

## PUBLICATIONS LIST

### *Category 1: Fully refereed publications in open literature*

#### *a) Journals and Conferences*

1. Christie, J.M. and Ord, A. Flow stress from microstructures of mylonites: example and current assessment. *Journal Geophys. Res.*, **85**, 6253-6262, 1980.
2. Linker, M.F., Kirby, S.H., Ord, A. and Christie, J.M. Effects of compression direction on the plasticity and rheology of hydrolytically weakened synthetic quartz crystals at atmospheric pressure. *Journal Geophys. Res.*, **89**, 4241-4255, 1984.
3. Ord, A. and Christie, J.M. Flow stresses from microstructures in mylonitic quartzites of the Moine Thrust Zone, Assynt Area, Scotland. *Journal of Structural Geology*, **6**, 639-654, 1984.
4. Ord, A. and Hobbs, B.E. Experimental control of the water-weakening effect in quartz. In: *Mineral and Rock Deformation : Laboratory Studies*, Geophys. Monogr. Ser., Vol. **36**, edited by B.E. Hobbs and H.C. Heard, pp. 51-72, AGU, Washington, D.C., 1986.
5. Hobbs, B.E., Ord, A. and Teyssier, C. Earthquakes in the ductile regime? *Pageoph*, **124**, 309-336, 1986.
6. Hobbs, B.E. and Ord, A. Plastic instabilities: implications for the origin of intermediate and deep focus earthquakes. *Journal Geophys. Res.*, **93**, 10521-10540, 1988.
7. Hobbs, B.E. and Ord, A. Numerical simulation of shear band formation in a frictional-dilatational material. *Ingenieur Archiv*, **59**, 209-220, 1989.
8. Ord, A. and Hobbs, B.E. The strength of the continental crust, detachment zones, and the development of plastic instabilities. *Tectonophysics*, **158**, 269-289, 1989.
9. Koch, P.S., Christie, J.M., Ord, A. and George, R.P. The effect of water on the rheology of experimentally deformed quartzite. *Journal Geophys. Res.*, **94**, 13975-13996, 1989.
10. Hobbs, B.E., Ord, A. and Marone, C.. Dynamic behaviour of rock joints. In: *Rock Joints*, edited by N.R. Barton and O. Stephansson (eds.). Balkema, Rotterdam, 435-445, 1990.
11. Ord, A. Mechanical controls on dilatant shear zones. In: *Deformation Mechanisms, Rheology and Tectonics*, Geol. Soc. Spec. Pub., Vol. **54**, edited by R.J. Knipe and E.H. Rutter, pp. 183-192, The Geological Society, London, 1990.
12. Hobbs, B.E., Mühlhaus, H.B. and Ord, A. Instability, softening and localization of deformation. In: *Deformation Mechanisms, Rheology and Tectonics*, Geol. Soc. Spec. Pub., Vol. **54**, edited by R.J. Knipe and E.H. Rutter, pp. 143-165, The Geological Society, London, 1990.
13. Fitz Gerald, J., Boland, J., McLaren, A.C., Ord, A. and Hobbs, B.E. Microstructures in water-weakened single crystals of quartz. *Journal Geophys. Res.*, **96**, 2139-2155, 1991.
14. Ord, A. Fluid flow through patterned shear zones. In: G. Beer, J.R. Booker and J.P. Carter, editors. *Computer Methods and Advances in Geomechanics. Proc. 7th Intl. Conf. on Computer Methods and Advances in Geomechanics*, Balkema, Rotterdam, pp. 393-398, 1991.
15. Ord, A. and Cheung, L.C. Image analysis techniques for determining the fractal dimensions of rock joint and fragment size distributions. In: G. Beer, J.R. Booker and J.P. Carter, editors. *Computer Methods and Advances in Geomechanics. Proc. 7th Intl. Conf. on Computer Methods and Advances in Geomechanics*, Balkema, Rotterdam. pp. 87-91, 1991.
16. Ord, A., Vardoulakis, I. and Kajewski, R. Shear band formation in Gosford sandstone. *Int. Jnl. Rock Mech. Min. Sci. and Geomechanics Abst.*, **28**, 397-409, 1991.

17. Ord, A. Deformation of rock: a pressure-sensitive, dilatant material. *Pure and Applied Geophysics*, **137**, 337- 366, 1991.
18. Ord, A., Cheung, L.C., Hobbs, B.E. and Le Blanc, D. Automatic mapping of rock exposures for geotechnical purposes. In: E.Y. Baafi, editor. 2<sup>nd</sup> Aust. Conf. on Computer Applications in the Mineral Industry. Univ. of Wollongong, pp. 205-210, 1991.
19. Ralser, S., Hobbs, B.E. and Ord, A. Experimental deformation of a quartz mylonite: the effect of orientation. *Journal of Structural Geology*, **13**, 837-850, 1991.
20. Yeo, K., Cheung, C.C., Ord, A. and Brown, W.A. Determination of rock fragment sizes using a transputer array. In: T.S. Durrani, W.A. Sandham, J.J. Soraghan and S.M. Forbes, editors. *Applications of Transputers 3. The Third International Conference on Applications of Transputers*. IOS Press, Amsterdam. 142-147, 1991.
21. Marone, C., Hobbs, B.E. and Ord, A. Coulomb constitutive laws for friction: contrasts in frictional behaviour for distributed and localized shear. *Pageoph*, **139**, 195-214, 1992.
22. Mühlhaus, H.-B., Hobbs, B.E. and Ord, A. Evolution of fractal geometries in deforming material. In: J.R. Tillerson and W.R. Wawersik, editors. *Rock Mechanics. Proc. 33rd U.S. Symposium on Rock Mechanics*, Balkema, Rotterdam, pp. 681-690, 1992.
23. Sulem, J., Ord, A. and Vardoulakis, I.G. Shear-band formation in sandstone. In: G. Beer, J.R. Booker and J.P. Carter, editors. *Computer Methods and Advances in Geomechanics. Proc. 7th Intl. Conf. on Computer Methods and Advances in Geomechanics*, Balkema, Rotterdam, pp. 1731-1735, 1992.
24. Wang, J.N., Boland, J.N., Ord, A. and Hobbs, B.E. Microstructural and defect development in heat-treated Heavitree quartzite. In: *Defects and Processes in the Solid State: Geoscience Applications. The McLaren volume*, edited by J.N. Boland and J.D. Fitzgerald, pp.359-381, Elsevier, Amsterdam, 1993.
25. Ord, A. The fractal geometry of patterned structures in numerical models for rock deformation. In: J.H. Kruhl, editor. *Fractals and Dynamic Systems in Geoscience*, Springer-Verlag, Berlin. pp. 131-155, 1994.
26. Mühlhaus, H.B., Hobbs, B.E. and Ord, A. The role of axial constraints on the evolution of folds in single layers. In: H.J. Siriwardane and M.M. Zaman, editors. *Computer Methods and Advances in Geomechanics*, Balkema, Rotterdam. pp. 223 - 231, 1994.
27. Wang, J., Hobbs, B.E., Ord, A., Shimamoto, T. and Toriumi, M. Newtonian dislocation creep in quartzites: implications for the rheology of the lower crust. *Science*, **265**, 1204-1206, 1994.
28. Zhang, Y., Hobbs, B.E. and Ord, A. A numerical simulation of fabric development in polycrystalline aggregates with one slip system. *Journal of Structural Geology*, **16**, 1297-1313, 1994.
29. Hunt, G., Mühlhaus, H.B., Hobbs, B.E. and Ord, A. Localized folding of visco-elastic layers. *Geologische Rundschau*, **85**, 58-64, 1996.
30. Mühlhaus, H.B., Chau, K. T. and Ord, A. Bifurcation of crack pattern in arrays of two-dimensional cracks. *International Journal of Fracture*, **77**, 1-14, 1996.
31. Zhang, Y., Hobbs, B.E., Ord, A. and Mühlhaus, H.B. Computer simulation of single-layer buckling. *Journal of Structural Geology*, **18**, 643-655, 1996.
32. Zhang, Y., Scheibner, E., Ord, A. and Hobbs, B.E. Numerical modelling of crustal stresses in the eastern Australian passive margin. *Australian Journal of Earth Sciences*, **43**, 161-175, 1996.
33. Jiang, Z., Oliver, N.H.S., Barr, T.D., Power, W.L. and Ord, A. Numerical modelling of fault-controlled fluid flow in the genesis of tin deposits of the Malage ore field, Gejiu mining district, China. *Economic Geology*, **92**, 228-247, 1997.

