

List of Publications (Invited in Bold Print)

- 1) Geiger, C.A., Guidotti, C.V. and Petro, W.L., 1982, Some aspects of the petrologic and tectonic history of the Precambrian rocks of Waterloo, Wisconsin. *Geoscience Wisconsin*. 6, 21-40.
- 2) Geiger, C.A., Henry, D.L., Bailey, S.W. and Maj, J.J., 1983, Crystal structure of cronstedite-2H₂. *Clays and Clay Minerals*. 31, No. 2, 97-108.
- 3) Anderson, A.T. Jr., Swihart, G.H., Artioli, G. and Geiger, C.A., 1984, Segregation vesicles, gas-filter-pressing, and differentiation. *Journal of Geology*. 92, 55-72.
- 4) Geiger, C. A., 1986, A note regarding the mineralogy and sedimentology of rocks overlying the Baraboo Quartzite. In the Proterozoic Interval in Wisconsin, Greenberg, J.K., ed., *Geoscience Wisconsin* 10, 28-37.
- 5) Geiger, C.A., Newton, R.C. and Kleppa, O.J., 1987, Enthalpy of mixing of synthetic almandine-grossular and almandine-pyrope garnets from high temperature solution calorimetry. *Geochimica et Cosmochimica Acta*. 51, 1755-1763.
- 6) Geiger, C.A., Kleppa, O.J. Mysen, B., Lattimer, J.M., and Grossman, L., 1988, Enthalpies of formation of CaAl₄O₇ and CaAl₁₂O₁₉ (hibonite) by high temperature alkali borate solution calorimetry. *Geochimica et Cosmochimica Acta*. 52, 1729-1736.
- 7) Geiger, C.A., Langer, K., Winkler, B., and Cemic, L., 1988, The synthesis, characterisation and physical properties of end-member garnets in the system (Fe,Mg,Ca,Mn)₃Al₂(SiO₄)₃. In *High Pressure Geosciences and Material Synthesis, Proceed. XXV. Annual Meeting European High Pressure Research Group*, Ed. Vollstädt, H., Akademie-Verlag Berlin, 193-198.
- 8) Geiger, C.A., and Guidotti, C.V., 1989, Precambrian metamorphism in the Southern Lake Superior region and its bearing on crustal evolution. *Geoscience Wisconsin*, 13, 1-33.
- 9) Geiger, C.A., Winkler, B. and Langer, K., 1989, Infrared spectra of synthetic almandine-grossular and almandine-pyrope garnet solid solutions: Evidence for equivalent site behaviour. *Mineralogical Magazine*. 53, 231-237.
- 10) Cemic, L., Geiger, C.A., Hoyer, W., Koch-Müller, M. and Langer, K., 1990, Piston-cylinder techniques: Pressure and temperature calibration of a pyrophyllite-based assembly by means of DTA measurements, a salt-based assembly, and a cold-sealing encapsulation method. *Neues Jahrbuch für Mineralogie Mh. H.* 2, 49-64.
- 11) Peterson, J.W. and Geiger, C.A., 1990, The Harwood Gneiss: evidence for high P-T, Archean metamorphism in the southern province of the Lake Superior region. *Journal of Geology*. 98, 273-281.
- 12) Geiger, C.A., Langer, K., Bell, D.R., Rossman, G.R. and Winkler, B., 1991, The hydroxal component in synthetic pyrope. *American Mineralogist*. 76, 49-59.
- 13) Olijnyk, H., Paris, E., Geiger, C.A., Lager, G.A., 1991, Compression study of katoite [Ca₃Al₂(O₄H₄)₃] and grossular garnet. *Journal of Geophysical Research*. 96, 14,313-14,318.
- 14) Geiger, C.A., Merwin, L., and Sebald, A., 1992, Structural investigations of pyrope garnet using temperature-dependent FTIR and ²⁷Al and ²⁹Si MAS NMR spectroscopy. *American Mineralogist*. 77, 713-717.
- 15) Armbruster, T., Geiger, C.A., and Lager, G.A., 1992, Single crystal X-ray refinement of almandine-pyrope garnets at 298 and 100 K. *American Mineralogist*. 77, 512-523.
