Charles A Geiger

List of Publications by Year
in descending order

70	2,392	236925 25	214800 47
papers	citations	h-index	g-index

71	71	71	2117
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Crystal Chemistry and Stability of â€œLi₇La₃Zr₂O₁₂â€• Garnet: A Fast Lithium-Ion Conductor. Inorganic Chemistry, 2011, 50, 1089-1097.	4.0	600
2	DFT Study of the Role of Al³⁺ in the Fast Ion-Conductor Li_{7â€“3x}Al³⁺_xLa₃Zr₂O₁₂ Garnet. Chemistry of Materials, 2014, 26, 2617-2623.	9.7	108
3	Andradite crystal chemistry, dynamic X-site disorder and structural strain in silicate garnets. European Journal of Mineralogy, 1993, 5, 59-72.	1.3	101
4	A Synthesis and Crystal Chemical Study of the Fast Ion Conductor Li_{7â€“3x}Ga_xLa₃ Zr₂O₁₂ with x = 0.08 to 0.84. Inorganic Chemistry, 2014, 53, 6264-6269.	4.0	93
5	Mn₃Al₂Si₃O₁₂spessartine and Ca₃Al₂Si₃O₁₂grossular garnet; structural dynamic and thermodynamic properties. American Mineralogist, 1997, 82, 740-747.	1.9	88
6	The dynamic properties of zircon studied by single-crystal X-ray diffraction and Raman spectroscopy. European Journal of Mineralogy, 2001, 13, 939-948.	1.3	79
7	Heat capacities and entropies of mixing of pyrope-grossular (Mg3Al2Si3O12-Ca3Al2Si3O12) garnet solid solutions: A low-temperature calorimetric and a thermodynamic investigation. American Mineralogist, 2006, 91, 894-906.	1.9	77
8	Synthesis and Crystal Chemistry of the Fast Li-Ion Conductor Li₇La₃Zr₂O₁₂ Doped with Fe. Inorganic Chemistry, 2013, 52, 8005-8009.	4.0	71
9	Heat capacity measurements of synthetic pyrope-grossular garnets between 320 and 1000 K by differential scanning calorimetry. Geochimica Et Cosmochimica Acta, 1996, 60, 3215-3227.	3.9	65
10	A low-temperature calorimetric study of synthetic (forsterite+fayalite) {(Mg2SiO4+Fe2SiO4)} solid solutions: An analysis of vibrational, magnetic, and electronic contributions to the molar heat capacity and entropy of mixing. Journal of Chemical Thermodynamics, 2007, 39, 906-933.	2.0	57
11	A²⁹Si MAS NMR and IR spectroscopic investigation of synthetic pyrope-grossular garnet solid solutions. American Mineralogist, 1995, 80, 691-704.	1.9	56
12	Molar volumes of mixing of almandine-pyrope and almandine-spessartine garnets and the crystal chemistry and thermodynamic-mixing properties of the aluminosilicate garnets. American Mineralogist, 1997, 82, 571-581.	1.9	50
13	The vibrational spectrum of synthetic hydrogrossular (katoite) Ca3Al2(O4H4)3: A low-temperature IR and Raman spectroscopic study. American Mineralogist, 2005, 90, 1335-1341.	1.9	46
14	Silicate garnet: A micro to macroscopic (re)view. American Mineralogist, 2008, 93, 360-372.	1.9	45
15	Cordierite I: The coordination of Fe2+. American Mineralogist, 2000, 85, 1255-1264.	1.9	43
16	Single-crystal IR- and UV/VIS-spectroscopic measurements on transition-metal-bearing pyrope: the incorporation of hydroxide in garnet. European Journal of Mineralogy, 2000, 12, 259-271.	1.3	36
17	Local Ca-Mg distribution of Mg-rich pyrope-grossular garnets synthesized at different temperatures revealed by²⁹Si MAS NMR spectroscopy. American Mineralogist, 1999, 84, 1422-1432.	1.9	35
18	The crystal structures of grossular and spessartine between 100 and 600 K and the crystal chemistry of grossular-spessartine solid solutions. American Mineralogist, 2002, 87, 542-549.	1.9	35