34. Ord, A. and Henley, S. Fluid pumping: some exploratory numerical models. *Physics and Chemistry of the Earth*, **22**, 49-56, 1997.
35. Ord, A. and Oliver, N.H.S. Mechanical controls on fluid flow during regional metamorphism: some numerical models. *Journal of Metamorphic Geology*, **15**, 345-359, 1997.
36. Chau, K.T., Mühlhaus, H.B. and Ord, A. Bifurcation in growth patterns for arrays of Griffith and edge cracks. *Key Engineering Materials*, 145-149, 71-76, 1998.
37. Zhang, Y., Scheibner, E., Hobbs, B.E., Ord, A., Drummond, B.J. and Cox, S.J.D. Lithospheric structure in SE Australia: a model based on gravity, geoid and mechanical modelling. In: *Structure and Dynamics of the Australian Lithosphere*. Eds. J. Braun, J. Dooley, B. Goleby, R. van der Hilst and C. Klootwijk. AGU Monograph, Geodynamics Series, **26**, 89-108, 1998.
38. Oliver, N.H.S., Pearson, P.J., Holcombe, R.J. and Ord, A. Mary Kathleen metamorphic-hydrothermal uranium-rare-earth element deposit: ore genesis and numerical model of coupled deformation and fluid flow. *Australian Journal of Earth Sciences*, **46**, 467-484, 1999.
39. Zhao, C., Hobbs, B.E., Mühlhaus, H.B. and Ord, A. A consistent point-searching algorithm for solution interpolation in unstructured meshes consisting of 4-node bilinear quadrilateral elements. *International Journal for Numerical Methods in Engineering*, **45**, 1509-1526, 1999.
40. Zhao, C., Hobbs, B.E., Mühlhaus, H.B. and Ord, A. Finite element analysis of flow patterns near geological lenses in hydrodynamic and hydrothermal systems. *Geophysics Journal International*, **138**, 146-158, 1999
41. Zhao, C., Hobbs, B.E., Baxter, K., Mühlhaus, H.B. and Ord, A. A numerical study of pore-fluid, thermal and mass flow in fluid-saturated porous rock basins. *International Journal for Computer-Aided Engineering and Software: Engineering Computations*, **16**, 202-214, 1999.
42. Hobbs, B. E., Mühlhaus, H. B., Ord, A. & Moresi, L. The influence of chemical migration upon fold evolution in multi-layered materials. In: *Non-Equilibrium Processes and Dissipative Structures in Geoscience*. Eds. Krug, H.-J. & Kruhl, J. H. *Self-organization: Yearbook for Complexity in the Natural, Social, and Human Sciences*, Vol 11, Duncker & Humblot, Berlin, 229-252, 2000.
43. Hobbs, B. E., Zhang, Y., Ord, A. & Zhao, C. Application of coupled deformation, fluid flow, thermal and chemical modelling to predictive mineral exploration. *Journal of Geochemical Exploration*, **69**, 505-509, 2000.
44. Hobbs, B.E., Mühlhaus, H.B., Ord, A., Zhang, Y. and Moresi, L. Fold geometry and constitutive behaviour. In: *Stress, Strain and Structure, A volume in honour of W D Means* Eds M. Jessell & J. Urai, *Journal of the Virtual Explorer*, **2**, 2000.
45. Hobbs, B. E., Ord, A., Archibald, N. J., Walshe, J. L., Zhang, Y., Brown, M. & Zhao, C. Geodynamic modelling as an exploration tool. In: *After 2000: The Future of Mining*, Sydney, AusIMM publication series, 34-49, 2000.
46. Zhang, Y., Mancktelow, N.S., Hobbs, B.E., Ord, A. and Mühlhaus, H.B. Numerical modelling of single-layer folding; clarification of an issue regarding the possible effect of computer codes and the influence of initial irregularities. *Journal of Structural Geology*, **22**, 1511-1522, 2000.
47. Zhao, C., Hobbs, B.E., Mühlhaus, H.B. and Ord, A. Finite element modelling of dissipative structures for non-equilibrium chemical reactions in fluid-saturated porous media. *Computer Methods in Applied Mechanics and Engineering*, **184**, 1-14, 2000.
48. Zhao, C., Hobbs, B.E., Mühlhaus, H.B., Ord, A. and Lin, G. Numerical modelling of double diffusion driven reactive flow transport in deformable fluid-saturated porous media with particular consideration of temperature-dependent chemical reaction rates. *International Journal for Computer-Aided Engineering and Software: Engineering Computations*, **17**, 367-385, 2000.
49. Hunt, G.W., Wadee, M.A. and Ord, A. Length scale interactions in the folding of sandwich structures. *Tectonophysics*, **335**, 111-120, 2001.

50. Mühlhaus H-B, Hobbs, B., Freij-Ayoub, R., Walshe, J.L. and Ord, A. Multiple scales in rock alterations and ore deposit genesis. 5<sup>th</sup> International Workshop on Bifurcation and Localisation Theory in Geomechanics, Proc. IWBL99 Conference. pp. 355-363, 2001.
51. Oliver, N., Ord, A., Valenta, R. and Upton, P. Deformation, fluid flow, and ore genesis in heterogeneous rocks, with examples and numerical models from the Mount Isa District, Australia. *Reviews in Economic Geology*, **14**, 51-74, 2001.
52. Vernon, R., Williams, P., Ord, A. and Boland, J. Preface to Special issue in Honour of B.E. Hobbs. *Tectonophysics*, 335, vii-xii.
53. Zhao, C., Lin, G., Hobbs, B.E., Mühlhaus, H.B., Ord, A., Wang, Yuejun. Finite element modelling of heat transfer through permeable cracks in hydrothermal systems with upward throughflow. *International Journal for Computer-Aided Engineering and Software*, **18** 996-1011, 2001
54. Zhao, C., Hobbs, B.E., Mühlhaus, H.B. and Ord, A. Finite element modelling of rock alteration and metamorphic process in hydrothermal systems, *Communications in Numerical Methods in Engineering*, **17**, 833–843, 2001.
55. Zhao, C., Hobbs, B.E., Walshe, J.L., Mühlhaus, H.B. and Ord, A. Finite element modelling of fluid-rock interaction problems in pore-fluid saturated hydrothermal/sedimentary basins. *Computer Methods in Applied Mechanics and Engineering*, **190**, 2277-2293, 2001.
56. Zhao, C., Lin, G., Hobbs, B.E., Mühlhaus, H.B., Ord, A. and Wang, Y. Finite element modelling of heat transfer through permeable cracks in hydrothermal systems with upward throughflow, *Engineering Computations*, **18**, 996-1011, 2001.
57. Zhao, C., Hobbs, B. E., Muhlhaus, H. B. & Ord, A. Numerical modelling of three-dimensional steady-state convection and mineralization in fluid-saturated rocks. In: *Advances in Computational Heat Transfer, II* (edited by de Vahl Davis, G. & Leonardi, E.) 2, Palm Cove, Queensland, Australai, 993-1000, 2001.
58. Zhao, C. B., Hobbs, B. E., Muhlhaus, H. B. & Ord, A. Finite element modelling of rock alteration and metamorphic process in hydrothermal systems. *Communications in Numerical Methods in Engineering*, **17**, 833-843, 2001.
59. Zhao, C. B., Hobbs, B. E., Muhlhaus, H. B., Ord, A. & Lin, G. Finite element modelling of three-dimensional convection problems in fluid-saturated porous media heated from below. *Communications in Numerical Methods in Engineering*, **17**, 101-114, 2001.
60. Ord, A., Hobbs, B.E., Zhang, Y., Broadbent, G.C., Brown, M., Willetts, G., Sorjonen-Ward, P., Walshe, J.L., and Zhao, Y. Geodynamic modelling of the Century deposit, Mt Isa Province, Queensland. *Australian Journal of Earth Sciences*, **49**, 1011-1039, 2002.
61. Zhao, C. B., Hobbs, B. E., Muhlhaus, H. B., Ord, A. & Lin, G. Analysis of steady-state heat transfer through mid-crustal vertical cracks with upward throughflow in hydrothermal systems. *International Journal for Numerical and Analytical Methods in Geomechanics*, **26**, 1477-1491, 2002.
62. Zhao, C. B., Hobbs, B. E., Muhlhaus, H. B., Ord, A. & Lin, G. Computer simulations of coupled problems in geological and geochemical systems. *Computer Methods in Applied Mechanics and Engineering*, **191**, 3137-3152, 2002.
63. Zhao, C., Lin, G., Hobbs, B. E., Wang, Y., Muhlhaus, H. B., and Ord, A.. J. Finite element modelling of reactive fluids mixing and mineralization in pore-fluid saturated hydrothermal/sedimentary basins. *Engineering Computations*, **19**, 364-387, 2002.
64. Lin, G., Zhao, C. B., Hobbs, B. E., Ord, A. & Muhlhaus, H. B. Theoretical and numerical analyses of convective instability in porous media with temperature-dependent viscosity. *Communications in Numerical Methods in Engineering*, **19**, 787-799, 2003.