- 16) O'Neill, B., Bass, J.D., Rossman, G. R., Geiger, C.A., and Lager, K., 1991, Elastic properties of pyrope. *Physics and Chemistry of Minerals*. 17, 617-621.
- 17) Geiger, C.A., Armbruster, Th., Lager, G.A., Jiang, K., Lottermoser, W., and Amthauer, G., 1992, A combined temperature dependent Mössbauer and single crystal X-ray diffraction study of synthetic almandine: Evidence for the Gol'danskii-Karyagin effect. *Physics and Chemistry of Minerals*. 19, 121-126.
- 18) Gillet, Ph., Fiquet, G., Malezieux, J.M., and Geiger, C.A., 1992, High-pressure and high-temperature Raman spectroscopy of end-member garnets: pyrope, grossular and andradite. *European Journal of Mineralogy*. 4, 651-664.

- 19) Wenger, M., Armbruster, T., and Geiger, C.A., 1991, Cation distribution in columbite from the Kings Mountains pegmatite. *N.C. American Mineralogist*. 76, 1897-1904.
- 20) Libourel, G., Geiger, C.A., Merwin, L., and Sebald, A., 1992, ^{29}Si and ^{27}Al MAS-NMR spectroscopy of glasses in the system $\text{CaSiO}_3\text{-MgSiO}_3\text{-Al}_2\text{O}_3$. *Chemical Geology*. 96, 387-397.
- 21) O'Neill, H. St. C., Rubie, D.C., Canil, D., Geiger, C.A., Ross, C.R. II, Seifert, F., Woodland, A.B., 1993, Ferric iron in the upper mantle and in the transition zone assemblages: Implications for relative oxygen fugacities in the mantle. In *Evolution of the Earth and Planets*. Geophysical Monograph 74, IUGG, v. 14, 73-88.
- 22) Armbruster, T., and Geiger, C.A., 1993, Andradite crystal chemistry, dynamic X-site disorder and strain in silicate garnets. *European Journal of Mineralogy*. 5, 59-71.
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- 24) Geiger, C.A. and Rossman, G.R., 1994, Crystal field stabilization energies of almandine-pyrope and almandine-spessartine garnets determined by FTIR near infrared measurements. *Physics and Chemistry of Minerals*. 21, 516-525.
- 25) Bosenick, A., Geiger, C.A., Schaller, T., and Sebald, A., 1995, An ^{29}Si MAS NMR and IR spectroscopic investigation of synthetic pyrope-grossular garnet solid solutions. *American Mineralogist*. 80, 691-704.
- 26) Bosenick, A., Geiger, C.A. and Cemic, L., 1996, Heat capacity measurements on synthetic pyrope-grossular garnets between 350 and 1000 K as determined by differential scanning calorimetry. *Geochimica et Cosmochimica Acta*. 60, 3215-3227.
- 27) Geiger, C.A. and Feenstra, A., 1997, Molar volumes of mixing of almandine-pyrope and almandine-spessartine garnets and the crystal chemistry of aluminosilicate garnets. *American Mineralogist*. 82, 571-581.
- 28) Quartieri, S., Antonioli, G., Artioli, G., Geiger, C.A. and Lottici, P.P., 1997, A temperature dependent X-ray absorption fine structure study of dynamic X-site disorder in almandine: a comparison to diffraction data. *Physics and Chemistry of Minerals*. 24, 200-205.
- 29) Geiger, C.A. and Armbruster, T., 1997, $\text{Mn}_3\text{Al}_2\text{Si}_3\text{O}_{12}$ spessartine and $\text{Ca}_3\text{Al}_2\text{Si}_3\text{O}_{12}$ grossular garnet: dynamical structural and thermodynamic properties. *American Mineralogist*. 82, 740-747.
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- 31) Kolesov, B.A. and Geiger, C.A., 1997, Raman scattering in silicate garnets: An investigation of their resonance intensities. *Journal of Raman Spectroscopy*. 28, 659-662.
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- 35) Bosenick, A., Geiger, C.A., and Phillips, B., 1999, Local Ca-Mg distribution of Mg-rich pyrope-grossular garnets synthesized at different temperatures revealed by ^{29}Si NMR MAS spectroscopy. *American Mineralogist*, 42, 1422-1433.
