Brian F Woodfield

List of Publications by Year
in descending order

115 papers	4,028 citations	147801 31 h-index	133252 59 g-index
116 all docs	116 docs citations	116 times ranked	4663 citing authors

#	Article	IF	Citations
1	High Purity Anatase TiO2Nanocrystals:Â Near Room-Temperature Synthesis, Grain Growth Kinetics, and Surface Hydration Chemistry. Journal of the American Chemical Society, 2005, 127, 8659-8666.	13.7	527
2	Energy Crossovers in Nanocrystalline Zirconia. Journal of the American Ceramic Society, 2005, 88, 160-167.	3.8	252
3	Heat capacities and thermodynamic functions of TiO2 anatase and rutile: Analysis of phase stability. American Mineralogist, 2009, 94, 236-243.	1.9	213
4	TiO2 Stability Landscape:â€‰ Polymorphism, Surface Energy, and Bound Water Energetics. Chemistry of Materials, 2006, 18, 6324-6332.	6.7	187
5	Evidence of linear lattice expansion and covalency enhancement in rutile TiO2 nanocrystals. Applied Physics Letters, 2004, 85, 2059-2061.	3.3	177
6	Accurate heat capacity measurements on powdered samples using a Quantum Design physical property measurement system. Journal of Chemical Thermodynamics, 2010, 42, 1107-1115.	2.0	122
7	An improved technique for accurate heat capacity measurements on powdered samples using a commercial relaxation calorimeter. Journal of Chemical Thermodynamics, 2011, 43, 1263-1269.	2.0	108
8	Facile solvent-deficient synthesis of mesoporous Î³-alumina with controlled pore structures. Microporous and Mesoporous Materials, 2013, 165, 70-78.	4.4	90
9	Thermodynamics of Fe oxides: Part I. Entropy at standard temperature and pressure and heat capacity of goethite (Î±-FeOOH), lepidocrocite (Î³-FeOOH), and maghemite (Î³-Fe₂O₃). American Mineralogist, 2003, 88, 846-854.	1.9	80
10	Improved calculations of pore size distribution for relatively large, irregular slit-shaped mesopore structure. Microporous and Mesoporous Materials, 2014, 184, 112-121.	4.4	75
11	Supported Iron Fischerâ€“Tropsch Catalyst: Superior Activity and Stability Using a Thermally Stable Silica-Doped Alumina Support. ACS Catalysis, 2014, 4, 1071-1077.	11.2	72
12	Surface Water and the Origin of the Positive Excess Specific Heat for 7 nm Rutile and Anatase Nanoparticles. Nano Letters, 2006, 6, 750-754.	9.1	66
13	Facile synthesis of mesoporous Î³-alumina with tunable pore size: The effects of water to aluminum molar ratio in hydrolysis of aluminum alkoxides. Microporous and Mesoporous Materials, 2014, 183, 37-47.	4.4	58
14	Effect of different alumina supports on performance of cobalt Fischer-Tropsch catalysts. Journal of Catalysis, 2018, 359, 92-100.	6.2	57
15	Dynamics of Water Confined on a TiO₂ (Anatase) Surface. Journal of Physical Chemistry A, 2007, 111, 12584-12588.	2.5	54
16	Lattice vacancies responsible for the linear dependence of the low-temperature heat capacity of insulating materials. Physical Review B, 2015, 91, .	3.2	53
17	Design and construction of an adiabatic calorimeter for samples of less than 1cm3 in the temperature range T=15K to T=350K. Journal of Chemical Thermodynamics, 2006, 38, 1655-1663.	2.0	52
18	Synthesis and characterization of silica doped alumina catalyst support with superior thermal stability and unique pore properties. Journal of Porous Materials, 2016, 23, 475-487.	2.6	52