65. McLellan, J.G., Oliver, N.H.S, Ord, A., Zhang, Y. and Schaub, P.M. A numerical modelling approach to fluid flow in extensional environments: implications for genesis of large microplaty hermatite ores. *Journal of Geochemical Exploration*, 78-79, 675-679, 2003.
66. Ord, A. and Sorjonen-Ward, P. Simulating the Outokumpu Mineralising System. *The AusIMM Bulletin*, 5, 46-47, 2003.
67. Schaub, P.M., Ord, A. and German, G.H. Scenario testing of fluid-flow and deformation during mineralization: from simple to complex geometries. In: Brummer, R., Andrieux, P., Detournay, C. and Hart, R. (Editors). *FLAC and Numerical Modelling in Geomechanics. Proc. 3rd International FLAC Symposium 21-24 October 2003, Sudbury, Ontario, Canada*. Balkema, Lisse. pp. 63-70, 2003.
68. Zhang, Y., Hobbs, B. E., Ord, A., Barnicoat, A., Zhao, C., Walshe, J. L. & Lin, G. The influence of faulting on host-rock permeability, fluid flow and ore genesis of gold deposits: a theoretical 2D numerical model. *Journal of Geochemical Exploration*, 78-79, 279-284, 2003.
69. Zhao, C. B., Hobbs, B. E., Muhlhaus, H. B., Ord, A. & Lin, G. 2003. Convective instability of 3-D fluid-saturated geological fault zones heated from below. *Geophysical Journal International*, 155, 213-220, 2003.
70. Zhao, C. B., Hobbs, B. E., Ord, A., Lin, G. & Muhlhaus, H. B. An equivalent algorithm for simulating thermal effects of magma intrusion problems in porous rocks. *Computer Methods in Applied Mechanics and Engineering*, 192, 3397-3408, 2003.
71. Zhao, C. B., Hobbs, B. E., Ord, A., Muhlhaus, H. B. & Lin, G. Effect of material anisotropy on the onset of convective flow in three-dimensional fluid-saturated faults. *Mathematical Geology*, 35, 141-154, 2003.
72. Zhao, C. B., Lin, G., Hobbs, B. E., Ord, A., Wang, Y. J. & Muhlhaus, H. B. Effects of hot intrusions on pore-fluid flow and heat transfer in fluid-saturated rocks. *Computer Methods in Applied Mechanics and Engineering*, 192, 2007-2030, 2003.
73. Hobbs, B. E. & Ord, A. The development of fractal geometries in deformed rocks. In: *Fractals in Geotechnical Engineering, Exploratory Workshop, Innsbruck, 2003* (edited by Kolymbas, D.). *Advances in Geotechnical Engineering and Tunneling 9*. Balkema, Rotterdam. pp. 67-77, 2004.
74. Hobbs, B.E., Ord, A. and Regenauer-Lieb, K. Fluid reservoirs in the crust and mechanical coupling between the upper and lower crust. *Earth, Planets, Space*, 56, 1151-1161, 2004.
75. Hobbs, B. E., Walshe, J., Ord, A., Zhang, Y. & Barnicoat, A. The Witwatersrand mineralising system. *Geochimica et Cosmochimica Acta*, 68, A771-A771, 2004.
76. Hobbs, B.E., Ord, A., Regenauer-Lieb, K., Boschetti, F., Zhang, Y., and Durrlemann, S. *Ab initio* emergent phenomena in PFC. In: *Proceedings of the 2nd International PFC Symposium, 28-29 October 2004, Kyoto, Japan. Numerical Modeling in Micromechanics via Particle Methods*. Eds. Shimizu, Y., Hart, R.D. and Cundall, P.A. Balkema, Leiden. pp. 235-239, 2004.
77. Ord, A., Boschetti, F. & Hobbs, B. E. 3D imaging of jointed rock masses. In: *Geotechnical Engineering Exploratory Workshop, Innsbruck, 2003* (edited by Kolymbas, D.). *Advances in Geotechnical Engineering and Tunneling 9*. Balkema, Rotterdam. pp. 79-92, 2004.
78. Ord, A., Hobbs, B.E. and Regenauer-Lieb, K. A smeared seismicity constitutive model. *Earth, Planets, Space*, 56, 1121-1133, 2004.
79. Regenauer-Lieb, K., Hobbs, B.E. and Ord, A. On the thermodynamics of listric faults. *Earth, Planets, Space*, 56, 1111-1120, 2004.
80. Zhao, C. B., Hobbs, B. E., Ord, A., Peng, S. L., Muhlhaus, H. B. & Liu, L. M. Theoretical investigation of convective instability in inclined and fluid-saturated three-dimensional fault zones. *Tectonophysics*, 387, 47-64, 2004.

81. Sheldon, H.A. and Ord, A. Evolution of porosity, permeability and fluid pressure in dilatant faults post-failure: Implications for fluid flow and mineralization. *Geofluids*, 5, 272-288, 2005.
82. Zhao, C.B., Hobbs, B.E., Ord, A., Lin, G. and Muhlhaus, H.B. Theoretical and numerical analysis of large-scale heat transfer problems with temperature-dependent pore-fluid densities. *Engineering Computations*, 22, 232-252, 2005.
83. Zhao C., Hobbs, B. E., Ord, A., Peng, S. and Muhlhaus, H. B., Double diffusion-driven convective instability of three-dimensional fluid-saturated geological fault zones heated from below, *Mathematical Geology*, 37, 373-391, 2005.
84. Zhao C., Hobbs, B. E., Ord, A., Peng, S., Muhlhaus, H. B. and Liu, L., Numerical modeling of chemical effects of magma solidification problems in porous rocks, *International Journal for Numerical Methods in Engineering*, 64, 709-728, 2005.
85. Durrlemann, S., Boschetti, F., Ord, A. and Regenauer-Lieb, K. Automatic detection of particle aggregation in particle code simulations of rock deformation. *Geochemistry Geophysics Geosystems* (1525-2027), 7, Q05006, doi:10.1029/2005GC001063, 2006.
86. Oliver, N.H.S., McLellan, J.G., Hobbs, B.E., Cleverley, J.S., Ord, A. and Feltrin, L. Numerical models of extensional deformation, heat transfer, and fluid flow across basement-cover interfaces during basin-related mineralization. *Economic Geology*, 101, 1-31, 2006.
87. Regenauer-Lieb, K., Hobbs, B., Yuen, D. A., Ord, A., Zhang, Y., Muhlhaus, H.B. and Morra, G. From point defects to plate tectonic faults. *Philosophical Magazine*, 86, 3373-3392, 2006.
88. Sheldon HA, Barnicoat A and Ord A. Numerical modelling of faulting and fluid flow in porous rocks: An approach based on critical state soil mechanics. *Journal of Structural Geology*, 28, 1468-1482, 2006.
89. Zhang, Y., Sorjonen-Ward, P., Ord, A. Modelling fluid transport associated with mineralization and deformation in the Outokumpu Cu-Zn-Co deposit, Finland. *Journal of Geochemical Exploration*, 89, 465-469, 2006.
90. Zhang, Y., Sorjonen-Ward, P., Ord, A. and Southgate, P. Fluid flow during deformation associated with structural closure of the Isa Superbasin at 1575 Ma in the central and northern Lawn Hill Platform, Northern Australia. *Economic Geology*, 101, 1293-1312, 2006.
91. Zhao C., Hobbs, B. E., Ord, A., Kuhn, M., Muhlhaus, H. B. and Peng, S., Numerical simulation of double-diffusion driven convective flow and rock alteration in three-dimensional fluid-saturated geological fault zones, *Computer Methods in Applied Mechanics and Engineering*, 195, 2816-2840, 2006.
92. Zhao C., Hobbs, B. E., Hornby, P., Ord, A. and Peng, S., Numerical modelling of fluids mixing, heat transfer and non-equilibrium redox chemical reactions in fluid-saturated porous rocks, *International Journal for Numerical Methods in Engineering*, 66, 1061-1078, 2006.
93. Zhao C., Hobbs, B. E., Ord, A. and Hornby, P., Chemical reaction patterns due to fluids mixing and focusing around faults in fluid-saturated porous rocks, *Journal of Geochemical Exploration*, 89, 470-473, 2006.
94. Zhao C., Hobbs, B. E., Ord, A., Peng, S., Liu, L. and Muhlhaus, H. B., Analytical solutions for pore-fluid flow around and within inclined elliptic inclusions in pore-fluid-saturated porous rocks: Solutions derived in an elliptical coordinate system. *Mathematical Geology*, 38, 987-1010, 2006.
95. Zhao, C., Hobbs, B.E., Ord, A., Hornby, P., Peng, S. and Liu, L., Theoretical and numerical analyses of pore-fluid flow patterns around and within large cracks and faults. *Geophysical Journal International*. 166, 970-988, 2006.
96. Hobbs, B., Regenauer-Lieb, K. and Ord, A. Thermodynamics of folding in the middle to lower crust. *Geology*, 35, 175-178, 2007. doi: 10.1130/G23188A, 2007.

