

# GUY L. HOVIS PUBLICATIONS

## 1971 - 2025

### PEER-REVIEWED ARTICLES

#### *Lafayette College student coauthors shown in bold*

Hovis, G.L., Tribaudino, M. (2025) The thermal expansion of monticellite and olivine. *European Journal of Mineralogy* 37, 181-190.

Hovis, G.L., Tribaudino, M., **Altomare, C.**, Bosi, F. (2023) Thermal expansion of minerals in the tourmaline supergroup. *American Mineralogist* 108, 1053-1063.

Bosi, F., Skogby, H., Hovis, G.L. (2023) Crystal chemistry of povondraite by single-crystal XRD, EMPA, Mössbauer spectroscopy and FTIR. *Mineralogical Magazine* 87, 178-185.

Tribaudino, M., Hovis, G.L., **Almer, C.**, **Leaman, A.** (2022) Thermal expansion of minerals in the amphibole supergroup. *American Mineralogist* 107, 1302-1312.

Hovis, G.L., Tribaudino, M., **Leaman, A.**, **Almer, C.**, **Altomare, C.**, **Morris, M.**, **Maksymiw, N.**, **Morris, D.**, **Jackson, K.**, **Scott, B.**, **Tomaino, G.**, Mantovani, L. (2021) Thermal expansion of minerals in the pyroxene system and examination of various thermal expansion models. *American Mineralogist* 106, 883-899.

Antao, S., Hovis, G.L. (2021) Structural variations across the nepheline (NaAlSiO<sub>4</sub>) - kalsilite (KAlSiO<sub>4</sub>) series. *American Mineralogist* 106, 801-811.

Hovis, G.L. (2017) A refined view of the thermodynamic mixing quantities for alkali feldspars and the quandary of excess configurational entropy. *American Journal of Science* 317, 597-640.

Hovis, G., Abraham, T., **Hudacek, W.**, **Wildermuth, S.**, **Scott, B.**, **Altomare, C.**, **Medford, A.**, **Conlon, M.**, **Morris, M.**, **Leaman, A.**, **Almer, C.**, **Tomaino, G.**, Harlov, D. (2015) Thermal expansion of F-Cl apatite crystalline solutions. *American Mineralogist* 100, 1040-1046.

Hovis, G.L., **Scott, B.T.**, **Altomare, C.M.**, **Leaman, A.R.**, **Morris, M.D.**, **Tomaino, G.P.**, McCubbin, F.M. (2014) Thermal expansion of fluorapatite-hydroxylapatite crystalline solutions. *American Mineralogist* 99, 2171-2175.

Hovis, G.L., McCubbin, F., Nekvasil, H., Ustunisik, G., Woerner, W., Lindsley, D.H. (2014) A novel technique for fluorapatite synthesis and the thermodynamic mixing behavior of F-OH apatite crystalline solutions. *American Mineralogist* 99, 890-897.

Hovis, G.L., **Medford, A.**, **Conlon, M.**, **Tether, A.**, **Romanoski, A.** (2010) Principles of thermal expansion in the feldspar system. *American Mineralogist* 95, 1060-1068.

- Hovis, G.L., Harlov, D. (2010) Solution calorimetric investigation of fluor-chlorapatite crystalline solutions. *American Mineralogist* 95, 946-952.
- Hovis, G.L., **Mott, A. V.**, Roux, J. (2009) Thermodynamic, phase equilibrium, and crystal chemical behavior in the nepheline - kalsilite system. *American Journal of Science* 309, 397-419.
- Hovis, G.L., **Morabito, J.R. Spooner, R., Mott, A. Person, E.L.**, Henderson, C.M.B., Roux, J., Harlov, D. (2008) A simple predictive model for the thermal expansion of AlSi<sub>3</sub> feldspars. *American Mineralogist* 93, 1568-1573.
- Hovis, G.L., Roux, J. (2008) Thermodynamic mixing properties of Rb-K feldspars. *American Mineralogist* 93, 1597-1602.
- Hovis, G.L., **Person, E., Spooner, A.**, Roux, J. (2006) Thermal expansion of highly silicic nepheline - kalsilite crystalline solutions. *Mineralogical Magazine* 70, 383-396.
- Richet, P., Hovis, G.L., Whittington, A. (2006) Water and magmas: Calorimetric effects of outgassing. *Earth and Planetary Science Letters* 241, 972-977.
- Hovis, G.L., Harlov, D., Gottschalk, M. (2004) Solution calorimetric determination of the enthalpies of formation of NH<sub>4</sub>-bearing minerals buddingtonite and tobelite. *American Mineralogist* 89, 85-93.
- Hovis, G.L., Harlov, D., Gottschalk, M. (2004) Erratum: Solution calorimetric determination of the enthalpies of formation of NH<sub>4</sub>-bearing minerals buddingtonite and tobelite. *American Mineralogist* 89, 1838-1839.
- Neuhoff, P. S., Hovis, G.L., Balassone, G., Stebbins, J.F. (2004) Thermodynamic properties of analcime solid solutions. *American Journal of Science* 304, 21-66.
- Richet, P., Hovis, G.L., Poe, B. (2004) Energetics of pressure-induced densification in GeO<sub>2</sub> glass. *Chemical Geology* 213, 41-47.
- Hovis, G.L., Toplis, M.J., Richet, P. (2004) Thermodynamic mixing properties of sodium silicate liquids and implications for liquid-liquid immiscibility. *Chemical Geology* 213, 173-186.
- Richet, P., Hovis, G.L., Whittington, A., Roux, J. (2004) Energetics of water dissolution in trachyte glasses and liquids. *Geochimica et Cosmochimica Acta* 68, 5151-5158.
- Hovis, G.L., Kröll, H., Breit, U., Yund, R.A. (2003) Elastic strain enthalpies of exsolution: HF solution calorimetric experiments on alkali aluminosilicate and aluminogermanate feldspars. *American Mineralogist* 88, 547-555.
- Hovis, G.L., **Crelling, J., Wattles, D., Dreibelbis, B., Dennison, A., Keohane, M., Brennan, S.** (2003) Thermal expansion of nepheline – kalsilite crystalline solutions. *Mineralogical Magazine* 67, 535-546.