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19	Phase Progression of Î³-Al₂O₃ Nanoparticles Synthesized in a Solvent-Deficient Environment. Inorganic Chemistry, 2013, 52, 4411-4423.	4.0	51
20	A thermodynamic investigation of the cellulose allomorphs: Cellulose(am), cellulose IÎ²(cr), cellulose II(cr), and cellulose III(cr). Journal of Chemical Thermodynamics, 2015, 81, 184-226.	2.0	50
21	Inelastic Neutron Scattering Study of Confined Surface Water on Rutile Nanoparticles. Journal of Physical Chemistry A, 2009, 113, 2796-2800.	2.5	49
22	Facile structure-controlled synthesis of mesoporous Î³-alumina: Effects of alcohols in precursor formation and calcination. Microporous and Mesoporous Materials, 2013, 177, 37-46.	4.4	49
23	Heat capacities, third-law entropies and thermodynamic functions of the negative thermal expansion material Zn2GeO4 from T=(0 to 400) K. Journal of Chemical Thermodynamics, 2004, 36, 349-357.	2.0	48
24	Thermodynamics of the basic copper sulfates antlerite, posnjakite, and brochantite. Chemie Der Erde, 2013, 73, 39-50.	2.0	47
25	Synthesis of metal oxide nanoparticles via a robust â€œsolvent-deficientâ€•method. Nanoscale, 2015, 7, 144-156.	5.6	45
26	Heat Capacity Studies of Nanocrystalline Magnetite (Fe₃O₄). Journal of Physical Chemistry C, 2010, 114, 21100-21108.	3.1	44
27	Magnetic and Thermodynamic Properties of Nanosized Zn Ferrite with Normal Spinal Structure Synthesized Using a Facile Method. Inorganic Chemistry, 2014, 53, 10463-10470.	4.0	44
28	Calorimetric Study:â€‰ Surface Energetics and the Magnetic Transition in Nanocrystalline CoO. Chemistry of Materials, 2004, 16, 5394-5400.	6.7	43
29	Size-dependence of the heat capacity and thermodynamic properties of hematite (Î±-Fe2O3). Journal of Chemical Thermodynamics, 2010, 42, 1142-1151.	2.0	35
30	Highly active and stable supported iron Fischerâ€“Tropsch catalysts: Effects of support properties and SiO2 stabilizer on catalyst performance. Journal of Catalysis, 2014, 319, 220-231.	6.2	32
31	Calorimetric studies of the phase transition in iodoform. Canadian Journal of Chemistry, 1988, 66, 645-650.	1.1	31
32	Low temperature heat capacity Study of Fe(PO3)3 and Fe2P2O7. Journal of Chemical Thermodynamics, 2013, 61, 51-57.	2.0	31
33	Low temperature heat capacity study of Ba2TiSi2O8 and Sr2TiSi2O8. Journal of Chemical Thermodynamics, 2014, 72, 77-84.	2.0	31
34	Heat capacity and thermodynamic functions of nano-TiO2 rutile in relation to bulk-TiO2 rutile. Journal of Chemical Thermodynamics, 2015, 81, 311-322.	2.0	31
35	Low temperature heat capacity study of FePO4 and Fe3(P2O7)2. Journal of Chemical Thermodynamics, 2013, 62, 35-42.	2.0	30
36	Low temperature heat capacity study of Fe3PO7 and Fe4(P2O7)3. Journal of Chemical Thermodynamics, 2013, 62, 86-91.	2.0	30

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37	Acid site properties of thermally stable, silica-doped alumina as a function of silica/alumina ratio and calcination temperature. Applied Catalysis A: General, 2014, 482, 16-23.	4.3	29
38	The thermodynamics of formation, molar heat capacity, and thermodynamic functions ofZrTiO4(cr). Journal of Chemical Thermodynamics, 2001, 33, 165-178.	2.0	27
39	Heat capacity and thermodynamic functions of Î³-Al2O3. Journal of Chemical Thermodynamics, 2017, 112, 77-85.	2.0	27
40	Heat Capacity Studies of Surface Water Confined on Cassiterite (SnO₂) Nanoparticles. Journal of Physical Chemistry C, 2012, 116, 3910-3917.	3.1	26
41	Development of a Debye heat capacity model for vibrational modes with a gap in the density of states. Journal of Physics Condensed Matter, 2015, 27, 285402.	1.8	26
42	Heat capacities and thermodynamic functions of hexagonal ice from T=0.5K to T=38K. Journal of Chemical Thermodynamics, 2007, 39, 712-716.	2.0	25
43	Heat capacity and thermodynamic functions of nano-TiO2 anatase in relation to bulk-TiO2 anatase. Journal of Chemical Thermodynamics, 2015, 81, 298-310.	2.0	25
44	Standard methods for heat capacity measurements on a Quantum Design Physical Property Measurement System. Journal of Chemical Thermodynamics, 2020, 141, 105974.	2.0	25
45	The heat capacity of single-crystal AuZn near the martensitic transition. Journal of Chemical Thermodynamics, 2002, 34, 251-261.	2.0	24
46	Heat capacity, third-law entropy, and low-temperature physical behavior of bulk hematite (Î±-Fe2O3). Journal of Chemical Thermodynamics, 2010, 42, 1136-1141.	2.0	24
47	Thermal and hydrothermal stability of pure and silica-doped mesoporous aluminas. Microporous and Mesoporous Materials, 2019, 284, 60-68.	4.4	24
48	Heat capacity studies of the iron oxyhydroxides akaganÃ©ite (Î²-FeOOH) and lepidocrocite (Î³-FeOOH). Journal of Chemical Thermodynamics, 2011, 43, 190-199.	2.0	23
49	Molar heat capacity and thermodynamic functions of the type II antiferromagnet MnO. Journal of Chemical Thermodynamics, 1999, 31, 725-739.	2.0	22
50	Thermodynamics of monoclinic Fe2(SO4)3. Journal of Chemical Thermodynamics, 2005, 37, 802-809.	2.0	22
51	Neutron detection with cryogenics and semiconductors. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 1592-1605.	0.8	22
52	Thermochemistry of Î±-D-xylose(cr). Journal of Chemical Thermodynamics, 2013, 58, 20-28.	2.0	22
53	La-Dopant Location in La-Doped Î³-Al₂O₃ Nanoparticles Synthesized Using a Novel One-Pot Process. Journal of Physical Chemistry C, 2015, 119, 25053-25062.	3.1	22
54	Thermodynamic Evidence of Structural Transformations in CO₂-Loaded Metalâ€“Organic Framework Zn(MeIm)₂ from Heat Capacity Measurements. Journal of the American Chemical Society, 2020, 142, 4833-4841.	13.7	22