97. Ord, A., Hobbs, B.E. and Regenauer-Lieb, K. Shear band emergence in granular materials - A numerical study. *International Journal for Numerical and Analytical Methods in Geomechanics* 31, 373-393, 2007. DOI: 10.1002/nag.590
98. Regenauer-Lieb, K., Hobbs, B.E., Ord, A., and Yuen, D.A., Non-equilibrium thermodynamics, thermomechanics, geodynamics. *Computational Science - ICCS 2007. 7th International Conference, Beijing China, May 27-30, 2007, Lecture Notes in Computer Science* , Vol. 4487/2007. pp. 62-69. DOI 10.1007/978-3-540-72584-8\_9.
99. Zhang, Y., Lin, G., Wang, Y.J., Roberts, P.A. and Ord, A. Numerical modelling of deformation and fluid flow in the Shui-Kou-Shan Mineralisation District, Hunan Province, China. *Ore Geology Reviews*, 31, 261-278, 2007.
100. Zhao, C.B., Hobbs, B.E., Ord, A., Peng, S. and Liu, L. An upscale theory of particle simulation for two-dimensional quasi-static problems. *International Journal for Numerical Methods in Engineering*, 72, 397-421, 2007. DOI: 10.1002/nme.2018
101. Zhao C., Hobbs, B. E., Ord, A., Hornby, P., Peng, S. and Liu, L. Mineral precipitation associated with vertical fault zones: the interaction of solute advection, diffusion and chemical kinetics. *Geofluids*, 7, 3-18, 2007.
102. Zhao, C., Hobbs, B.E., Ord, A., Hornby, P., Peng, S. and Liu, L., Particle simulation of spontaneous crack generation problems in large scale quasi-static systems. *Int. J. Numerical Methods in Eng.*, 69, 2302-2329, 2007.
103. Zhao, C., Hobbs, B.E., Ord, A., Roberts, P.A., Hornby, P. and Peng, S., Phenomenological modelling of crack generation in brittle crustal rocks using the particle simulation method. *Journal of Structural Geology*, 29, 1034-1048, 2007.
104. Hobbs, B.E., Regenauer-Lieb, K. and Ord, A., 2008. Folding with thermal-mechanical feedback. *Journal of Structural Geology*, 30, 1572-1592. doi:10.1016/j.jsg.2008.09.002
105. Murphy, F.C., Ord, A., Hobbs, B.E., Willetts, G. And Barnicoat, A.C. Targeting stratiform Zn-Pb-Ag massive sulfide deposits in Ireland through numerical modeling of coupled deformation, thermal transport, and fluid flow. *Economic Geology*, 103, 1437-1458, 2008.
106. Potma, W., Roberts, P.A., Schaub, P.M., Sheldon, H.A., Zhang, Y., Hobbs, B.E. and Ord, A., Predictive targeting in Australian orogenic-gold systems at the deposit to district scales using numerical modelling. *Australian Journal of Earth Sciences*, 55, 101-122, 2008.
107. Zhang, Y., Schaub, P.M., Zhao, C., Ord, A., Hobbs, B.E. and Barnicoat, A.C. Fault-related dilation, permeability enhancement, fluid flow and mineral precipitation patterns: some numerical models. Geological Society, London, Special Publications, 299, 239-255, 2008. DOI: 10.1144/SP299.15
108. Zhao, C.B., Hobbs, B.E. and Ord, A. Investigating dynamic mechanisms of geological phenomena using methodology of computational geosciences: An example of equal-distant mineralization in a fault. *Science in China Series D-Earth Sciences*, 51, 947-954, 2008.
109. Zhao, C.B., Hobbs, B.E., Ord, A. and Peng, S. Particle simulation of spontaneous crack generation associated with the laccolithic type of magma intrusion processes. *International Journal for Numerical Methods in Engineering*. 75, 1172-1193, 2008. DOI: 10.1002/nme.2287
110. Zhao, C.B., Hobbs, B.E., Ord, A., Hornby, P. and Peng, S. Morphological evolution of three-dimensional chemical dissolution front in fluid-saturated porous media: a numerical simulation approach. *Geofluids*, 8 113-127, 2008.
111. Zhao, C.B., Hobbs, B.E., Ord, A., Hornby, P. and Peng, S. Effect of reactive surface areas associated with different particle shapes on chemical-dissolution front instability in fluid-saturated porous rocks. *Transport in Porous Media*, 73, 75-94, 2008.

112. Zhao, C.B., Hobbs, B.E., Ord, A., Peng, S. and Liu, L. Inversely-mapped analytical solutions for flow patterns around and within inclined elliptic inclusions in fluid-saturated rocks. *Mathematical Geosciences*, 40, 170-197, 2008.
113. Zhao, C.B., Peng, S.L., Liu, L.M., Hobbs, B.E. and Ord, A. Potential mechanisms of pore-fluid movement from continental lithospheric mantle into upper continental crust. *Journal of Central South University of Technology*, 15, 81-88, 2008.
114. Zhao, C.B., Hobbs, B.E., Hornby, P., Ord, A., Peng, S. and Liu, L. Theoretical and numerical analyses of chemical-dissolution front instability in fluid-saturated porous rocks. *International Journal for Numerical and Analytical Methods in Geomechanics*, 32, 1107-1130, 2008. DOI: 10.1002/nag.661
115. Zhao, C.B., Hobbs, B.E., Ord, A., Hornby, P., Muhlhaus, H. and Peng, S. Theoretical and numerical analyses of pore-fluid flow focused heat transfer around geological faults and large cracks. *Computers and Geotechnics*, 35, 357-371, 2008.
116. Barnicoat, A.C., Sheldon, H. and Ord, A. Faulting and fluid flow in porous rocks and sediments: Implications for mineralisation and other processes. *Mineralium Deposita*, 44, 705-718, 2009.
117. Hobbs, B. E., Regenauer-Lieb, K., and Ord A. Folding with thermal-mechanical feedback; A reply. *Journal of Structural Geology*, 31, 540-543, 2009.
118. Lester, D.R., Metcalfe, G., Trefry, M., Ord, A., Hobbs, B., and Rudman, M. Lagrangian topology of a periodically reoriented potential flow: symmetry, optimization and mixing. *Physical Review E*, 80, 036208, 2009. (doi/10.1103/PhysRevE.80.036208.)
119. Regenauer-Lieb, K., Hobbs, B., Ord, A., Gaede, O. and Vernon, R. Deformation with coupled chemical diffusion. *Physics of the Earth and Planetary Interiors*, 172, 43-54, 2009. (doi: 10.1016/j.pepi.2008.08.013)
120. Regenauer-Lieb, K., Poulet, T., Siret, D., Fousseis, F., Liu, J., Gessner, K., Gaede, O., Morra, G., Hobbs, B., Ord, A., Muhlhaus, H., Yuen, D., Weinberg, R. and Rosenbaum. First steps towards modeling a multi-scale earth system. In: *Advances in Geocomputing*. Ed. H. Xing. Lecture Notes in Earth Sciences. pp. 1-26. Springer-Verlag, Berlin, 2009. (doi 10.1007/978-3-540-85879-9)
121. Zhao, C.B., Hobbs, B.E. and Ord, A. Critical contact stiffness concept and simulation of crack generation in particle models of large length-scales. *Computers and Geotechnics*, 36, 81-92, 2009.
122. Zhao, C.B., Peng, S.L., Liu, L.M., Hobbs, B.E. and Ord, A. Effective loading algorithm associated with explicit dynamic relaxation method for simulating static problems. *J. Cent. South Univ. Technol.*, 16: 0125-0130, 2009. (DOI: 10.1007/s11771-009-0021-7)
123. Hobbs, B.E. and Ord, A. The mechanics of granitoid systems and maximum entropy production rate. *Phil. Trans. R. Soc. A*, 368, 53-93, 2010.
124. Hobbs, B. E., Regenauer-Lieb, K., and Ord A. Folding with thermal-mechanical feedback: another reply. *Journal of Structural Geology*, 32, 131-134, 2010.
125. Hobbs, B.E., Ord, A., Spalla, I., Gosso, G. and Zucali, M. The interaction of deformation and metamorphic reactions. In: Spalla, M. I., Marotta, A. M. & Gosso, G. (eds) *Advances in Interpretation of Geological Processes*. Geological Society, London, Special Publications, 332, 189–222, 2010.
126. Lester, D. R., Metcalfe, G., Trefry, M., Ord, A., Hobbs, B. and Rudman, M. Scalar dispersion in a periodically reoriented potential flow: Acceleration via Lagrangian chaos. *Physical Review E*, 81, 046319, 2010. (doi: 10.1103/PhysRevE.81.046319)
127. Metcalfe, G., Lester, D., Ord, A., Kulkarni, P., Trefry, M., Hobbs, B., Regenauer-Lieb, K. and Morris, J. A partially open porous media flow with chaotic advection: towards a model of coupled fields. *Phil. Trans. R. Soc. A*, 368, 217-230, 2010. doi:10.1098/rsta.2009.0198
128. Metcalfe, G., Lester, D., Ord, A., Kulkarni, P., Rudman, M., Trefry, M., Hobbs, B., Regenauer-Lieb, K. and Morris, J. An experimental and theoretical study of the mixing characteristics of a periodically reoriented irrotational flow. *Phil. Trans. R. Soc. A*, Invited, cover article, 368, 1918, 2147-2162, 2010. doi: 10.1098/rsta.2010.0037
129. Ord, A. and Hobbs, B. Fracture pattern formation in frictional, cohesive, granular material. *Phil. Trans. R. Soc. A*, 368, 95-118, 2010.