#	Article	IF	Citations
19	Pathways for nitrogen cycling in Earthâ€™s crust and upper mantle: A review and new results for microporous beryl and cordierite. American Mineralogist, 2016, 101, 7-24.	1.9	35
20	Molecules in the SiO₂-clathrate melanophlogite: A single-crystal Raman study. American Mineralogist, 2004, 88, 1364-1368.	1.9	33
21	IR spectroscopy and OHâ€“ in silicate garnet: The long quest to document the hydrogarnet substitution. American Mineralogist, 2018, 103, 384-393.	1.9	33
22	Crystal field stabilization energies of almandine-pyrope and almandine-spessartine garnets determined by FTIR near infrared measurements. Physics and Chemistry of Minerals, 1994, 21, 516.	0.8	30
23	Cordierite III: the site occupation and concentration of Fe3+. Contributions To Mineralogy and Petrology, 2000, 140, 344-352.	3.1	30
24	Microscopic strain in synthetic pyrope-grossular solid solutions determined by synchrotron X-ray powder diffraction at 5 K: The relationship to enthalpy of mixing behavior. American Mineralogist, 2005, 90, 506-509.	1.9	28
25	A low-temperature heat-capacity study of synthetic anhydrous Mg-cordierite (Mg2Al4Si5O18). American Mineralogist, 2006, 91, 35-38.	1.9	25
26	Almandine: Lattice and non-lattice heat capacity behavior and standard thermodynamic properties. American Mineralogist, 2012, 97, 1771-1782.	1.9	25
27	Cation order-disorder in Fe-bearing pyrope and grossular garnets: A 27Al and 29Si MAS NMR and 57Fe Mossbauer spectroscopy study. American Mineralogist, 2015, 100, 536-547.	1.9	25
28	Volumes of mixing in aluminosilicate garnets: Solid solution and strain behavior. American Mineralogist, 2000, 85, 893-897.	1.9	22
29	Cation order/disorder behavior and crystal chemistry of pyrope-grossular garnets: An 17O 3QMAS and 27Al MAS NMR spectroscopic study. American Mineralogist, 2008, 93, 134-143.	1.9	22
30	A calorimetric investigation of spessartine: Vibrational and magnetic heat capacity. Geochimica Et Cosmochimica Acta, 2009, 73, 3393-3409.	3.9	22
31	Grossular: A crystal-chemical, calorimetric, and thermodynamic study. American Mineralogist, 2012, 97, 1299-1313.	1.9	22
32	Heat capacity of synthetic hydrous Mg-cordierite at low temperatures: Thermodynamic properties and the behavior of the H2O molecule in selected hydrous micro and nanoporous silicates. American Mineralogist, 2007, 92, 388-396.	1.9	19
33	A calorimetric and thermodynamic investigation of uranyl molybdate UO2MoO4. Journal of Chemical Thermodynamics, 2010, 42, 873-878.	2.0	19
34	A tale of two garnets: The role of solid solution in the development toward a modern mineralogy. American Mineralogist, 2016, 101, 1735-1749.	1.9	19
35	29Si and 27Al MAS-NMR spectroscopy of glasses in the system CaSiO3-MgSiO3-Al2O3. Chemical Geology, 1992, 96, 387-397.	3.3	18
36	Thermodynamic behavior and properties of katoite (hydrogrossular): A calorimetric study. American Mineralogist, 2012, 97, 1252-1255.	1.9	17

#	Article	IF	Citations
37	Micro- and nano-size hydrogarnet clusters and proton ordering in calcium silicate garnet: Part I. The quest to understand the nature of â€œwaterâ€•in garnet continues. American Mineralogist, 2020, 105, 455-467.	1.9	15
38	Raspberry-red grossular from Sierra de Cruces Range, Coahuila, Mexico. European Journal of Mineralogy, 1999, 11, 1109-1114.	1.3	15
39	Cordierite IV: structural heterogeneity and energetics of Mg?Fe solid solutions. Contributions To Mineralogy and Petrology, 2003, 145, 752-764.	3.1	14
40	Heat capacity and entropy of melanophlogite: Molecule-containing porosils in nature. American Mineralogist, 2008, 93, 1179-1182.	1.9	13
41	Quasi-ice-like CP behavior of molecular H2O in hemimorphite Zn4Si2O7(OH)2{middle dot}H2O: CP and entropy of confined H2O in microporous silicates. American Mineralogist, 2009, 94, 634-637.	1.9	12
42	A crystal-chemical investigation of clinozoisite synthesized along the join Ca2Al3Si3O12(OH)-Ca2Al2CrSi3O12(OH). American Mineralogist, 2009, 94, 1351-1360.	1.9	12
43	Recent developments and the future of lowâ€T calorimetric investigations in the Earth sciences: Consequences for thermodynamic calculations and databases. Journal of Metamorphic Geology, 2018, 36, 283-295.	3.4	12
44	Heat-capacity behaviour of hemimorphite, Zn4Si2O7(OH)2H2O, and its dehydrated analogue Zn4Si2O7(OH)2: a calorimetric and thermodynamic investigation of their phase transitions. European Journal of Mineralogy, 2009, 21, 971-983.	1.3	11
45	Low-temperature heat capacity of synthetic Fe- and Mg-cordierite: thermodynamic properties and phase relations in the system FeO-Al2O3-SiO2-(H2O). European Journal of Mineralogy, 2008, 20, 47-62.	1.3	10
46	Crystal chemistry of macfallite: Relationships to sursassite and pumpellyite. American Mineralogist, 2008, 93, 1851-1857.	1.9	10
47	Molecular H2O in armenite, BaCa2Al6Si9O30Â·2H2O, and epididymite, Na2Be2Si6O15Â·H2O: Heat capacity, entropy and local-bonding behavior of confined H2O in microporous silicates. Geochimica Et Cosmochimica Acta, 2010, 74, 5202-5215.	3.9	10
48	Thermodynamic mixing properties and behavior of almandineâ€“spessartine solid solutions. Geochimica Et Cosmochimica Acta, 2014, 125, 210-224.	3.9	10
49	Ti(III) in synthetic pyrope: A single-crystal electron paramagnetic resonance study. European Journal of Mineralogy, 2003, 15, 697-699.	1.3	9
50	Micro- and nano-size hydrogarnet clusters in calcium silicate garnet: Part II. Mineralogical, petrological, and geochemical aspects. American Mineralogist, 2020, 105, 468-478.	1.9	9
51	Fe2+-O and Mn2+-O bonding and Fe2+- and Mn2+-vibrational properties in synthetic almandine-spessartine solid solutions: an X-ray absorption fine structure study. European Journal of Mineralogy, 2004, 16, 801-808.	1.3	8
52	Entropies of mixing and subsolidus phase relations of forsterite-fayalite (Mg2SiO4-Fe2SiO4) solid solution. American Mineralogist, 2007, 92, 699-702.	1.9	8
53	Heat capacity and entropy behavior of andradite: a multi-sample and â^'methodological investigation. European Journal of Mineralogy, 2018, 30, 681-694.	1.3	8
54	A calorimetric and thermodynamic investigation of potassium uranyl tungstate K2[(UO2)(W2O8)]. Journal of Chemical Thermodynamics, 2013, 57, 430-435.	2.0	7