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55	Heat capacity, entropy, and magnetic properties of jarosite-group compounds. Physics and Chemistry of Minerals, 2010, 37, 635-651.	0.8	21
56	Thermodynamics of Fe₃O₄â€“Co₃O₄ and Fe₃O₄â€“Mn₃O₄ spinel solid solutions at the bulk and nanoscale. Physical Chemistry Chemical Physics, 2015, 17, 22286-22295.	2.8	21
57	Review of surface water interactions with metal oxide nanoparticles. Journal of Materials Research, 2019, 34, 416-427.	2.6	21
58	Characterization of Surface Defect Sites on Bulk and Nanophase Anatase and Rutile TiO2 by Low-Temperature Specific Heat. Journal of Physical Chemistry C, 2013, 117, 4544-4550.	3.1	20
59	Heat capacities, standard entropies and Gibbs energies of Sr-, Rb- and Cs-substituted barium aluminotitanate hollandites. Journal of Chemical Thermodynamics, 2016, 93, 1-7.	2.0	20
60	Influence of Particle Size and Water Coverage on the Thermodynamic Properties of Water Confined on the Surface of SnO₂ Cassiterite Nanoparticles. Journal of Physical Chemistry C, 2011, 115, 21105-21112.	3.1	19
61	Heat capacity of hafnia at low temperature. Journal of Chemical Thermodynamics, 2011, 43, 970-973.	2.0	19
62	Generalized preparation method and characterization of aluminum isopropoxide, aluminum phenoxide, and aluminum n-hexyloxide. Polyhedron, 2013, 62, 18-25.	2.2	19
63	Low temperature heat capacity of bulk and nanophase ZnO and Zn1â^'xCoxO wurtzite phases. Journal of Chemical Thermodynamics, 2013, 60, 191-196.	2.0	19
64	Structure and Thermochemistry of Perrhenate Sodalite and Mixed Guest Perrhenate/Pertechnetate Sodalite. Environmental Science & Technology, 2017, 51, 997-1006.	10.0	19
65	Heat capacity and thermodynamic functions of crystalline and amorphous forms of the metal organic framework zinc 2-ethylimidazolate, Zn(Etlm)2. Journal of Chemical Thermodynamics, 2018, 116, 341-351.	2.0	19
66	The thermodynamic properties of hydrated Î³-Al2O3 nanoparticles. Journal of Chemical Physics, 2013, 139, 244705.	3.0	16
67	Synthesis and characterization of pure and stabilized mesoporous anatase titanias. Microporous and Mesoporous Materials, 2014, 184, 7-14.	4.4	16
68	Effects of Ag promotion and preparation method on cobalt Fischer-Tropsch catalysts supported on silica-modified alumina. Journal of Catalysis, 2018, 362, 118-128.	6.2	16
69	Transformation of matter in living organisms during growth and evolution. Biophysical Chemistry, 2021, 271, 106550.	2.8	16
70	Critical phenomena at the antiferromagnetic transition in MnO. Physical Review B, 1999, 60, 7335-7340.	3.2	15
71	The effects of doping alumina with silica in alumina-supported NiO catalysts for oxidative dehydrogenation of ethane. Microporous and Mesoporous Materials, 2020, 293, 109799.	4.4	15
72	Thermochemistry of Hf-Zirconolite, CaHf Ti2O7. Materials Research Society Symposia Proceedings, 1999, 556, 11.	0.1	14