130. Trefry, M.B., McLaughlin, D., Metcalfe, G., Lester, D., Ord, A., Regenauer-Lieb, K. and Hobbs, B. On oscillating flows in randomly heterogeneous porous media. *Phil. Trans. R. Soc. A*, 368, 197-216, 2010.
131. Zhao, C.B., Hobbs, B.E., Ord, A. and Peng, S.L. Effects of mineral dissolution ratios on chemical-dissolution front instability in fluid-saturated porous media. *Transport in Porous Media*, 82, 317-335, 2010.
132. Zhao, C., Hobbs, B. E. and Ord, A. Theoretical and numerical investigation into roles of geofluid flow in ore forming systems: Integrated mass conservation and generic model approach. *Journal of Geochemical Exploration*, 106, 251-260, 2010. doi:10.1016/j.gexplo.2009.11.005
133. Zhao, C.B., Hobbs, B.E. and Ord, A. 2010. Theoretical analyses of the effects of solute dispersion on chemical-dissolution front instability in fluid-saturated porous media. *Transport in Porous Media*, 84, 629-653, 2010.
134. Zhao, C., Hobbs, B. E. and Ord, A. Theoretical analyses of nonaqueous-phase-liquid dissolution induced instability in two-dimensional fluid-saturated porous media, *International Journal for Numerical and Analytical Methods in Geomechanics*, 34, 1767-1796, 2010. doi: 10.1002/nag.880
135. Hobbs, B. E. and Ord, A. 2011. Microstructures in deforming-reactive systems. In: Prior, D.J., Rutter, E.H. and Tatham, D.J. (eds). *Deformation Mechanisms, Rheology and Tectonics: Microstructures, Mechanics and Anisotropy*. Geological Society, London, Special Publications, 360, 273-299. doi:10.1144/SP360.16
136. Hobbs, B.E., Ord, A. and Regenauer-Lieb, K. The thermodynamics of deformed metamorphic rocks: A review. *Journal of Structural Geology*, 33, 758-818, 2011. doi:10.1016/j.jsg.2011.01.013
137. Ord, A., and Hobbs, B. E. Microfabrics as energy minimisers: rotation recrystallisation as an example. *Journal of Structural Geology*, 33, 220-243, 2011. doi:10.1016/j.jsg.2010.11.009
138. Trefry, M.G., McLaughlin, D., Lester, D.R., Metcalfe, G., Johnston, C.D. and Ord, A. Stochastic relationships for periodic responses in randomly heterogeneous aquifers. *Water Resources Research*, 47, W08527, 2011. doi:10.1029/2011WR010444
139. Zhao, C.B., Hobbs, B.E., Regenauer-Lieb, K. and Ord, A. Computational simulation for the morphological evolution on nonaqueous phase liquid dissolution fronts in two-dimensional fluid-saturated porous media. *Computational Geosciences*, 15, 167-183, 2011.
140. Hobbs, B.E. and Ord, A. Localised and chaotic folding: the role of axial plane structures. *Philosophical Transactions of the Royal Society, A*, 370, 1966-2009, 2012. doi: 10.1098/rsta.2011.0426
141. Lester, D.R., Ord, A. and Hobbs, B.E. The mechanics of hydrothermal systems: II. Fluid mixing and chemical reactions. *Ore Geology Reviews*, 49, 45-71, 2012.
142. Ord, A., Hobbs, B.E. and Lester, D.R. The mechanics of hydrothermal systems: I. Ore systems as chemical reactors. *Ore Geology Reviews*, 49, 1-44, 2012.
143. Trefry, M.G., Lester, D.R., Metcalfe, G., Ord, A. and Regenauer-Lieb, K. Toward enhanced subsurface intervention methods using chaotic advection. *Journal of Contaminant Hydrology* 127, 15-29, 2012.
144. Zhao, C., Hobbs, B.E. and Ord, A. Effects of medium and pore-fluid compressibility on chemical-dissolution front instability in fluid-saturated porous media. *International Journal for Numerical and Analytical Methods in Geomechanics*, 36, 1077-1100, 2012.
145. Zhao, C., Hobbs, B.E. and Ord, A. Effects of domain shapes on the morphological evolution of nonaqueous-phase-liquid dissolution fronts in fluid-saturated porous media. *Journal of Contaminant Hydrology*, 138, 123-140, 2012.
146. Lester, D. R., Trefry, M. G., Metcalfe, G., Ord, A. and Regenauer-Lieb, K. Comment on "Plume spreading in groundwater by stretching and folding" by D. C. Mays and R. M. Neupauer. *Water Resources Research*, 49, 1189-1191, 2013.