- Hovis, G.L., Roux, J., Rodrigues, E. (2002) Thermodynamic and structural behavior of analcime - leucite analogue systems. *American Mineralogist* 87, 523-532.
- Hovis, G.L., **Crelling, J.A.** (2000) The effects of excess silicon on immiscibility in the nepheline-kalsilite system. *American Journal of Science* 300, 238-249.
- Hovis, G.L., Roux, J. (1999) Thermodynamics of excess silicon in nepheline and kalsilite crystalline solutions. *European Journal of Mineralogy* 11, 815-827.
- Hovis, G.L., **Brennan, S., Keohane, M., Crelling, J.** (1999) High-temperature X-ray investigation of sanidine - analbite crystalline solutions: Thermal expansion, phase transitions, and volumes of mixing. *The Canadian Mineralogist* 37, 701-709.
- Hovis, G.L., Roux, J., Richet, P. (1998) A new era in hydrofluoric acid solution calorimetry: Reduction of required sample size below ten milligrams. *American Mineralogist* 83, 931-934.
- Hovis, G.L. (1997) Hydrofluoric acid solution calorimetric investigation of the effect of anorthite component on enthalpies of K-Na mixing in feldspars. *American Mineralogist* 82, 149-157.
- Hovis, G.L., Graeme-Barber, A. (1997) Volumes of K-Na mixing for low albite - microcline crystalline solutions at elevated temperature: A test of regular solution thermodynamic models. *American Mineralogist* 82, 158-164.
- Hovis, G.L. (1997) Phase fun with feldspars: Simple experiments to change the chemical composition, state of order, and crystal system. In *Teaching Mineralogy*, J. B. Brady, D. W. Mogk, and D. Perkins, eds., Mineralogical Society of America, Washington, D.C., 97-106.
- Hovis, G.L. (1997) Determination of chemical composition, state of order, molar volume, and density of a monoclinic alkali feldspar using X-ray diffraction. In *Teaching Mineralogy*, J. B. Brady, D. W. Mogk, and D. Perkins, eds., Mineralogical Society of America, Washington, D.C., 107-118.
- Roux, J., Hovis, G.L. (1996) Thermodynamic mixing models for muscovite - paragonite solutions based on solution calorimetric and phase equilibrium data. *Journal of Petrology* 37, 1241-1254.
- Hovis, G.L., Navrotsky, A. (1995) Enthalpies of mixing for disordered alkali feldspars at high temperature: A test of regular solution thermodynamic models and a comparison of hydrofluoric acid and lead borate solution calorimetric techniques. *American Mineralogist* 80, 280-284.
- Hovis, G.L., Roux J. (1993) Thermodynamic mixing properties of nepheline - kalsilite crystalline solutions. *American Journal of Science* 293, 1108-1127.
- Hovis, G.L., Spearing, D.R., Stebbins, J., Roux, J., **Clare, A.** (1992) X-ray powder diffraction and  $^{23}\text{Na}$ ,  $^{27}\text{Al}$ , and  $^{29}\text{Si}$  MAS-NMR investigation of nepheline - kalsilite crystalline solutions. *American Mineralogist* 77, 19-29.