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73	Heat capacity and thermodynamic functions of boehmite (AlOOH) and silica-doped boehmite. Journal of Chemical Thermodynamics, 2018, 118, 338-345.	2.0	14
74	Preparation of an Unsupported Iron Fischerâ€“Tropsch Catalyst by a Simple, Novel, Solvent-Deficient Precipitation (SDP) Method. Energy & Fuels, 2015, 29, 1972-1977.	5.1	13
75	Thermodynamics of hydrolysis of cellulose to glucose from 0 to 100â€Â°C: Cellulosic biofuel applications and climate change implications. Journal of Chemical Thermodynamics, 2019, 128, 244-250.	2.0	13
76	Low-temperature heat capacity measurements on insulating powders sealed under pressure. Journal of Chemical Thermodynamics, 2019, 136, 170-179.	2.0	12
77	Heat capacity and thermodynamic functions of silica-doped Î³-Al2O3. Journal of Chemical Thermodynamics, 2018, 118, 165-174.	2.0	11
78	Heat capacity and thermodynamic functions of crystalline forms of the metal-organic framework zinc 2-methylimidazolate, Zn(MeIm)2. Journal of Chemical Thermodynamics, 2019, 136, 160-169.	2.0	11
79	Magneto-structural correlation and low temperature heat capacity of a Mn (III) quadridentate Schiff-base coordination compound. Journal of Chemical Thermodynamics, 2014, 74, 247-254.	2.0	10
80	Thermodynamic Properties of Î±-Fe₂O₃ and Fe₃O₄ Nanoparticles. Journal of Physical Chemistry C, 2015, 119, 9609-9616.	3.1	10
81	Optimizing the synthesis and properties of Al-modified anatase catalyst supports by statistical experimental design. Journal of Porous Materials, 2014, 21, 827-837.	2.6	9
82	Iron Fischer-Tropsch Catalysts Prepared by Solvent-Deficient Precipitation (SDP): Effects of Washing, Promoter Addition Step, and Drying Temperature. Catalysts, 2015, 5, 1352-1374.	3.5	9
83	Quantifying oxygen vacancies in neodymium and samarium doped ceria from heat capacity measurements. Acta Materialia, 2020, 188, 740-744.	7.9	9
84	Low temperature heat capacity and thermodynamic functions of anion bearing sodalites Na8Al6Si6O24X2 (X = SO4, ReO4, Cl, I). Journal of Chemical Thermodynamics, 2017, 114, 14-24.	2.0	8
85	Heat capacities and thermodynamic functions of the ZIF organic linkers imidazole, 2-methylimidazole, and 2-ethylimidazole. Journal of Chemical Thermodynamics, 2019, 132, 129-141.	2.0	8
86	Inelastic neutron scattering studies of hydrated CuO, ZnO and CeO2 nanoparticles. Chemical Physics, 2013, 427, 66-70.	1.9	7
87	Synthesis and Thermodynamics of Porous Metal Oxide Nanomaterials. Current Inorganic Chemistry, 2014, 4, 40-53.	0.2	7
88	A statistical approach to control porosity in silica-doped alumina supports. Microporous and Mesoporous Materials, 2015, 210, 116-124.	4.4	7
89	Structure Analysis of Al-Modified TiO₂ Nanocatalyst Supports. Journal of Physical Chemistry C, 2014, 118, 9176-9186.	3.1	6
90	Heat capacity and thermodynamic functions of Î³-Al2O3 synthesized from Al(NO3)3. Journal of Chemical Thermodynamics, 2019, 132, 295-305.	2.0	6