147. Ord, A. and Hobbs, B.E. Localised folding in general deformations. *Tectonophysics*, 587, 30-45, 2013. <http://dx.doi.org/10.1016/j.tecto.2012.09.020>
148. Zhao, C., Hobbs, B.E. and Ord, A. Theoretical analyses of acidization dissolution front instability in fluid-saturated carbonate rocks. *International Journal for Numerical and Analytical Methods in Geomechanics*, 37, 2084-2105, 2013.
149. Zhao, C., Hobbs, B.E. and Ord, A. Effects of medium permeability anisotropy on chemical-dissolution front instability in fluid-saturated porous media. *Transport in Porous Media*, 99, 119-143, 2013.
150. Zhao, C., Hobbs, B.E. and Ord, A. Analytical solutions of nonaqueous-phase-liquid dissolution problems associated with radial flow in fluid-saturated porous media. *Journal of Hydrology*, 494, 96-106, 2013.
151. Zhao, C., Peng, S., Liu, L., Hobbs, B.E. and Ord, A. Computational modeling of free-surface slurry flow problems using particle simulation method. *Journal of Central South University*, 20, 1653-1660, 2013.
152. Regenauer-Lieb, K., Karrech, A., Chua, H.T., Poulet, T., Veveakis, M., Wellmann, F., Liu, J., Schrank, C., Gaede, O., Trefry, M.G., Ord, A., Hobbs, B., Metcalfe, G. and Lester, D. Entropic bounds for multi-scale and multi-physics coupling in earth sciences. In: Dewar, R.C., Lineweaver, C.H., Niven, R.K. & Regenauer-Lieb, K. (eds) *Beyond the Second Law: Entropy production and non-equilibrium systems*. Springer-Verlag, Berlin, 323-335, 2014.
153. Hobbs, B. and Ord, A. Dramatic effects of stress on metamorphic reactions. *Comment. Geology*, 43, E372-E372. 2015. doi:10.1130/G37070C.1
154. Li, X., Yuan, F., Zhang, M., Jia, C., Jowitt, S.M., Ord, A., Zheng, T., Hu, X. and Li, Y. Three-dimensional mineral prospectivity modeling for targeting of concealed mineralization within the Zhonggu iron orefield, Ningwu Basin, China. *Ore Geology Reviews*, 71, 633-654, 2015. doi:10.1016/j.oregeorev.2015.06.001
155. Zhao, C., Hobbs, B.E. and Ord, A. Theoretical analyses of chemical dissolution-front instability in fluid-saturated porous media under non-isothermal conditions. *International Journal for Numerical and Analytical Methods in Geomechanics*, 39, 799-820, 2015. doi:10.1002/nag.2332
156. Zhao, C., Hobbs, B.E. and Ord, A. Computational simulation of chemical dissolution-front instability in fluid-saturated porous media under non-isothermal conditions. *International Journal for Numerical Methods in Engineering*, 102, 135-156, 2015. doi:10.1002/nme.4848
157. Hobbs, B.E. and Ord, A. Does non-hydrostatic stress influence the equilibrium of metamorphic reactions? *Earth Science Reviews* 103, 190-233, 2016.
158. Ord, A., Munro, M. and Hobbs, B. Hydrothermal mineralising systems as chemical reactors: Wavelet analysis, multifractals and correlations. *Ore Geology Reviews*, 79, 2016. <http://dx.doi.org/10.1016/j.oregeorev.2016.03.026>
159. Zhao, C., Hobbs, B.E. and Ord, A. Chemical dissolution-front instability associated with water-rock reactions in groundwater hydrology: Analyses of porosity-permeability relationship effects. *Journal of Hydrology*, 540, 1078-1087, 2016.
160. Hobbs, B.E. and Ord, A. Pressure and equilibrium in deforming rocks. *Journal of Metamorphic Geology*, 35, 967-982, 2017.
161. Zhao, C., Hobbs, B.E. and Ord, A. A new alternative approach for investigating acidization dissolution front propagation in fluid-saturated rocks. *Science China Technol. Sci.*, 60, 1197-1210, 2017.
162. Hobbs, B.E. and Ord, A. Coupling of fluid flow to permeability development in mid- to upper crustal environments: a tale of three pressures. Geological Society, London, Special Publications, 453, 2018. <https://doi.org/10.1144.SP453.9>

163. Hobbs, B.E. and Ord, A. Episodic modes of operation in hydrothermal gold systems: Part II. A model for gold deposition. Geological Society, London, Special Publications,453, 147-164, 2018. <https://doi.org/10.1144.SP453.15>
164. Hobbs, B.E. and Ord, A. Nonlinear dynamical analysis of GNSS data: Quantification, precursors and synchronisation. Progress in Earth and Planetary Science 5, 36, 2018. <https://doi.org/10.1186/s40645-018-0193-6>
165. Munro, M.A., Ord, A. and Hobbs, B.E. Spatial organization of gold and alteration mineralogy in hydrothermal systems: Wavelet analysis of drill core from Sunrise Dam Gold Mine, Western Australia. Geological Society, London, Special Publications,453, 2018. <https://doi.org/10.1144.SP453.10>
166. Oberst, S., Niven, R.K., Lester, D.R., Ord, A., Hobbs, B. and Hoffmann, N. Detection of unstable periodic orbits in mineralising geological systems. Chaos 28, 085711 (2018); doi: 10.1063/1.5024134
167. Ord, A. and Hobbs, B.E. Episodic modes of operation in hydrothermal gold systems: Part I. Deformation, mineral reactions and chaos. Geological Society, London, Special Publications,453, 2018. <https://doi.org/10.1144.SP453.14>
168. Ord, A., Hobbs, B.E., Dering, G. and Gessner, K. Nonlinear analysis of natural folds using wavelet transforms and recurrence plots. Philosophical Transactions of the Royal Society A A376:20170257, 2018. <http://dx.doi.org/10.1098/rsta.2017.0257>
169. Zhao, C., Hobbs, B.E. and Ord, A. Validation of using large-density asymptotics for studying reaction-infiltration instability in fluid-saturated rocks. Journal of Hydrology, 559, 454-460, 2018.
170. Zhao, C., Hobbs, B.E. and Ord, A. Modeling of mountain topography effects on hydrothermal Pb-Zn mineralization patterns: Generic model approach. Journal of Geochemical Exploration, 190, 400-410, 2018.
171. Zhao, C., Hobbs, B.E. and Ord, A. Analytical solution for dissolution-timescale reactive transport in fluid-saturated porous rocks. Int. J. Geomech. 2018, 18(6): 04018037 doi: 10.1061/(ASCE)GM.1943-5622.0001152.
172. Zhao, C., Hobbs, B. and Ord, A. Effects of different numerical algorithms on simulation of chemical dissolution-front instability in fluid-saturated porous rocks. J. Cent. South University 2018, 25, 1966-1975. <https://doi.org/10.1007/s11771-018-3887-4>
173. Hobbs, B.E., Ord, A., Ulrich, S. and Schulmann, K. Rheology of mixed deformation mechanisms and mineral phase assemblages. Journal of Structural Geology 129, 2019, 103891. <https://doi.org/10.1016/j.jsg.2019.103891>
174. Hu, X., Li, X., Yuan, F., Ord, A., Jowitt, S., Li, Y., Dai, W., Ye, R., Zhou, T. Numerical simulation based targeting of the Magushan Skarn Cu-Mo deposit, Middle-Lower Yangtze Metallogenic Belt, China. Minerals 2019, 9, 588. doi:10.3390/min9100588
175. Li, X., Yuan, F., Zhang, M., Jowitt, S.M., Ord, A., Zhou, T. and Dai, W. 3D computational simulation-based mineral prospectivity modeling for exploration for concealed Fe-Cu skarn-type mineralization within the Yueshan orefield, Anqing district, Anhui Province, China. Ore Geology Reviews 105, 1-17, 2019. <https://doi.org/10.1016/j.oregeorev.2018.12.003>
176. Ord, A. and Hobbs, B.E. Quantitative measures of deformed rocks: the links to dynamics. Journal of Structural Geology 125,74-81, 2019. <https://doi.org/10.1016/j.jsg.2018.05.027>
177. Hu, X., Li, X., Yuan, F., Ord, A., Jowitt, S., Li, Y., Dai, W., Zhou, T. Numerical modeling of ore-forming processes within the Chating Cu-Au porphyry-type deposit, China: Implications for the longevity of hydrothermal systems and potential uses in mineral exploration. Ore Geology Reviews 116, 2020, 103230. <https://doi.org/10.1016/j.oregeorev.2019.103230>

