of Ce, Gd and Mn in Mg. Materialia, 2019, 7, 100353.	2.7	27
20	Dual Silicon Oxycarbide Accelerated Growth of Wellâ€Ordered Graphitic Networks for Electronic and Thermal Applications. Advanced Materials Technologies, 2019, 4, 1800324.	5 . 8	6
21	New frontiers for the materials genome initiative. Npj Computational Materials, 2019, 5, .	8.7	312
22	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
23	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
24	pydiffusion: A Python Library for Diffusion Simulation and Data Analysis. Journal of Open Research Software, 2019, 7, 13.	5 . 9	14
25	First measurement of the full elastic constants of Ni-based superalloy René 88DT. Scripta Materialia, 2018, 152, 24-26.	5.2	8
26	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
27	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
28	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
29	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
30	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
31	Diffusion in the Ti-Al-V System. Journal of Phase Equilibria and Diffusion, 2018, 39, 731-746.	1.4	26
32	Celebrating the 80th Birthday of Professor Zhanpeng Jin. Journal of Phase Equilibria and Diffusion, 2018, 39, 455-455.	1.4	0
33	Techno-economic analysis of high-efficiency natural-gas generators for residential combined heat and power. Applied Energy, 2018, 226, 1064-1075.	10.1	15
34	Recommendation for reliable evaluation of diffusion coefficients from diffusion profiles with steep concentration gradients. Materialia, 2018, 2, 63-67.	2.7	15
35	Anisotropic thermal conductivity of magnetocaloric AlFe2B2. Materialia, 2018, 1, 150-154.	2.7	10
36	A general model for thermal and electrical conductivity of binary metallic systems. Acta Materialia, 2017, 126, 272-279.	7.9	17

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37	Measurement of interdiffusion and impurity diffusion coefficients in the bcc phase of the Ti–X (XÂ=ÂCr,) Tj E 3255-3268.	TQq1 1 0.7 3.7	'84314 rgBT 50
38	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
39	Facile measurement of single-crystal elastic constants from polycrystalline samples. Npj Computational Materials, 2017, 3, .	8.7	30
40	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
41	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
42	The Thermodynamics and Kinetics of High-Entropy Alloys. Journal of Phase Equilibria and Diffusion, 2017, 38, 351-352.	1.4	8
43	Accurate and efficient measurement of impurity (dilute) diffusion coefficients without isotope tracer experiments. Scripta Materialia, 2017, 128, 32-35.	5.2	30
44	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
45	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
46	High-temperature oxidation behavior of thermoelectric SnSe. Journal of Alloys and Compounds, 2016, 669, 224-231.	5.5	69
47	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
48	Experimental determination of the Ni–Cr–Ru phase diagram and thermodynamic reassessments of the Cr–Ru and Ni–Cr–Ru systems. Intermetallics, 2015, 64, 86-95.	3.9	12
49	Application of dual-anneal diffusion multiples to the effective study of phase diagrams and phase transformations in the Fe–Cr–Ni system. Acta Materialia, 2015, 88, 196-206.	7.9	46
50	Formation Mechanisms, Structure, Solution Behavior, and Reactivity of Aminodiborane. Journal of the American Chemical Society, 2015, 137, 12406-12414.	13.7	42
51	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
52	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
53	Combinatorial Approach Based on Interdiffusion Experiments for the Design of Thermoelectrics: Application to the Mg ₂ (Si,Sn) Alloys. Chemistry of Materials, 2014, 26, 4334-4337.	6.7	27
54	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

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55	High-throughput experimental tools for the materials genome initiative. Science Bulletin, 2014, 59, 1652-1661.	1.7	25
56	Impurity and interdiffusion coefficients of the Cr–X (X=Co, Fe, Mo, Nb, Ni, Pd, Pt, Ta) binary systems. Journal of Alloys and Compounds, 2014, 604, 142-150.	5.5	32
57	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
58	The Roles of Dihydrogen Bonds in Amine Borane Chemistry. Accounts of Chemical Research, 2013, 46, 2666-2675.	15.6	122
59	Synthesis, structural analysis, and thermal decomposition studies of [(NH3)2BH2]B3H8. RSC Advances, 2013, 3, 7460.	3.6	16
60	Measurement of an Isoâ€Curie Temperature Line of a CoCrMo Solid Solution by Magnetic Force Microscopy Imaging on a Diffusion Multiple. Advanced Engineering Materials, 2013, 15, 321-324.	3.5	3
61	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
62	Thermolysis and solid state NMR studies of NaB ₃ H ₈ , NH ₃ B ₃ H ₇ , and NH ₄ B ₃ H ₈ . Dalton Transactions, 2013, 42, 701-708.	3.3	30
63	Extracting interdiffusion coefficients from binary diffusion couples using traditional methods and a forward-simulation method. Intermetallics, 2013, 34, 132-141.	3.9	74
64	Generation and detection of gigahertz surface acoustic waves using an elastomeric phase-shift mask. Journal of Applied Physics, 2013, 114, .	2.5	16
65	Structure determination of an amorphous compound AlB4H11. Chemical Science, 2012, 3, 3183.	7.4	13
66	Largeâ€Scale and Facile Preparation of Pure Ammonia Borane through Displacement Reactions. Chemistry - A European Journal, 2012, 18, 11994-11999.	3.3	40
67	Digital Physical Property Data for the Materials Genome Initiative. Journal of Phase Equilibria and Diffusion, 2012, 33, 258-259.	1.4	1
68	Anti and gauche conformers of an inorganic butane analogue, NH3BH2NH2BH3. Chemical Communications, 2012, 48, 7943.	4.1	26
69	A Convenient Synthesis and a NMR Study of the Diammoniate of Diborane. Chemistry - A European Journal, 2012, 18, 3490-3492.	3.3	22
70	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
71	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
72	Thermal conductivity mapping of the Ni–Al system and the beta-NiAl phase in the Ni–Al–Cr system. Scripta Materialia, 2012, 66, 935-938.	5.2	32

