

Brent Fultz

List of Publications by Year in descending order

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100
papers

5,093
citations

117453

34
h-index

91712

69
g-index

106
all docs

106
docs citations

106
times ranked

5150
citing authors

#	ARTICLE	IF	CITATIONS
1	Vibrational thermodynamics of materials. Progress in Materials Science, 2010, 55, 247-352.	16.0	501
2	Altering Hydrogen Storage Properties by Hydride Destabilization through Alloy Formation: LiH and MgH_2 Destabilized with Si. Journal of Physical Chemistry B, 2004, 108, 13977-13983.	1.2	417
3	Structure of the high voltage phase of layered $\text{P}_2\text{-Na}_{2/3}\text{z}[\text{Mn}_{1/2}\text{Fe}_{1/2}]\text{O}_2$ and the positive effect of Ni substitution on its stability. Energy and Environmental Science, 2015, 8, 2512-2523.	15.6	331
4	Hydrogen desorption and adsorption measurements on graphite nanofibers. Applied Physics Letters, 1998, 73, 3378-3380.	1.5	223
5	Design and operation of the wide angular-range chopper spectrometer ARCS at the Spallation Neutron Source. Review of Scientific Instruments, 2012, 83, 015114.	0.6	210
6	Structural Relationship between Negative Thermal Expansion and Quartic Anharmonicity of Cubic ScF_3 . Physical Review Letters, 2011, 107, 195504.	2.9	201
7	Measurements of 3d state occupancy in transition metals using electron energy loss spectrometry. Applied Physics Letters, 1988, 53, 1405-1407.	1.5	182
8	Electrochemical Studies on $\text{LaNi}_5\text{-xSn}_x$ Metal Hydride Alloys. Journal of the Electrochemical Society, 1996, 143, 2578-2584.	1.3	181
9	Phonons in Nanocrystalline Fe . Physical Review Letters, 1997, 79, 937-940.	2.9	180
10	Irreversible Capacities of Graphite in Low-Temperature Electrolytes for Lithium-Ion Batteries. Journal of the Electrochemical Society, 1999, 146, 3963-3969.	1.3	173
11	Transmission Electron Microscopy and Diffractometry of Materials. Graduate Texts in Physics, 2013, . .	0.1	166
12	Phonon densities of states and vibrational entropies of ordered and disordered Ni_3Al . Physical Review B, 1995, 52, 3315-3321.	1.1	111
13	Phonons in nanocrystalline Ni_3Fe . Physical Review B, 1998, 57, 898-905.	1.1	103
14	Phonons in aluminum at high temperatures studied by inelastic neutron scattering. Physical Review B, 2008, 77, .	1.1	96
15	White lines and d-band occupancy for the 3d transition-metal oxides and lithium transition-metal oxides. Physical Review B, 2004, 69, .	1.1	93
16	Phonon density of states of nanocrystalline Fe prepared by high-energy ball milling. Journal of Applied Physics, 1996, 79, 8318-8322.	1.1	91
17	Separating the configurational and vibrational entropy contributions in metallic glasses. Nature Physics, 2017, 13, 900-905.	6.5	83
18	Vibrational density of states of nanocrystalline Ni_3Fe . The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1997, 75, 335-347.	0.6	77

