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Position Research and Teaching Fellow

Teaching Responsibilities Gold mineralisation and hydrogeochemistry

Research Interests Fluid:rock interaction

Professional Affiliations Member of the Geological Society of Australia

Professional Experience Research since 1999

Publications

Evans, K.A. (2007) Silica solubility in salt-bearing solutions at pressure to 1 GPa and temperature to 900°C, *Geofluids* **7** 451-467.

Evans K. A. and Powell R. (2007) DES-code: a metacode to aid calculation of the chemical potential of aqueous solutions at elevated temperatures and pressures. *Computers and Geosciences* **33**, 789-807.

Evans, K.A., Mavrogenes, J., Newville, M., (2007). The effect of CO₂ on the speciation of bromine in low-temperature geological solutions: an XANES study. *Journal of Synchrotron Radiation*. **14**, 219-226.

Evans, K.A., Phillips, G.N., and Powell, R. (2006) Rock buffering of auriferous fluids at Kalgoorlie gold deposit, Western Australia. *Economic Geology* **101**, 805-817

Evans, K.A. and Powell, R. (2006) The thermodynamics of mixing in saline and mixed solvent solutions at elevated temperature and pressure: A framework for geological phase equilibria calculations. *Geochimica et Cosmochimica Acta* **70**, 5488 – 5506

Evans K. A. (2006) Redox decoupling and redox budgets: Conceptual tools for the study of earth systems. *Geology* **34**(6), 489-492.

Evans K. A. and Banwart S. A. (2006) Rate controls on the chemical weathering of natural polymineralic material. I. Dissolution behaviour of polymineralic assemblages determined using batch and unsaturated column experiments. *Applied Geochemistry* **21**(2), 352-376.

Evans K. A., Watkins D. C., and Banwart S. A. (2006) Rate controls on the chemical weathering of natural polymineralic material. II. Rate-controlling mechanisms and mineral sources and sinks for element release from four UK mine sites, and implications for comparison of laboratory and field scale weathering studies. *Applied Geochemistry* **21**(2), 377-403.

Evans, K.A., Bickle, M.J., Ferry, J.M. (2005) Geometry of fluid flow in layered calc-pelites from Maine, U.S.A. *J. Met. Geol.* **83**, 181-197

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Phillips, G. N. and Evans, K. A., (2004), Role of CO₂ in the formation of gold deposits: *Nature*, v. 429, p.860-863.

Evans K. A., Gandy C. J., and Banwart S. A. (2003) Mineralogical, numerical and analytical studies of the coupled oxidation of pyrite and coal. *Mineral. Mag.* **67**, 381-398.

Evans K. A., Bickle M. J., Skelton A. D. L., Hall M., and Chapman H. (2002) Reductive deposition of graphite at lithological margins in East Central Vermont: a Sr, C and O isotope study. *J. Met. Geol.* **20**, 781-798.

Gandy C. J. and Evans K. A. (2002) Laboratory and numerical modelling studies of iron release from a spoil heap in County Durham. In *Minewater Hydrogeology and Geochemistry* (ed. N. S. Robins and P. Younger). Vol. 198. pp. 205-214. Geological Society.

Banwart S. A., Evans K., and Croxford S. (2002) Predicting mineral weathering rates at field scale for mine water risk assessment. In *Mine Water Hydrogeology and Geochemistry* (ed. P. L. Younger and N. S. Robins). Geological Society, London, Special Publications. The Geological Society of London.

Evans K. A. and Banwart S. A. (2001) Surface observations applied to the interpretation of unsaturated column experiments. In the proceedings of *GQ2001: Groundwater Quality: Natural and Enhanced Restoration of Groundwater Pollution*. IAHS Publication no. 275, IAHS, The Netherlands.

Evans K. A. and Bickle M. J. (1999) Determination of time-integrated metamorphic fluid fluxes from the reaction progress of multivariant assemblages. *Contrib. Mineral. Petrol.* **134**, 277-293.