- Hovis, G.L., Delbove, F., **Roll, M.** (1991) Gibbs energies and entropies of K-Na mixing for alkali feldspars from phase equilibrium data: Implications for feldspar solvi and short-range order. *American Mineralogist* 76, 913-927.
- Hovis, G.L. (1989) Effect of Al-Si distribution on the X-ray powder diffraction maxima of alkali feldspars and an easy method to determine T1 and T2 site occupancies. *The Canadian Mineralogist* 27, 107-118.
- Hovis, G.L. (1988) Enthalpies and volumes related to K-Na mixing and Al-Si order/disorder in alkali feldspars. *Journal of Petrology* 29, 731-763.
- Phillips, B.L., Kirkpatrick, R.J., Hovis, G.L. (1988)  $^{27}\text{Al}$ ,  $^{29}\text{Si}$ , and  $^{23}\text{Na}$  MAS NMR study of an Al,Si ordered alkali feldspar solid solution series. *Physics and Chemistry of Minerals* 16, 262-275.
- Hovis, G.L. (1986) Behavior of alkali feldspars: Crystallographic properties and characterization of composition and Al-Si distribution. *American Mineralogist* 71, 869-890.
- Hovis, G.L. (1984) A hydrofluoric acid solution calorimetric investigation of glasses in the systems  $\text{NaAlSi}_3\text{O}_8$ - $\text{KAlSi}_3\text{O}_8$  and  $\text{NaAlSi}_3\text{O}_8$ - $\text{Si}_4\text{O}_8$ . *Geochimica et Cosmochimica Acta* 48, 523-525.
- Smith, J.V., Blackwell, C.S., Hovis, G.L. (1984) NMR of albite-microcline series. *Nature* 309, 140-142.
- Haselton, H.T. Jr., Hovis, G.L., Hemingway, B.S., Robie, R.A. (1983) Calorimetric investigation of the excess entropy of mixing in analbite - sanidine solutions: Implications for Na,K short-range order and two-feldspar thermometry. *American Mineralogist* 68, 398-413.
- Hovis, G.L. (1982) Resolution of a systematic interlaboratory discrepancy in recent calorimetric data, and the heats of solution of quartz, low albite, adularia, and gibbsite. *American Mineralogist* 67, 950-955.
- Hovis, G.L. (1980) Angular relations of alkali feldspar series and the triclinic-monoclinic displacive transformation. *American Mineralogist* 65, 770-778.
- Thompson, J.B., Jr., Hovis, G.L. (1979) Entropy of mixing in sanidine. *American Mineralogist* 64, 57-65.
- Hovis, G.L. (1979) A solution calorimetric investigation of K-Na mixing in a sanidine - analbite ion-exchange series: Corrections. *American Mineralogist* 64, 925.
- Thompson, J.B. Jr., Hovis, G.L. (1979) Structural-thermodynamic relations of the alkali feldspars. *Transactions of the American Crystallographic Association* 15, 1-26.
- Hovis, G.L., **Peckins, E.** (1978) A new x-ray investigation of maximum microcline crystalline solutions. *Contributions to Mineralogy and Petrology* 66, 345-349.

Thompson, J.B. Jr., Hovis, G.L. (1978) Triclinic feldspars: Angular relations and the representation of feldspar series. *American Mineralogist* 63, 981-990.

Hovis, G.L., Waldbaum, D.R. (1977) A solution calorimetric investigation of K-Na mixing in a sanidine - analbite ion-exchange series. *American Mineralogist* 62, 680-686.

Hovis, G.L. (1977) Unit-cell dimensions and molar volumes for a sanidine - analbite ion-exchange series. *American Mineralogist* 62, 672-679.

Thompson, J.B. Jr., Waldbaum, D.R., Hovis, G.L. (1974) Thermodynamic properties related to ordering in end-member alkali feldspars. In *The Feldspars*, W. S. MacKenzie and J. Zussman, eds., University of Manchester Press, Manchester, England, 218-248.

Hovis, G.L. (1974) A solution calorimetric and X-ray investigation of Al-Si distribution in monoclinic potassium feldspars. In *The Feldspars*, W. S. MacKenzie and J. Zussman, eds., University of Manchester Press, Manchester, England, 114-144.

## **DOCTORAL DISSERTATION**

Hovis, G.L. (1971) *Thermodynamic properties of monoclinic potassium feldspars*. Harvard University, Cambridge, Massachusetts.

## **ABSTRACTS AND CONFERENCE PRESENTATIONS**

### ***Lafayette College student coauthors shown in bold***

Hovis, G.L. (2016) Systematic behavior of K-Na mixing enthalpies with Al-Si order in alkali feldspars and implications for phase equilibria. *2<sup>nd</sup> European Mineralogical Conference*, Rimini, Italy.

Hovis, G.L. (2015) Well-constrained enthalpies of K-Na mixing in Al-Si ordered and disordered alkali feldspar series from new HF solution calorimetric measurements on forty-one samples. *Abstracts of the Geological Society of America Annual Meeting*, Abstract No. 257589.

Hovis, G., Abraham, T. **Hudacek, W., Wildermuth, S., Scott, B., Altomare, C., Medford, A., Conlon, M., Morris, M., Leaman, A., Almer, C., Tomaino, G.**, Harlov, D. (2015) Thermal expansion of fluorapatite-chlorapatite solid solutions. *Geophysical Research Abstracts* 17, EGU2015-1835-3. [2015 European Geosciences Union General Assembly]

**Altomare, C.M.**, Hovis, G.L. (2014) Thermal expansion in the tourmaline mineral system. *Abstracts of the Northeast Section Meeting of the Geological Society of America*, Abstract No. 236142.