178. Hu, X., Li, X., Yuan, F., Jowitt, S.M., Ord, A., Ye, R., Li, Y., Dai, W., Li, X. 3D numerical simulation-based targeting of skarn type mineralization within the Xuancheng-Magushan orefield, Middle-Lower Yangtze metallogenic belt, China. *Lithosphere* 2020, <https://doi.org/10.2113/2020/8351536>
179. Macheyeke, A.S., Li, X., Yuan, F., Zhang, M., Zhou, T., Jowitt, X.M., Ord, A. Application of nonconventional mineral exploration techniques: Case studies. In: Macheyeke, A.S., Li, X., Kafumu, D.P., Yuan, F. Eds. *Applied Geochemistry: Advances in Mineral Exploration Techniques 2020*, Chapter 4, 151-190.
180. Ulrich, S., Hobbs, B. E., Ord, A. and Schulmann, K. The relative strengths of deforming mineral phase assemblages. *Journal of Structural Geology* 137, 2020. <https://doi.org/10.1016/j.jsg.2020.104056>
181. Zhao C., Hobbs, B. E. and Ord, A. Mixed solutions of mathematical and numerical methods for reactive mass transport problems of two different porosity regions in fluid-saturated porous media, *Journal of Hydrology*, 580, 124145, 2020.
182. Zhao, C., Hobbs, B.E., Ord, A. Effects of mathematical transforms on theoretical analysis and computational simulation of chemical dissolution-front instability within fluid-saturated porous media. *Journal of Hydrology*, 2021, [doi.org/10.1016/j.jhydrol.2021.126531](https://doi.org/10.1016/j.jhydrol.2021.126531)
183. Behnoudfar, P., Hobbs, B.E., Ord, A., Espath, L., Calo, V.M. Localized folding of thick layers. *Journal of Structural Geology* 161, 104669, 2022. [doi.org/10.1016/j.jsg.2022.104669](https://doi.org/10.1016/j.jsg.2022.104669)
184. Hobbs, B.E., Ord, A. Failure modes in fluid saturated rocks: deformation processes and mode-switching. *Geological Magazine*, 2022. [doi.org/10.1017/S0016756822000516](https://doi.org/10.1017/S0016756822000516)
185. Hobbs, B.E., Ord, A., Blenkinsop, T. The spatial distributions of mineralisation. *Journal of Structural Geology* 2022, doi: <https://doi.org/10.1016/j.jsg.2022.104529>.
186. Liu, L., Cao, W., Liu, H., Ord, A., Qin, Y., Zhou, F., Bi, C. Applying benefits and avoiding pitfalls of 3D computational modelling-based machine learning prediction for exploration targeting: Lessons from two mines in the Tongling-Anqing district, eastern China. *Ore Geology Reviews* 142, 104712, 2022, [doi.org/10.1016/j.oregeorev.2022.104712](https://doi.org/10.1016/j.oregeorev.2022.104712)
187. Ord, A., Hobbs, B. Orogenic gold deposits as nonlinear systems: Nonlinear analysis of data. *Ore Geology Reviews* 2022, [doi.org/10.1016/j.oregeorev.2022.104699](https://doi.org/10.1016/j.oregeorev.2022.104699)
188. Ord, A., Blenkinsop, T., Hobbs, B. Fragment size distributions in brittle deformed rocks. *Journal of Structural Geology* 154, 104496, 2022. [doi.org/10.1016/j.jsg.2021.104496](https://doi.org/10.1016/j.jsg.2021.104496)
189. Velichko, A., Wagner, M.P., Taravat, A., Hobbs, B., Ord, A. NNetEn<sub>2D</sub>: Two-dimensional neural network entropy in remote sensing imagery and geophysical mapping. *Remote Sensing* 14, 2166, 2022. [doi.org/10.3390/rs14092166](https://doi.org/10.3390/rs14092166)
190. Zhao, C., Hobbs, B.E., Ord, A. Investigating porosity structure effects on hydrothermal mineralization patterns within permeable horizontal layers of fluid-saturated rocks: Semi-analytical approach through generic models. *Ore Geology Reviews* 150, 105116, 2022. [doi.org/10.1016/j.oregeorev.2022.105116](https://doi.org/10.1016/j.oregeorev.2022.105116)
191. Hobbs, B.E., Ord, A. 2023. An alternative to the fault-valve model. *Australian Journal of Earth Sciences* (2023), [doi.org/10.1080/08120099.2023.2218452](https://doi.org/10.1080/08120099.2023.2218452)
192. Ord, A., Hobbs, B. E. The growth and size of orogenic gold systems: Probability and dynamical behaviour. *Australian Journal of Earth Sciences* (2023), [doi.org/10.1080/08120099.2023.2207628](https://doi.org/10.1080/08120099.2023.2207628)
193. Schulmann, K., Maierová, P., Jeřábek, P., Lexa, O., Ulrich, S., Hobbs, B., Ord, A., Deformation mechanisms and rheology inversion of jointly deformed marble and quartzite in natural thermal gradient, *Journal of Structural Geology* (2023), [doi.org/10.1016/j.jsg.2023.104892](https://doi.org/10.1016/j.jsg.2023.104892).

194. Zhao, C.B., Hobbs, B.E., Ord, A. Some fundamental issues associated with theoretical analyses of reactive infiltration instability in fluid-saturated porous media. *International Journal for Numerical and Analytical Methods in Geomechanics*, 47, 1596-1611, 2023.
195. Zhao, C.B., Hobbs, B.E., Ord, A. Analytical solutions for chemical dissolution-front instability problems involving radially divergent flow within fluid-saturated porous media. *International Journal for Numerical and Analytical Methods in Geomechanics*, 47, 2231-2255, 2023.
196. Gao, L., Li, X., Yuan, F., Wang, S., Ord, A., Zhang, R., Hu, X., Li, Y. Numerical modelling of the mineralizing processes within the Shaxi porphyry-type Cu-Au deposit, Eastern China: Influence and restriction from physical and chemical characteristics of host rocks. *Ore Geology Reviews* 168 (2024), doi.org/10.1016/j.oregeorev.2024.106041
197. Wang, J.N., Hobbs, B.E., Ord, A., Boland, J.N., Lister, G. Creep deformation of polycrystalline quartz in controlled chemical environments. *Journal of Material Science*, 60, 15, 6477-6495, 2025.
198. Zhao, C., Hobbs, B.E., Ord, A., Zhang, X. Three critical issues associated with the computational simulation of hydrothermal ore deposits within the Earth's upper crust. *Hydrogeology Journal*, 33, 4, 893-907, 2025.

***Category 2: Lightly or non-refereed open publications***

*a) Journals and Conferences*

199. Ord, A. Deformation texture development in geological materials. In: Eighth International Conference on Textures of Materials (ICOTOM 8). Eds. J.S. Kallend and G. Gottstein. The Metallurgical Society, 765-776, 1988.
200. Ralser, S., Hobbs, B.E. and Ord, A. Computer simulation of texture development in polycrystalline aggregates with a single slip system. In: Eighth International Conference on Textures of Materials (ICOTOM 8). Eds. J.S. Kallend and G. Gottstein. The Metallurgical Society, 289-294, 1988.
201. Ord, A. Real-time image analysis of size and shape distributions of rock fragments. Explosives in Mining Workshop, Melbourne, Victoria, November 1988. The AusIMM 115-119, 1988. Summarised in The AusIMM Bull. and Proc., 294, 28-31, 1989.
202. Cheung, C.C. and Ord, A. An on line fragment size analyser using image processing techniques. Third International Symposium on Rock Fragmentation by Blasting, Brisbane, Queensland, August 1990. The AusIMM, 233-238, 1990.
203. Cheung, L.C.C. and Ord, A. New areas in image processing applications: Mineral Processing and Geomechanics. In: A.J. Maeder and B.M. Jenkins, editors, DICTA-91 Digital Image Computing: Techniques and Applications. pp. 220-227, Melbourne, Australia. Australian Pattern Recognition Society. Dec. 1991.
204. Cheung, C.C. and Ord, A. Use of stereo shape measurement in industrial applications: passive or active? In: R.A. Jarvis, editor, Proceedings Workshop on Computer Vision - from Cognitive Science to Industrial Automation, Sydney, Australia. IJCAI-91, 12th International Joint Conference on Artificial Intelligence. Aug. 1991.
205. Chau, K.T., Mühlhaus, H.B. and Ord, A. Bifurcation in growth patterns for arrays of parallel Griffith, edge and sliding cracks The Third International Conference on Fracture and Strength of Solids. Hong Kong 1997.
206. Hobbs, B.E. and Ord, A. Plumbing systems responsible for the formation of giant ore deposits. In: Geofluids '97, Contributions to the Second International Conference on Fluid Evolution, Migration and Interaction in Sedimentary Basins and Orogenic Belts, editors J.P. Hendry, P.F. Carey, J. Parnell, A.H. Ruffell and R.H. Worden, pp. 100-102. Belfast, Ireland, 10-14 March 1997.