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91	Cryogenic heat capacity measurements and thermodynamic analysis of lithium aluminum layered double hydroxides (LDHs) with intercalated chloride. American Mineralogist, 2022, 107, 709-715.	1.9	6
92	Heat capacity and thermodynamic functions of partially dehydrated cation-exchanged (Na+, Cs+, Cd2+,) Tj ETQq0 0 0 rgBT /Overlock 10	2.0	6
93	Simple, inexpensive mass spectrometric analyzer for thermogravimetry. Rapid Communications in Mass Spectrometry, 2012, 26, 78-82.	1.5	5
94	Experimental heat capacities, excess entropies, and magnetic properties of bulk and nano Fe3O4-Co3O4 and Fe3O4-Mn3O4 spinel solid solutions. Journal of Solid State Chemistry, 2018, 259, 79-90.	2.9	5
95	Heat capacities, entropies, and Gibbs free energies of formation of low-k amorphous Si(O)CH dielectric films and implications for stability during processing. Journal of Chemical Thermodynamics, 2019, 128, 320-335.	2.0	5
96	Heat capacity and thermodynamic functions of transition metal ion (Cu2+, Fe2+, Mn2+) exchanged, partially dehydrated zeolite A (LTA). Journal of Chemical Thermodynamics, 2021, 161, 106556.	2.0	5
97	Heat capacities and thermodynamics of formation of Îµ-Keggin MAl12 Selenates (M = Al(III), Ga(III), or) Tj ETQq1 1 0.784314 rgBT /Ove	2.0	4
98	Determining the Location and Role of Al in Al-Modified TiO₂ Nanoparticles Using Low-Temperature Heat Capacity, Electron Energy-Loss Spectroscopy, and X-ray Diffraction. Journal of Physical Chemistry C, 2015, 119, 17867-17875.	3.1	4
99	Effect of Drying Temperature on Iron Fischer-Tropsch Catalysts Prepared by Solvent Deficient Precipitation. Journal of Nanomaterials, 2017, 2017, 1-11.	2.7	4
100	Thermodynamics of amorphous SiN(O)H dielectric films synthesized by plasmaâ€enhanced chemical vapor deposition. Journal of the American Ceramic Society, 2018, 101, 2017-2027.	3.8	4
101	Extended temperature regions of multiferroicity in nanoscale CuO. Journal of Chemical Thermodynamics, 2020, 142, 106012.	2.0	4
102	Application of advanced thermal analysis for characterization of crystalline and amorphous phases of carvedilol. Journal of Pharmaceutical and Biomedical Analysis, 2022, 217, 114822.	2.8	4
103	Molar heat capacities and thermodynamic functions of CaHf Ti2O7(cr) and CaZr0.26Hf0.74Ti2O7(cr). Journal of Chemical Thermodynamics, 2001, 33, 1441-1455.	2.0	3
104	Dynamics of Water Confined on the Surface of Titania and Cassiterite Nanoparticles. Materials Research Society Symposia Proceedings, 2011, 1352, 47.	0.1	3
105	Energetics of porous amorphous low-k SiOCH dielectric films. Journal of Chemical Thermodynamics, 2019, 139, 105885.	2.0	3
106	New Insights about CuO Nanoparticles from Inelastic Neutron Scattering. Nanomaterials, 2019, 9, 312.	4.1	3
107	Normal state specific heat of a core-shell aluminum-alumina metamaterial composite with enhanced Tc. Physical Review B, 2021, 103, .	3.2	3
108	Heat capacities and thermodynamics of formation of flat-Al13 nitrate â€“ [Al13(OH)24(H2O)24](NO3)15Â·11H2O. Journal of Chemical Thermodynamics, 2015, 90, 224-231.	2.0	2

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109	Practical comparison of traditional and definitive screening designs in chemical process development. International Journal of Experimental Design and Process Optimisation, 2016, 5, 1.	0.2	2
110	Heat capacity and thermodynamic functions of partially dehydrated sodium and zinc zeolite A (LTA). American Mineralogist, 2021, 106, 1341-1348.	1.9	2
111	The low-temperature heat capacity and thermodynamic properties of greigite (Fe3S4). Journal of Chemical Thermodynamics, 2022, 173, 106836.	2.0	2
112	Heat capacities and thermodynamic functions of neodymia and samaria doped ceria. Journal of Chemical Thermodynamics, 2021, 158, 106454.	2.0	1
113	One-pot Synthesis of Pt Catalysts Supported on Al-modified TiO2. Bulletin of Chemical Reaction Engineering and Catalysis, 2014, 9, .	1.1	0
114	Heat Capacity. Encyclopedia of Earth Sciences Series, 2018, , 1-4.	0.1	0
115	Heat Capacity. Encyclopedia of Earth Sciences Series, 2018, , 649-652.	0.1	0