Hovis, G.L. (2013) Analbite – sanidine thermodynamic mixing properties: Highly precise HF solution calorimetric data across a twenty-member crystalline solution series. *American Geophysical Union annual meeting*, Abstract No. 1803700.

Hovis, G.L., **Leaman, A.R., Morris, M.D., Morris, D.K.** (2013) Thermal expansion systematics for the pyroxene system. *Abstracts of the Geological Society of America Annual Meeting*, Paper No. 373-6.

Hovis, G.L. (2013) Newly measured enthalpies of K-Na mixing for low albite - microcline crystalline solutions. Goldschmidt Conference 2013 abstract, *Mineralogical Magazine*, V. 77(5), pp. 1327.

Hovis, G.L. (2012) A tribute to James B. Thompson, Jr.: Highly precise enthalpies of K-Na mixing for low albite – microcline crystalline solutions. *Geological Society of America Annual Meeting Abstracts*, Paper No. 205820.

Hovis, G., **Scott, B., Altomare, C., Tomaino, G.** (2012) Thermal expansion investigation of tourmaline-group minerals. *Geophysical Research Abstracts 14*, Abstract EGU2012-9294-2. [2012 European Geosciences Union General Assembly]

Hovis, G.L. (2011) Thermodynamic mixing behavior of F-OH apatite crystalline solutions. *Transactions of the American Geophysical Union Meeting*, abstract V13G-07.

Hovis, G.L. (2011) A novel technique for F/OH apatite series synthesis and early results on thermodynamic mixing properties of fluor-hydroxlyapatite solid solutions. *Goldschmidt Conference Abstracts*, section H, 89.

Hovis, G., Harlov, D., Gottschalk, M., Schettler, G. (2011) Unit-cell data and XRD compositional indicators for fluorapatite-chlorapatite crystalline solutions. *Geophysical Research Abstracts 13*, Abstract EGU2011-12014. [2011 European Geosciences Union General Assembly]

Hovis, G.L. (2010) Connections among experimentally determined phase equilibria, the thermodynamic properties of minerals, and Newtonian behavior. *Geological Society of America Annual Meeting Abstracts*, Paper No. 135-9.

Hovis, G., **Medford, A., Conlon, M., Romanoski, A., Tether, A.** (2010) Principles of feldspar Thermal Expansion. *Acta Mineralogica-Petrographica Abstract Series*, Volume 6, p. 708. [International Mineralogical Association Meeting 2010]

Hovis, G.L., (2010) Enthalpies and entropies of mixing in alkali-bearing aluminosilicate mineral and glass solutions. *Acta Mineralogica-Petrographica Abstract Series*, Volume 6, p. 808. [International Mineralogical Association Meeting 2010]

Hovis, G. (2010) Thermodynamic and phase behavior of alkali-bearing framework silicates. Goldschmidt 2010 Conference Abstracts, 54.

Hovis, G., **Medford, A., Conlon, M., Tether, A., Romanoski, A.** (2010) Principles of thermal expansion in feldspars. *Geophysical Research Abstracts 12*, Abstract EGU2010-13187-5. [2010 European Geosciences Union General Assembly]

Hovis, G.L., **Medford, A., Conlon, M.** (2009) The thermal expansion of feldspars. *Transactions of the American Geophysical Union Meeting*, abstract MR31B-1651.

Hovis, G., Harlov, D., Gottschalk, M., **Hudacek, W., Wildermuth, S.** (2009) Thermal expansion behavior of fluor-chlorapatite crystalline solutions. *Geophysical Research Abstracts 11*, Abstract EGU2009-5150-3. [2009 European Geosciences Union General Assembly]

Whitaker, S., Reaman, D., Kabbes, J. E., Hovis, G.L., Campbell, A.J., Cottrell, E., Panero, W.R. (2008) Could K and Rb be in Earth's core? *Transactions of the American Geophysical Union* 89 (53), abstract D-143A-1768.

Hovis, G.L., **Mott, A.V. '07**, Roux, J. (2008) The substantial effect of mineral structure on phase equilibria and thermodynamic behavior in the nepheline - kalsilite system. *Geological Society Of America Annual Meeting Abstracts With Programs* 40, No. 6, p. 515.

Hovis, G.L., Roux, J. **Mott, A.V. '07** (2008) The significant effect of alkali-site occupancy on phase equilibria and thermodynamic behavior of nepheline - kalsilite crystalline solutions. *Goldschmidt Conference Abstracts 2008*, p. A395.

Hovis, G.L., **Mott, A.V. '07**, Roux, J. (2008) Solvus reversals and related thermodynamic mixing properties of nepheline-kalsilite crystalline solutions having elevated excess silicon. *Geophysical Research Abstracts 10*, Abstract A-01429. [2008 European Geosciences Union General Assembly]

Ruhl, Laura S., Neuhoff, Philip S., Hovis, Guy L. (2007) Thermodynamics of borax - tinalconite equilibrium. *Geological Society of America Annual Meeting Abstracts with Programs* 39, No. 6, 465.