#	Article	IF	Citations
55	Static disorders of atoms and experimental determination of Debye temperature in pyrope: Low- and high-temperature single-crystal X-ray diffraction study--Discussion. American Mineralogist, 2013, 98, 780-782.	1.9	7
56	Thermodynamic mixing properties and behavior of grossularâ€“spessartine, (Ca Mn1â˜)3Al2Si3O12, solid solutions. Geochimica Et Cosmochimica Acta, 2014, 141, 294-302.	3.9	7
57	Thermodynamic properties and behaviour of A2[(UO2)(MoO4)2] compounds with A=Li, Na, K, Rb, and Cs. Journal of Chemical Thermodynamics, 2014, 79, 205-214.	2.0	7
58	Thermodynamic behaviour of grossularâ€“andradite, Ca3(AlxFe3+1-x)2Si3O12, garnets: a calorimetric study. European Journal of Mineralogy, 2019, 31, 443-451.	1.3	7
59	Nitrogen and carbon concentrations and isotopic compositions of the silica clathrate melanophlogite. American Mineralogist, 2017, 102, 686-689.	1.9	6
60	A low-temperature IR spectroscopic investigation of the H2O molecules in the zeolite mesolite. European Journal of Mineralogy, 2012, 24, 439-445.	1.3	5
61	An analysis of the magnetic behavior of olivine and garnet substitutional solid solutions. American Mineralogist, 2019, 104, 1246-1255.	1.9	5
62	A calorimetric and thermodynamic investigation of A2[(UO2)2(MoO4)O2] compounds with A=K and Rb and calculated phase relations in the system (K2MoO4+UO3+H2O). Journal of Chemical Thermodynamics, 2015, 90, 270-276.	2.0	4
63	A calorimetric and thermodynamic investigation of cesium uranyl tungstate Cs8[(UO2)4(WO4)4(WO5)2]. Journal of Chemical Thermodynamics, 2019, 137, 48-55.	2.0	4
64	Trivalent transition-metal cations and local structure in pyrope- and grossular-rich solid solutions investigated by 27Al and 29Si MAS NMR spectroscopy. European Journal of Mineralogy, 2016, 28, 179-187.	1.3	3
65	A calorimetric investigation of A 2 [(UO 2) 2 (WO 5)O] compounds with A = K, Rb and Cs and calculated phase relations in the K 2 WO 4 -UO 3 -H 2 O and K 2 MoO 4 -K 2 WO 4 -UO 3 -H 2 O systems. Journal of Chemical Thermodynamics, 2017, 112, 23-30.	2.0	3
66	Micro- and nano-size hydrogrossular-like clusters in pyrope crystals from ultra-high-pressure rocks of the Dora-Maira Massif, western Alps. Contributions To Mineralogy and Petrology, 2020, 175, 1.	3.1	3
67	The Hardwood Gneiss: Evidence for High P-T Archean Metamorphism in the Southern Province of the Lake Superior Region. Journal of Geology, 1990, 98, 273-281.	1.4	2
68	A 57Fe MÃ¶ssbauer spectroscopic study of sogdianite: an example of a symmetric electric field gradient around Fe3+. Physics and Chemistry of Minerals, 2012, 39, 73-78.	0.8	2
69	An experimental calorimetric and a DFT+aE U study of the thermodynamic properties of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si20.svg"><mml:mrow><mml:msub><mml:mtext>Cs</mml:mtext><mml:mn>4</mml:mn></mml:msub><mml:mrow><mml:mfenced open="[" close="]"><mml:mrow><mml:mrow><mml:msub><mml:mrow><mml:mfenced open="(") Tj ETQq1 1 0.784314 rgBT /Overlock ope. Journal of Chemical Thermodynamics, 2019, 139, 105873.	2.0	2
70	Are the thermodynamic properties of natural and synthetic Mg2SiO4-Fe2SiO4 olivines the same?. American Mineralogist, 2021, 106, 317-321.	1.9	2