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73	Comprehensive NMR Study of Magnesium Borohydride. Journal of Physical Chemistry C, 2011, 115, 3172-3177.	3.1	39
74	Synthesis, Structural Characterization, and Thermal Decomposition Study of Mg(H ₂ O) ₆ B ₁₀ H ₁₀ Â-4H ₂ O. Journal of Physical Chemistry C, 2011, 115, 11793-11802.	3.1	10
75	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
76	Ammonium Octahydrotriborate (NH4B3H8): New Synthesis, Structure, and Hydrolytic Hydrogen Release. Inorganic Chemistry, 2011, 50, 3738-3742.	4.0	67
77	Large dataset generation, integration and simulation in materials science. Jom, 2011, 63, 24-24.	1.9	1
78	High-throughput measurements of materials properties. Jom, 2011, 63, 40-44.	1.9	20
79	Large dataset generation, integration and simulation in materials science, part II. Jom, 2011, 63, 40-40.	1.9	12
80	High-capacity hydrogen release through hydrolysis of NaB3H8. International Journal of Hydrogen Energy, 2011, 36, 7038-7042.	7.1	33
81	Li2B12H12·7NH3: a new ammine complex for ammonia storage or indirect hydrogen storage. Journal of Materials Chemistry, 2010, 20, 2743.	6.7	38
82	Effect of MeV ion irradiation on the coefficient of thermal expansion of Fe–Ni Invar alloys: A combinatorial study. Acta Materialia, 2010, 58, 1236-1241.	7.9	25
83	Intermolecular dihydrogen- and hydrogen-bonding interactions in diammonium <i>closo</i> closo </td <td>0.4</td> <td>13</td>	0.4	13
84	Redetermination of di-ν-hydrido-hexahydridotetrakis(tetrahydrofuran)dialuminium(III)magnesium(II). Acta Crystallographica Section E: Structure Reports Online, 2010, 66, m575-m575.	0.2	2
85	A Simple and Efficient Way to Synthesize Unsolvated Sodium Octahydrotriborate. Inorganic Chemistry, 2010, 49, 8185-8187.	4.0	41
86	Facile Synthesis of Aminodiborane and Inorganic Butane Analogue NH ₃ BH ₂ NH ₂ BH ₃ . Journal of the American Chemical Society, 2010, 132, 10658-10659.	13.7	91
87	Thermal Decomposition Behavior of Hydrated Magnesium Dodecahydrododecaborates. Journal of Physical Chemistry Letters, 2010, 1, 201-204.	4.6	23
88	Effect of ternary elements on a martensitic transformation in \hat{l}^2 -NiAl. Intermetallics, 2010, 18, 796-802.	3.9	41
89	A Mnemonic Scheme for Thermodynamics. MRS Bulletin, 2009, 34, 92-94.	3.5	3
90	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