Hovis, G.L., Roux, J. (2007) Investigations of the thermodynamic and thermal expansion behavior of feldspars and feldspathoids. Conference on Frontiers in Mineral Sciences 2007, Cambridge University, UK, Programme and Abstracts, 102. [INVITED keynote address for one session]

Hovis, G.L., Harlov, D., Hahn, A. (2007) thermodynamic mixing properties of fluorapatite - chlorapatite crystalline solutions. Conference on Frontiers in Mineral Sciences 2007, Cambridge University, UK, Programme and Abstracts, 249.

**Morabito, J.,** Hovis, G. (2007) Thermal expansion of nepheline-kalsilite minerals having intermediate vacancy and excess silicon content. *NCUR, 2007 Abstracts, 21st National Conference on Undergraduate Research, April 12-14, 2007, Dominican University of California.*

Hovis, G.L., Harlov, D.E., Hahn, A., Steigert, H. (2007) Enthalpies and volumes of F-Cl mixing in fluorapatite - chlorapatite crystalline solutions. *Geophysical Research Abstracts* 9, abstract 01748. [European Geosciences Union General Assembly, INVITED]

Hovis, G.L., **Morabito, J., Mott, A.** (2006) Thermodynamic Mixing Properties of Rb-K-Na Feldspars and Relevance to Rb-, NH<sub>4</sub>-, K-, Na-, and Li-Feldspar Thermal Expansion. *Transactions of the American Geophysical Union* 87, abstract number MR43B-1073.

Hovis, G., **Wattles, D.**, Roux, J., **Person, E.** (2006) Thermodynamic mixing properties of rubicline - microcline crystalline solutions. *Geophysical Research Abstracts* 8, abstract number 09391. [2006 European Geosciences Union General Assembly]

Hovis, G.L., Neuhoff, P.S. (2006) Thermodynamic properties of natrolite. Zeolite '06 - 7th International Conference on the Occurrence, Properties, and Utilization of Natural Zeolites. Book of Abstracts, R. S. Bowman and S. E. Delap, eds., 134-135.

**Person, Erik L., Spooner, Amy M.**, Hovis, G.L. (2005) Thermal expansion of nepheline – kalsilite minerals. *NCUR, 2005 Abstracts, 19th National Conference on Undergraduate Research, April 21-23, 2005, Lexington, Virginia*, 525.

**Spooner, Amy M., Person, Erik L.**, Hovis, G.L. (2005) The role of alkali site occupant in the thermal expansion of alkali and ammonium feldspars. *NCUR, 2005 Abstracts, 19th National Conference on Undergraduate Research, April 21-23, 2005, Lexington, Virginia*, 523.

Hovis, G.L., **Spooner, A.M., Person, E.L.**, Roux, J. Harlov, D.E., Henderson, C.M.B. (2005) Thermal expansion of rubidium and ammonium feldspars. *Geophysical Research Abstracts, volume 7, abstract number 05139. [2005 European Geosciences Union General Assembly]*

Toplis, M.J., Hovis, G.L., Reynard, B., Richet, P. (2005) Liquid immiscibility in the system  $\text{Na}_2\text{O}-\text{SiO}_2\pm\text{P}_2\text{O}_5$ : Thermodynamic origins and kinetics of unmixing. *Meeting of the Société Française de Métallurgie et de Matériaux, October, 2005*.

Hovis, G.L., Person, E., Spooner, A., **Dreibelbis, B.**, Roux, J. (2004) The thermal expansion of ultra-silicic nepheline – kalsilite crystalline solutions. *Geological Society of America Annual Meeting Abstracts with Programs* 36, 263.

Hovis, G.L., Neuhoff, P., Balassone, G., Stebbins, J. (2003) Effects of composition and disorder on the enthalpy of formation of analcime. *EGS-AGU-EUG Joint Assembly, Scientifique Programme, Geophysical Research Abstracts* 5, Abstract No. 13967.

Neuhoff, P., Hovis, G.L., Stebbins, J. (2003) Si-Al order-disorder transitions in analcime and natrolite. *Euroclay 2003 Conference Abstracts*, 206-207.

Whittington, A., Hovis, G., Bouhifd, A., Richet, P. (2003) Energetics of water exsolution in silicic magmas. *Fifth Hutton Conference on the Origin of Granites and Related Rocks (Toyohashi, Japan, September 1st to 7th 2003) Geological Survey of Japan, Interim Report* 29, 164

Hovis, G.L., Toplis, M., Roux, J., Richet, P. (2003) Hydrofluoric acid solution calorimetric data for sodium silicate glasses: refinement of earlier results. *Programme of Seventh Silicate Melt Workshop, La Petite Pierre, France*, 34.