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19	Suppressed kinetics of short range ordering at low temperatures. Journal of Chemical Physics, 1987, 87, 1604-1609.	1.2	73
20	Two-phase coexistence in Fe-Ni alloys synthesized by ball milling. Journal of Applied Physics, 1996, 79, 3946.	1.1	73
21	Nuclear quantum effect with pure anharmonicity and the anomalous thermal expansion of silicon. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 1992-1997.	3.3	68
22	Phases and phase stabilities of Fe ₃ X alloys (X=Al, As, Ge, In, Sb, Si, Sn, Zn) prepared by mechanical alloying. Journal of Applied Physics, 1994, 76, 5961-5966.	1.1	66
23	The role of phonons in the thermodynamics of the martensitic transformation in NiTi. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 2001, 81, 299-311.	0.6	60
24	Hydrogen Sorption Behavior of the ScH ₂ LiBH ₄ System: Experimental Assessment of Chemical Destabilization Effects. Journal of Physical Chemistry C, 2008, 112, 8481-8485.	1.5	59
25	Vibrational modes in nanocrystalline iron under high pressure. Physical Review B, 2004, 69, .	1.1	58
26	Thermodynamic modelling of crystalline unary phases. Physica Status Solidi (B): Basic Research, 2014, 251, 14-32.	0.7	55
27	Chemically disordered Ni ₃ Al synthesized by high vacuum evaporation. Journal of Materials Research, 1991, 6, 2019-2021.	1.2	52
28	Heat capacity and microstructure of ordered and disordered Pd ₃ V. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 2000, 80, 1167-1178.	0.6	48
29	Phonon anharmonicity in silicon from 100 to 1500 K. Physical Review B, 2015, 91, .	1.1	47
30	Adiabatic Electron-Phonon Interaction and High-Temperature Thermodynamics of A_{15} Compounds. Physical Review Letters, 2008, 101, 105504.	2.9	39
31	Local Chemical Environments and the Phonon Partial Densities of States of Fe ₅₇ Fe ₃ Al. Physical Review Letters, 1998, 80, 3304-3307.	2.9	36
32	Nanocrystalline iron at high pressure. Journal of Applied Physics, 2001, 89, 4794-4796.	1.1	36
33	Electron-phonon interactions and high-temperature thermodynamics of vanadium and its alloys. Physical Review B, 2008, 77, .	1.1	36
34	Positive Vibrational Entropy of Chemical Ordering in FeV. Physical Review Letters, 2011, 107, 115501.	2.9	35
35	Kinetic paths of B ₂ and DO ₃ order parameters: Theory. Journal of Materials Research, 1989, 4, 1132-1139.	1.2	34
36	Phonons in \mathbf{Si}_{24} at simultaneously elevated temperature and pressure. Physical Review B, 2017, 95, .	1.1	33

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37	Vibrational and electronic entropy of $\hat{\Gamma}^2$ -cerium and $\hat{\Gamma}^3$ -cerium measured by inelastic neutron scattering. Physical Review B, 2002, 65, .	1.1	31
38	Nonharmonic phonons in $\hat{\Gamma}^{\pm}$ -iron at high temperatures. Physical Review B, 2014, 90, .	1.1	31
39	Electrochemical Properties of $\text{LaNi}_5\text{-}x\text{Ge}_x$ Alloys in Ni-MH Batteries. Journal of the Electrochemical Society, 1997, 144, 3758-3764.	1.3	29
40	Kinetics of short- and long-range B2 ordering in the pair approximation. Journal of Materials Research, 1990, 5, 1419-1430.	1.2	28
41	Entropic elasticity and negative thermal expansion in a simple cubic crystal. Science Advances, 2019, 5, eaay2748.	4.7	28
42	Anharmonic lattice dynamics of Ag_2 by inelastic neutron scattering and first-principles molecular dynamics simulations. Physical Review B, 2014, 89, .	1.1	27
43	A microstructural study of mechanical alloying of Fe and Sn powders. Journal of Materials Research, 1992, 7, 1387-1395.	1.2	24
44	The Debye temperature of nanocrystalline $\hat{\Gamma}^2$ -Sn measured by x-ray diffraction. Journal of Materials Research, 1995, 10, 2408-2410.	1.2	24
45	Vibrational entropies of alloying and compound formation: Experimental trends. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1999, 79, 753-765.	0.6	24
46	Phase equilibria of Co_3V . Journal of Phase Equilibria and Diffusion, 1997, 18, 21-23.	0.3	23
47	Temperature dependence of the phonon entropy of vanadium. Physical Review B, 2001, 65, .	1.1	21
48	Kinetic paths of B2 and DO3 order parameters: Experiment. Journal of Materials Research, 1989, 4, 1140-1142.	1.2	20
49	Percolation in alloys with thermally activated diffusion. Journal of Applied Physics, 1989, 66, 4752-4755.	1.1	18
50	Temperature-dependent phonon lifetimes and thermal conductivity of silicon by inelastic neutron scattering and <i>ab initio</i> calculations. Physical Review B, 2020, 102, .	1.1	18
51	Phonon quarticity induced by changes in phonon-tracked hybridization during lattice expansion and its stabilization of rutile TiO_2 . Physical Review B, 2015, 92, .	1.1	16
52	An effect of antiphase boundaries on the kinetics of short-range ordering by a vacancy mechanism. Journal of Chemical Physics, 1988, 88, 3227-3229.	1.2	15
53	Kinetics of B2, $\text{DO}_{3\text{B}}$, and B32 ordering: Results from pair approximation calculations and Monte Carlo simulations. Journal of Materials Research, 1994, 9, 348-356.	1.2	15
54	Incipient chemical instabilities of nanophase Fe-Cu alloys prepared by mechanical alloying. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1996, 27, 2934-2946.	1.1	15