- 36) Geiger, C.A., 1999, Thermodynamics of $(\text{Fe}^{2+}, \text{Mn}^{2+}, \text{Mg}, \text{Ca})_3\text{Al}_2\text{Si}_3\text{O}_{12}$ Garnet: An analysis and review. *Mineralogy and Petrology*. 66, 271-299.
- 37) Quartieri, S., Antonioli, G., Geiger, C.A., Artioli, G., and Lottici, P.P., 1999, XAFS characterization of the structural site of Yb in synthetic pyrope and grossular garnets. *Physics and Chemistry of Minerals*. 26, 251-256.
- 38) Rodehorst, U., Geiger, C.A. and Armbruster, T., 2002, The crystal structure of synthetic grossular and spessartine between 100 and 600 K and the crystal chemistry of grossular-spessartine solid solutions. *American Mineralogist*. 87, 542-549.

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- 40) Geiger, C.A. and Armbruster, T., 1999, The crystal structure of a grossular-pyrope garnet solid solution ($(Ca_{0.9}Mg_{0.1})_3Al_2(SiO_4)_3$) at 295 and 100 K. *Zeitschrift für Kristallographie*. 214, 211-215.
- 41) Boffa Ballaran T., Carpenter, M.A., Geiger, C.A., and Koziol, A., 1999, Local structural heterogeneity in garnet solid solutions. *Physics and Chemistry of Minerals*. 26, 554-569.
- 42) Geiger, C.A., 2000, Volumes of mixing in aluminosilicate garnets: Implications for solid solution behavior. *American Mineralogist*. 85, 893-897.
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- 44) Geiger, C.A., Stahl, A., and Rossman, G.R., 2000, Single-crystal IR- and UV/VIS-spectroscopic measurements on transition-metal-bearing pyrope: The incorporation of hydroxal in garnet. *European Journal of Mineralogy*. 12, 259-271.
- 45) Geiger, C.A. and Voigtländer, H., 2000, Heat capacity measurements on synthetic Mg- and Fe-cordierite. *Contributions to Mineralogy and Petrology*. 138, 46-50.
- 46) Kolesov, B.A. and Geiger, C.A., 2000, Low-temperature single-crystal Raman spectrum of pyrope. *Physics and Chemistry of Minerals*. 27, 645-649.
- 47) Kolesov, B.A. and Geiger, C.A., 2000, A single-crystal Raman study of the orientation and vibrational states of molecular water in synthetic beryl. *Physics and Chemistry of Minerals*. 27, 557-564.
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- 49) Kolesov, B.A. and Geiger, C.A., 2000, Cordierite II: The role of CO_2 and H_2O . *American Mineralogist*. 85, 1265-1274.
- 50) Quartieri, S., Chaboy, J., Antonioli, G., and Geiger, C.A., 1999, XAFS characterization of the structural site of Yb in synthetic pyrope and grossular garnets. II: XANES full multiple scattering calculations at the Yb L_{I-} and L_{I-} edges. *Physics and Chemistry of Minerals*. 27, 88-94.
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- 58) Rodehorst U., Carpenter, M.A., Boffa Ballaran, T. and Geiger, C.A., 2004, Local structural heterogeneity, mixing behaviour and saturation effects in the grossular-spessartine solid solution. *Physics and Chemistry of Minerals*. 31, 387-404.
- 59) Kolesov, B.A. and Geiger, C.A., 2002, Raman spectroscopic study of H_2O in bikitaite: "One-dimensional" ice. *American Mineralogist*. 87, 1426-1431.
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 - 62) Geiger, C.A., Grodzicki, M., and Amthauer, G., 2003, The crystal chemistry and Fe^{II} site properties of aluminosilicate garnet solid solutions as revealed by Mössbauer spectroscopy and electronic structure calculations. *Physics and Chemistry of Minerals*. 30, 280-292.
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- 100) Rettenwander, D., Geiger, C.A., and Amthauer, G., 2013, Synthesis and crystal chemistry of the fast Li-ion conductor $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ doped with Fe. *Inorganic Chemistry*. 52, 8005-8009.
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