Hovis, G.L., Jarry, P., Toplis, M., Richet, P. (2003) Enthalpies of mixing in sodium silicate glasses and relevance to Adam-Gibbs theory. *Transactions of the American Geophysical Union* 84, F1581.



Richet, P., Hovis, G., Whittington, A. (2002) Energetics of water dissolution and exsolution in magmas. *Meeting on Explosive Volcanism in Subduction Zones, Saint-Pierre, Martinique, May 12-16, 2002, Conference Proceedings*.

Hovis, G., Kroll, H., Breit, U., Yund, R. (2002) Enthalpies of mixing for synthetic germanium-bearing alkali feldspars and direct HF solution calorimetric measurement of enthalpies of elastic strain associated with exsolution. *Journal of Conference Abstracts 7 (Cambridge Publications), Number 1, 46. [Experimental Mineralogy, Petrology, and Geochemistry Meeting (EMPG IX)]*

Hovis, G.L., **Crelling, J., Wattles, D., Dreibelbis, B., Dennison, A., Keohane, M., Brennan, S.** (2002) Thermal expansion of nepheline – kalsilite crystalline solutions. *Geological Society of America Annual Meeting Abstracts with Programs 34, 351*.

Hovis, G.L., Jarry, P., Toplis, M., Richet, P. (2001) Hydrofluoric acid solution calorimetric data for sodium silicate glasses: Support for configurational entropies from Adam-Gibbs theory. *Journal of Conference Abstracts 6 (Cambridge Publications), Number 1, 662. [2001 Meeting of the European Union of Geosciences (EUG XI)]*

Hovis, G.L., Rodrigues, E., Roux, J. (2000) Thermodynamic behavior of analcime-leucite analogue systems. *Journal of Conference Abstracts (Cambridge Publications), Volume 5, Number 1, 50. [Experimental Mineralogy, Petrology, and Geochemistry Meeting (EMPG) VIII]*

Rodrigues, E., Roux, J., Hovis, G.L., (2000) Ternary analcime-pollucite solid solutions: Phase equilibrium data (1-5 kbar, 600 °C). *Journal of Conference Abstracts (Cambridge Publications), Volume 5, Number 1, 87. [Experimental Mineralogy, Petrology, and Geochemistry Meeting (EMPG VIII)]*

Hovis, G.L., Rodrigues, E., Roux, J. (2000) Analcime - leucite analogue systems: Examples of nonideal thermodynamic behavior without thermal consequences. *Geological Society of America Annual Meeting Abstracts with Programs 32, A53*.

Hovis, G.L., Richet, P., Whittington, A. (2000) HF solution calorimetry of hydrous aluminosilicate glasses. *Transactions of the American Geophysical Union 81, F1327-F1328*.

Whittington, A., Richet, P., Hovis, G.L., (1999) HF dissolution calorimetry of hydrous silicate glasses - preliminary results. Programme and Abstracts, *Programme of Sixth Silicate Melt Workshop, Arc et Senans, France*.

Hovis, G.L., Roux, J. (1998) Effects of excess silicon on the thermodynamics of nepheline and kalsilite solid solutions. *Terra Abstracts, Abstract supplement No. 1 to Volume 10, 27*.

Hovis, G.L., Roux, J., Richet, P. (1998) A new era in hydrofluoric acid solution calorimetry: Reduction of required sample size below ten milligrams. *Terra Abstracts, Abstract supplement No. 1 to Volume 10, 27*.

- Roux, J., Hovis, G.L., Rodrigues, E. M. S. (1998) Mixing properties of analcite-pollucite solid solutions: Volumetric and calorimetric data. *Terra Abstracts, Abstract supplement No. 1 to Volume 10*, 53.
- Hovis, G.L., Roux, J., Richet, P. (1998) Advances in hydrofluoric acid solution calorimetry: Reduction of required sample size below ten milligrams. *Abstracts and Programme, International Mineralogical Association, 17, A24*.
- Hovis, G.L., **Brennan, S., Keohane, M., Crelling, J.** (1998) High-temperature X-ray investigation of sanidine - analbite crystalline solutions: Phase transitions and volumes of mixing. *Transactions of the American Geophysical Union 79, F996*.
- Hovis, G.L., Roux, J. (1997) Hydrofluoric acid solution calorimetric investigation of excess silicon in nepheline - kalsilite solid solutions. *Geological Society of America Annual Meeting Abstracts with Programs 29, A458*.
- Richet, P., Poe, B., Hovis, G.L. (1997) Straining atomic bonds: Energetics of densified GeO<sub>2</sub> glass and pressure-amorphized GeO<sub>2</sub> crystals. *Transactions of the American Geophysical Union, EOS 78, F751*.
- Hovis, G.L., Yund, R.A. (1996) HF solution calorimetric measurement of elastic strain energy associated with exsolution in alkali feldspars. *Terra Abstracts 8 (Supplement 1), 29*.
- Roux, J., Hovis, G.L. (1996) Nepheline solid solution mixing properties: Heat of solution, volume and phase equilibrium data. *Terra Abstracts 8 (Supplement 1), 56*.
- Crelling, J.**, Hovis, G.L. (1996) The significant effect of excess silicon on the nepheline - kalsilite solvus. *Geological Society of America Annual Meeting Abstracts with Programs 28, A102-103*.
- Roux, J., Hovis, G.L. (1995) Mixing and formation thermodynamic properties of the muscovite - paragonite solid solutions. *Transactions of the American Geophysical Union, EOS 76, F677*.
- Hovis, G.L. (1995) Do volumes of mixing for mineral series vary significantly with temperature? *Geological Society of America Annual Meeting Abstracts with Programs 27, A362*.
- Hovis, G.L. (1994) The effect of anorthite component on enthalpies of K-Na mixing in feldspars. *Geological Society of America Annual Meeting Abstracts with Programs 26, A166*.
- Hovis, G.L., Roux, J. (1994) Improvement in hydrofluoric acid solution calorimetric techniques and the resulting reduction of sample size. *Transactions of the American Geophysical Union, EOS 75, 721-722*.
- Hovis, G.L., Navrotsky, A., Graeme-Barber, A., Carpenter, M., Salje, E. (1993) Enthalpies and volumes of K-Na mixing for alkali feldspars at high temperature. *Proceedings of NATO Advanced Study Institute on Feldspars and Their Reactions, Edinburgh, Scotland, Abstracts of Papers, 4*.