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91	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
92	Low-profile ultra-wideband inverted-hat monopole antenna for 50â€MHz–2â€GHz operation. Electronics Letters, 2009, 45, 142.	1.0	29
93	Spatially Resolved Measurements of Thermal Stresses by Picosecond Time-Domain Probe Beam Deflection. Journal of Thermal Stresses, 2009, 33, 9-14.	2.0	3
94	Study of Aluminoborane Compound AlB4H11 for Hydrogen Storage. Journal of Physical Chemistry C, 2009, 113, 2-11.	3.1	27
95	NMR Confirmation for Formation of [B ₁₂ H ₁₂] ²⁻ Complexes during Hydrogen Desorption from Metal Borohydrides. Journal of Physical Chemistry C, 2008, 112, 3164-3169.	3.1	280
96	Ammine Magnesium Borohydride Complex as a New Material for Hydrogen Storage: Structure and Properties of Mg(BH $<$ sub $>4<$ /sub $>$) $<$ sub $>2<$ /sub $>$ Â \cdot 2NH $<$ sub $>3<$ /sub $>$. Inorganic Chemistry, 2008, 47, 4290-4298.	4.0	199
97	Micron-scale measurements of the coefficient of thermal expansion by time-domain probe beam deflection. Journal of Applied Physics, 2008, 104, .	2.5	40
98	Constructing ternary phase diagrams directly from EPMA compositional maps. Microscopy and Microanalysis, 2008, 14, 1276-1277.	0.4	1
99	High-throughput thermal conductivity measurements of nickel solid solutions and the applicability of the Wiedemann–Franz law. Acta Materialia, 2007, 55, 5177-5185.	7.9	87
100	Structure of unsolvated magnesium borohydride Mg(BH ₄) ₂ . Acta Crystallographica Section B: Structural Science, 2007, 63, 561-568.	1.8	215
101	Combinatorial approaches as effective tools in the study of phase diagrams and composition–structure–property relationships. Progress in Materials Science, 2006, 51, 557-631.	32.8	202
102	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
103	Thermal Conductivity Imaging of Thermal Barrier Coatings. Advanced Engineering Materials, 2005, 7, 622-626.	3.5	39
104	High-throughput diffusion multiples. Materials Today, 2005, 8, 28-37.	14.2	67
105	THE DIFFUSION-MULTIPLE APPROACH TO DESIGNING ALLOYS. Annual Review of Materials Research, 2005, 35, 51-73.	9.3	84
106	Thermal conductivity imaging at micrometre-scale resolution for combinatorial studies of materials. Nature Materials, 2004, 3, 298-301.	27.5	148
107	Reliability of the diffusion-multiple approach for phase diagram mapping. Journal of Materials Science, 2004, 39, 3913-3925.	3.7	77
108	Mapping of the Nb–Ti–Si phase diagram using diffusion multiples. Materials Science & Discretified amp; Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 372, 21-27.	5.6	99

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109	Evaluation of Phase Relations in the Nb-Cr-Al System at 1000 °C Using a Diffusion-Multiple Approach. Journal of Phase Equilibria and Diffusion, 2004, 25, 152-159.	1.4	2
110	Determination of the Nb–Cr–Si phase diagram using diffusion multiples. Acta Materialia, 2003, 51, 6395-6405.	7.9	93
111	Phase diagram of the Nb–Al–Si ternary system. Journal of Alloys and Compounds, 2003, 360, 183-188.	5.5	59
112	Thermodynamic modeling of the Nb–Hf–Si ternary system. Intermetallics, 2003, 11, 407-415.	3.9	50
113	Ultrahigh-Temperature Nb-Silicide-Based Composites. MRS Bulletin, 2003, 28, 646-653.	3.5	277
114	Combinatorial Materials Science: What's New Since Edison?. MRS Bulletin, 2002, 27, 295-300.	3.5	94
115	A Diffusion Multiple Approach for the Accelerated Design of Structural Materials. MRS Bulletin, 2002, 27, 324-329.	3.5	62
116	The thermodynamic prediction of phase stability in multicomponent superalloys. Jom, 2002, 54, 37-41.	1.9	18
117	Thermodynamic assessment of the Al-Hf binary system. Journal of Phase Equilibria and Diffusion, 2002, 23, 416-423.	0.3	31
118	Determination of Nb–Hf–Si phase equilibria. Intermetallics, 2001, 9, 681-689.	3.9	44
119	Thermodynamic assessment of the Al-Zr binary system. Journal of Phase Equilibria and Diffusion, 2001, 22, 544-551.	0.3	79
120	A combinatorial approach for efficient mapping of phase diagrams and properties. Journal of Materials Research, 2001, 16, 1565-1578.	2.6	112
121	Thermodynamic Assessment of the Al-Zr Binary System. Journal of Phase Equilibria and Diffusion, 2001, 22, 544-551.	0.3	7
122	Phase precipitation and timeâ€"temperature-transformation diagram of Hastelloy X. Materials Science & Science & Structural Materials: Properties, Microstructure and Processing, 2000, 293, 112-119.	5. 6	133
123	Hf-Si binary phase diagram determination and thermodynamic modeling. Journal of Phase Equilibria and Diffusion, 2000, 21, 40-45.	0.3	37
124	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
125	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
126	Microstructure and precipitation kinetics in a Cu-7.5Ni-5Sn alloy. Scripta Materialia, 1998, 39, 1509-1516.	5.2	27

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127	Spinodal decomposition, ordering transformation, and discontinuous precipitation in a Cu–15Ni–8Sn alloy. Acta Materialia, 1998, 46, 4203-4218.	7.9	185
128	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
129	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
130	Phase transformation kinetics and the assessment of equilibrium and metastable states. Journal of Phase Equilibria and Diffusion, 1993, 14, 303-315.	0.3	22
131	Isothermal decomposition of supercooled austenite in steels. Materials Science and Technology, 1992, 8, 1004-1010.	1.6	33
132	Diffusion quadruples for the determination of quaternary phase diagrams applied to FeCoNiCr system. Scripta Metallurgica, 1988, 22, 1825-1829.	1.2	8