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55	Vibrational entropies of phases of Co_3V measured by inelastic neutron scattering and cryogenic calorimetry. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1997, 75, 681-699.	0.6	15
56	Vibrations of Micro-eV Energies in Nanocrystalline Microstructures. Physical Review Letters, 2004, 93, 205501.	2.9	15
57	A Raman Spectrometry Study of Phonon Anharmonicity of Zirconia at Elevated Temperatures. Journal of the American Ceramic Society, 2011, 94, 224-229.	1.9	15
58	Icosahedral phase formation in rapidly quenched aluminum-ruthenium alloys. Journal of Materials Research, 1988, 3, 421-425.	1.2	14
59	Phonon anharmonicity of monoclinic zirconia and yttrium-stabilized zirconia. Physical Review B, 2015, 91, .	1.1	13
60	Anharmonic Origin of the Giant Thermal Expansion of NaBr. Physical Review Letters, 2020, 125, 085504.	2.9	13
61	Vacancy trapping on lattices with different coordination numbers. Philosophical Magazine Letters, 1989, 59, 237-241.	0.5	12
62	Phonon densities of states of face-centered-cubic Ni-Fe alloys. Journal of Applied Physics, 2013, 113, .	1.1	12
63	Temperature dependence of phonons in Pd ₃ Fe through the Curie temperature. Physical Review B, 2018, 98, .	1.1	12
64	High-Pressure Hydrogen Adsorption on a Porous Electron-Rich Covalent Organonitridic Framework. ACS Omega, 2019, 4, 444-448.	1.6	12
65	Temperature dependence of electron-phonon interactions in vanadium. Physical Review B, 2020, 101, .	1.1	12
66	A thermodynamic investigation of adsorbate-adsorbate interactions of carbon dioxide on nanostructured carbons. AIChE Journal, 2018, 64, 1026-1033.	1.8	11
67	A Mössbauer spectrometry study of the kinetics of short-range ordering in FeCo. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1989, 60, 601-615.	0.6	10
68	Phonon thermodynamics and elastic behavior of GaN at high temperatures and pressures. Physical Review B, 2018, 98, .	1.1	10
69	B2 and B32 ordering transformations of equiatomic bcc alloys with ballistic and thermal atom movements. Journal of Materials Research, 1995, 10, 126-132.	1.2	9
70	Temperature dependence of phonons in FeGe ₂ . Physical Review Materials, 2018, 2, .	0.9	9
71	Short-range ordering in face-centered-cubic Ni ₃ Al. Journal of Applied Physics, 1995, 77, 4380-4383.	1.1	8
72	Phonon anharmonicity and components of the entropy in palladium and platinum. Physical Review B, 2016, 93, .	1.1	8