- Hovis, G.L., Navrotsky, A. (1993) Enthalpies of K-Na mixing at high temperature for disordered alkali feldspars. *Transactions of the American Geophysical Union, EOS 74, 554.*
- Hovis, G.L. (1992) Development of thermodynamic mixing parameters for a four-component nepheline - kalsilite system. *Terra Abstracts 4 (Supplement 1), 22.*
- Hovis, G.L. (1992) Margules-like thermodynamic mixing parameters for a compositionally complex nepheline - kalsilite system. *Geological Society of America Annual Meeting Abstracts with Programs 24, A130.*
- Hovis, G.L., Goldsmith, J. R., Graeme-Barber, A., Carpenter, M., Salje, E. (1991) High-temperature X-ray investigation of albites equilibrated at high P and T. *Transactions of the American Geophysical Union, EOS 72, 522.*
- Hovis, G.L., Roux, J. (1990) Thermodynamic mixing properties of nepheline - kalsilite crystalline solutions. *Terra Abstracts 2, 16-17.*
- Hovis, G.L. (1990) Mixing properties for selected micas, feldspathoids, and feldspars: What do we know and where do we go? *Geological Society of America Annual Meeting Abstracts with Programs 22, A70-71.*
- Hovis, G.L., Roux, J., Stebbins, J., **Clare, A.** (1989) Nepheline - kalsilite crystalline solutions. *Transactions of the American Geophysical Union, EOS 70, 352.*
- Hovis, G.L., Roux, J. (1989) Enthalpies of K-Na mixing in nepheline - kalsilite crystalline solutions and relation to [ ]Si substitution. *Geological Society of America Annual Meeting Abstracts with Programs 21, A45.*
- Hovis, G.L., Delbove, F., **Roll, M.** (1989) Entropies of mixing in alkali feldspars from phase equilibrium data: Implications for short-range order. *Transactions of the American Geophysical Union, EOS 70, 1401.*
- Spearing, D.R., Stebbins, J., Hovis, G.L., Roux, J. (1989)  $^{23}\text{Na}$ ,  $^{27}\text{Al}$ , and  $^{29}\text{Si}$  MAS-NMR of the nepheline - kalsilite binary. *Transactions of the American Geophysical Union, EOS 70, 1375.*
- Roux, J., Hovis, G.L. (1987) Grain-size effects on enthalpies of solution of muscovite - paragonite micas. *Proceedings of NATO Advanced Study Institute on Physical Properties and Thermodynamic Behaviour of Minerals, Cambridge, England, 31.*
- Phillips, B.L., Kirkpatrick, R.J., Hovis, G.L. (1987) High-resolution  $^{23}\text{Na}$  MASS NMR of Al/Si ordered alkali feldspars. *Proceedings of NATO Advanced Study Institute on Physical Properties and Thermodynamic Behaviour of Minerals, Cambridge, England, 26.*
- Hovis, G.L. (1987) K-Na mixing and Al/Si order in alkali feldspars. *Proceedings of NATO Advanced Study Institute on Physical Properties and Thermodynamic Behaviour of Minerals, Cambridge, England. (poster session)*