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73	Phonons and elasticity of cementite through the Curie temperature. <i>Physical Review B</i> , 2017, 95, .	1.1	8
74	Thermodynamic stability and contributions to the Gibbs free energy of nanocrystalline Ni_3Fe . <i>Physical Review Materials</i> , 2020, 4, .	0.9	8
75	Unexpected similarity of the dynamic magnetic susceptibilities of Ce^{3+} -cerium and Ce^{2+} -cerium. <i>The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties</i> , 2001, 81, 675-687.	0.6	7
76	Self-organized carbon nanostrips with a new LiC_{10} structure derived from carbon nanotubes. <i>Journal of Chemical Physics</i> , 2001, 115, 10585-10588.	1.2	7
77	The Mössbauer effect explained. <i>American Journal of Physics</i> , 1998, 66, 593-596.	0.3	6
78	Structural relaxation within the grain boundaries of nanocrystalline Ni_3Fe . <i>The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties</i> , 2000, 80, 1545-1554.	0.6	5
79	Thermal expansion and phonon anharmonicity of cuprite studied by inelastic neutron scattering and <i>ab initio</i> calculations. <i>Physical Review B</i> , 2022, 105, .	1.1	5
80	Mössbauer diffraction and interference studies of polycrystalline metals and alloys. , 1998, 113, 199-217.		4
81	Thermodynamics and kinetics of self-discharge in graphite-lithium electrodes. , 0, , .		4
82	Nonharmonic phonons in MgB_2 at elevated temperatures. <i>Physical Review B</i> , 2011, 83, .	1.1	4
83	Kinetics of Ordering in Fe_3Al : Experiment. <i>Materials Research Society Symposia Proceedings</i> , 1990, 186, 187.	0.1	3
84	Microstructural dependence of vacancy diffusion in ordered alloys. <i>Journal of Applied Physics</i> , 1994, 75, 1467-1472.	1.1	3
85	Thermally Driven Electronic Topological Transition in FeTi . <i>Physical Review Letters</i> , 2016, 117, 076402.	2.9	3
86	Phonon thermodynamics and elastic behavior of GaAs at high temperatures and pressures. <i>Physical Review B</i> , 2020, 101, .	1.1	3
87	Interface pinning causes the hysteresis of the hydride transformation in binary metal hydrides. <i>Physical Review Materials</i> , 2021, 5, .	0.9	3
88	Changes in vibrational entropy during the early stages of chemical unmixing in fcc $\text{Cu}_{64}\text{Fe}_{16}$. <i>Acta Materialia</i> , 2013, 61, 7466-7472.	3.8	2
89	Miscibility gap and phonon thermodynamics of Fe-Au alloys studied by inelastic neutron scattering and nuclear-resonant inelastic x-ray scattering. <i>AIP Conference Proceedings</i> , 2015, , .	0.3	2
90	High capacity V-based metal hydride electrodes for rechargeable batteries. <i>Journal of Materials Chemistry A</i> , 2017, 5, 21785-21794.	5.2	2

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91	Extended-range Variable Altitude Balloons for Venus atmospheric missions. Acta Astronautica, 2022, 197, 69-80.	1.7	2
92	Kinetics of B2 and D03 Ordering: Theory. Materials Research Society Symposia Proceedings, 1990, 186, 181.	0.1	1
93	The kinetic stability of alloys having periodic minimal surface microstructures. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1994, 70, 607-619.	0.8	1
94	Carbon as a high capacity solid state storage medium for hydrogen. , 1999, , .		1
95	EELS Analysis of the Electronic Structure and Microstructure of Metals. , 2005, , 317-352.		1
96	Prediction and observation of intermodulation sidebands from anharmonic phonons in NaBr. Physical Review B, 2021, 103, .	1.1	1
97	An Inelastic Nuclear Resonant Scattering Study of Partial Entropies of Ordered and Disordered Fe ₃ Al. Materials Research Society Symposia Proceedings, 1999, 590, 91.	0.1	0
98	Electronic structure analysis of LiCoO ₂ using Electron Energy Loss Spectroscopy (EELS). Microscopy and Microanalysis, 2001, 7, 1186-1187.	0.2	0
99	Foreword: Special Topic on "Neutron and X-Ray Diffraction Studies of Advanced Materials IV" Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2012, 43, 1410-1412.	1.1	0
100	The temperature dependence of nuclear resonant X-Ray spectra of magnetic iron and cementite. Hyperfine Interactions, 2022, 243, 1.	0.2	0