- Hovis, G.L. (1986) Thermodynamic properties of alkali feldspars. *Proceedings of the 14th General Meeting of the International Mineralogical Association, Abstracts with Program*, 128.
- Roux, J., Hovis, G.L. (1986) Enthalpies of K-Na mixing in muscovite - paragonite micas. *Geological Society of America Annual Meeting Abstracts with Programs 18*, 734.
- Hovis, G.L. (1985) The relationship of thermodynamic mixing properties to Al-Si distribution in alkali feldspars. *Academy of Sciences of the USSR All-Union Symposium on "Thermodynamics in Geology."* (invited lecture and abstract)
- Hovis, G.L. (1985) The influence of Al-Si distribution on excess enthalpies in alkali feldspars. *Transactions of the American Geophysical Union, EOS 66*, 390.
- Hovis, G.L. (1984) Characterization of Al-Si distributions in alkali feldspars. *Geological Society of America Annual Meeting Abstracts with Programs 16*, 544.
- Hovis, G.L. (1983) On the behavior of unit-cell dimensions and volumes in alkali feldspar ion-exchange series. *Transactions of the American Geophysical Union, EOS 64*, 353.
- Hovis, G.L., Delbove, F., Roll, M. (1983) The relationship of free energies and entropies of K-Na mixing to Al-Si distribution in topochemically monoclinic alkali feldspars. *Program for NATO Advanced Study Institute on Feldspars and Feldspathoids*, 62-63.
- Hovis, G.L. (1983) An overall view of the thermodynamic properties and unit-cell dimensions of alkali feldspars, including data for five new ion-exchange series. *Program for NATO Advanced Study Institute on Feldspars and Feldspathoids*, 60-61.
- Hovis, G.L. (1983) Thermodynamic mixing properties and a calculated solvus for microcline - low albite crystalline solutions. *Geological Society of America Annual Meeting Abstracts with Programs 15*, 599.
- Hovis, G.L., Delbove, F., **Roll, M.** (1982) The relationship of excess entropy to Al/Si distribution in topochemically monoclinic alkali feldspars. *Geological Society of America Annual Meeting Abstracts with Programs 14*, 518.
- Haselton, H.T. Jr., Hovis, G.L., Hemingway, B. S., Robie, R. A. (1981) Calorimetric investigations of  $S_{\text{mix}}$  in analbite - sanidine solutions. *Transactions of the American Geophysical Union, EOS 62*, 411.
- Hovis, G.L. (1980) Thermodynamic properties of a highly ordered topochemically monoclinic alkali feldspar series and of end-member alkali feldspars. *Transactions of the American Geophysical Union, EOS 61*, 1147.
- Hovis, G.L. (1979) Thermodynamic and crystallographic properties of an orthoclase ion-exchange series. *Geological Society of America Annual Meeting Abstracts with Programs 11*, 446.

Thompson, J.B. Jr., Hovis, G.L. (1977) Entropy of mixing in sanidine. *Transactions of the American Geophysical Union, EOS 58, 522.*

Hovis, G.L. (1977) Revaluation of triclinic/monoclinic inversion compositions at room temperature in alkali feldspars. *Geological Society of America Annual Meeting Abstracts with Programs 9, 1027.*

Hovis, G.L., Waldbaum, D.R. (1976) Enthalpy and volume of K-Na mixing for a sanidine - analbite ion-exchange series. *Transactions of the American Geophysical Union, EOS 57, 340-341.*

Hovis, G.L., Waldbaum, D.R., Thompson, J.B. Jr. (1976) Molar enthalpy and volume of K-Na mixing for an alkali feldspar ion-exchange series based on monoclinic adularia. *Geological Society of America Annual Meeting Abstracts with Programs 8, 927-928.*

**Goetz, L.K.,** Hovis, G.L., Ito, J. (1975) Unit cell parameters as functions of composition and Al-Si distribution for C 2/m barium-potassium feldspars. *Transactions of the American Geophysical Union, EOS 56, 462.*

Hovis, G.L. (1975) A new Al-Si ordering parameter for alkali feldspars. *Geological Society of America Annual Meeting Abstracts with Programs 7, 1122.*

Hovis, G.L., Thompson, J.B. Jr. (1974) The pericline geothermometer and the existence of intermediate albite. *Geological Society of America Annual Meeting Abstracts with Programs 6, 986.*

Hovis, G.L. (1973) Cell dimensions and molar volumes for a series of Fe-Mg orthopyroxenes. *Transactions of the American Geophysical Union, EOS 54, 498.*

Hovis, G.L., Thompson, J.B. Jr., Waldbaum, D.R. (1971) Homogeneous equilibria in monoclinic  $\text{KAlSi}_3\text{O}_8$ : An example of non-convergent ordering. *Second International Conference of Calorimetry and Thermodynamics, Orono, Maine, 24.*

Hovis, G.L. (1971) Temperature and pressure dependence of Al-Si ordering in monoclinic potassium feldspars from solution calorimetric and volume data. *Conference on Petrologic Crystal Chemistry, Martha's Vineyard, Massachusetts.*

Hovis, G.L., Waldbaum, D.R., Thompson, J.B. Jr. (1970) Calorimetric studies of Al-Si ordering and Na-K mixing in monoclinic alkali feldspars. *Geological Society of America Annual Meeting Abstracts with Programs 2, 582.*