207. Wyborn, L.A.I., Ord, A., Hobbs, B.E. and Idnurm, M. Episodic crustal magnetism in the Proterozoic of Northern Australia – A continuum crustal heating model for magma generation. In: Proceedings – Palaeoproterozoic Tectonics and Metallogensis: Comparative terrane analysis of parts of the Australian and Fennoscandian Shields. AGSO Record 1997/44, 1997.
208. Zhang, Y., Hobbs, B.E. and Ord, A. Effect of topography and density inhomogeneity on the pattern of crustal stress. *Geophysics Down Under*, 24, 77-79, 1997.
209. Henley, S., Ord, A. and Walshe, J. Predictive exploration: modelling the hydrothermal process. APCOM XXVII, London, 19-23 April 1998.
210. Hobbs, B.E., Ord, A. and Walshe, J.L. The concept of coupled geodynamic modelling with special reference to the Yilgarn. In: S. Wood, editor, *Geodynamics and gold exploration in the Yilgarn*. AGCRC, 36-39, 1998.
211. Hobbs, B.E., Walshe, J.L., Ord, A., Zhang, Y. and Carr, C.R. The Broken Hill ore body: a high temperature, high pressure scenario. In: D.M. Finlayson and L.E.A. Jones, editors, *Mineral Systems and the Crust-Upper Mantle of Southeast Australia*. AGSO Record 1998/2, 98-103, 1998.
212. Ord, A., Hobbs, B.E., Walshe, J.L. and Zhao, C. Developments in the simulation of geodynamic processes with direct application to Yilgarn Gold Mineralisation. In: S. Wood, editor, *Geodynamics and gold exploration in the Yilgarn*. AGCRC, 45-51, 1998.
213. Upton, P., Ord, A. and Hobbs, B.E. Geodynamic modelling: deformation and fluid flow in 3-dimensional basins. In: D.M. Finlayson and L.E.A. Jones, editors, *Mineral Systems and the Crust-Upper Mantle of Southeast Australia*, AGSO Record 1998/2, 183-186, 1998.
214. Walshe, J.L., Hobbs, B.E., Ord, A. and Archibald, N. Geodynamic modelling of the two exploration models. In: S. Wood, editor, *Geodynamics and gold exploration in the Yilgarn*. AGCRC, 62-68, 1998.
215. Zhang, Y., Scheibner, E., Morgan, P., Hobbs, B.E., Ord, A. and Cox, S.J.D. Lithospheric structure and stress in SE Australia. In: D.M. Finlayson and L.E.A. Jones, editors, *Mineral Systems and the Crust-Upper Mantle of Southeast Australia*, AGSO Record 1998/2, 189-193, 1998.
216. Ord, A., Hobbs, B.E., Oliver, N. and Walshe, J.L. On the use of FLAC as a tool in predictive exploration. Proceedings from the International FLAC symposium on Numerical Modeling in Geomechanics, Minneapolis, 1-3 Sept, pp. 119-122, 1999.
217. Ord, A., Walshe, J.L. and Hobbs, B.E. Geodynamics and giant ore deposits. In: C.J. Stanley et al., editors. *Mineral Deposits: Processes to Processing*. Proceedings of the fifth Biennial SGA Meeting and the Tenth Quadrennial IAGOD meeting, London, UK, 22-25 August 1999.
218. Hobbs, B.E., Ord, A., Archibald, N.J., Walshe, J.L., Zhang, Y., Brown, M. and Zhao, C. Geodynamic modelling as an exploration tool. *After 2000 – The Future of Mining*, 34-49, Sydney, April 2000.
219. Zhao, C., Hobbs, B.E., Mühlhaus, H.B. and Ord, A. Numerical modelling of rock alteration and metamorphic process in hydrothermal systems, Asia Pacific Congress on Computational Mechanics. APCOM 2001, Sydney, 2001.
220. Zhao, C., Hobbs, B.E., Mühlhaus, H.B. and Ord, A. Numerical modelling of fluid dynamic interactions between mantle and crust of the Earth, Asia Pacific Congress on Computational Mechanics, APCOM 2001, Sydney, 2001.
221. Sorjonen-Ward, P., Zhang, Y, P. Alt-Epping, A. Ord, T. Cudahy, U. Kuronen. The effect of sedimentary cover on submarine hydrothermal processes - some simple numerical simulations and applications. In: Mao, J. & Bierlein, F. P. (eds). *Mineral deposit research: Meeting the global challenge : Proceedings of the Eighth Biennial SGA Conference (August 18-21, 2005, Beijing, China)*. Springer, Berlin, pp. 1497-1499, 2005.
222. Walshe, J.L., Hobbs, B., Ord, A., Regenauer-Lieb, K. and Barnicoat, A. Mineral systems, hydridic fluids, the Earth's core, mass extinction events and related phenomena. In: Mao, J. & Bierlein, F. P.

- (eds). Mineral deposit research: meeting the global challenge : Proceedings of the Eighth Biennial SGA Conference (August 18-21, 2005, Beijing, China). Springer, Berlin, pp. 65-68, 2005.
223. Zhang, Y., Ord, A., Roberts, P.A., Sorjonen-Ward, P., Lin, G. and Wang, Y.J. Numerical modelling of coupled deformation and fluid flow in mineralisation processes. In: Mao, J. & Bierlein, F. P. (eds). Mineral deposit research: meeting the global challenge : Proceedings of the Eighth Biennial SGA Conference (August 18-21, 2005, Beijing, China). Springer, Berlin, pp. 1509-1512, 2005.
  224. Hobbs, B.E., Patton, R., Ord, A., Regenauer-Lieb, K., Walshe, J. and Hall, G., 2007. A helicopter view of metamorphism in the Yilgarn mineralising system. In: Bierlein, F.P. and Knox-Robinson, C.M. (editors), 2007. Proceedings of Geoconferences (WA) Inc. Kalgoorlie '07 Conference, 25-27 September 2007, Kalgoorlie, Western Australia. Geoscience Australia Record 2007/14, 249p. pp. 52-56.
  225. Mikula, S., Sheldon, H., Ord, A. and Hobbs, B., Particle Modelling of Brecciation. In: Digging Deeper, C.J. Andrew et al (editors), Proceedings of the Ninth Biennial SGA Meeting, Dublin 2007, pp.1331-1334.
  226. Potma, W.A., Schaub, P.M., Robinson, J.A., Sheldon, H.A., Roberts, P.A., Zhang, Y., Zhao, C., Ord, A. and Hobbs, B.E., 2007. Deformation and fluid flow modeling: Exploration case studies from the Eastern Goldfields Superterrane. . In: Bierlein, F.P. and Knox-Robinson, C.M. (editors), 2007. Proceedings of Geoconferences (WA) Inc. Kalgoorlie '07 Conference, 25-27 September 2007, Kalgoorlie, Western Australia. Geoscience Australia Record 2007/14, 249p. pp. 214-217.
  227. Sheldon, H.A., Barnicoat, A.C., Zhang, Y. and Ord, A., 2007. Metamorphism in the Eastern Goldfields: Implications for fluid flow and mineralization. . In: Bierlein, F.P. and Knox-Robinson, C.M. (editors), 2007. Proceedings of Geoconferences (WA) Inc. Kalgoorlie '07 Conference, 25-27 September 2007, Kalgoorlie, Western Australia. Geoscience Australia Record 2007/14, 249p. pp. 138-142.
  228. Zhang, Y., Cleverley, J.S., Sheldon, H.A., Ord, A., Blewett, R.S. & Barnicoat, A.C. 2007. Modeling of rock deformation, fluid flow, reactive transport and Au mineralization: Examples relating to the Yilgarn craton, Australia. In: T.D. Bullen & Y. Wang eds., Water-Rock Interaction (Proceedings of the 12th International Symposium on Water-rock Interaction, Kunming, China, 31 July -5 August 2007). Taylor & Francis, London, 175-179.
  229. Zhang, Y., Schaub, P.M., Henson, P.A., Czarnota, K., Ord, A., Sheldon, H.A. and Blewett, R.S., 2007. Laverton regional numerical model: Understanding strain localization. Sheldon, H.A., Barnicoat, A.C., Zhang, Y. and Ord, A., 2007. Metamorphism in the Eastern Goldfields: Implications for fluid flow and mineralization. . In: Bierlein, F.P. and Knox-Robinson, C.M. (editors), 2007. Proceedings of Geoconferences (WA) Inc. Kalgoorlie '07 Conference, 25-27 September 2007, Kalgoorlie, Western Australia. Geoscience Australia Record 2007/14, 249p. p. 248.
  230. Zhang, Y., Sheldon, H.A., Blewett, R.S., Ord, A., Barnicoat, A.C. and Czarnota, K., 2007. Deformation and fluid flow associated with late basins and domes: Implications for mineralization in the Yilgarn. Sheldon, H.A., Barnicoat, A.C., Zhang, Y. and Ord, A., 2007. Metamorphism in the Eastern Goldfields: Implications for fluid flow and mineralization. . In: Bierlein, F.P. and Knox-Robinson, C.M. (editors), 2007. Proceedings of Geoconferences (WA) Inc. Kalgoorlie '07 Conference, 25-27 September 2007, Kalgoorlie, Western Australia. Geoscience Australia Record 2007/14, 249p. p. 249.
  231. Hobbs, B. and Ord, A. Non-equilibrium thermodynamics and the coupling between deformation and metamorphism. Conference on Deformation Mechanisms, Rheology and Tectonics, Sep 24 - Oct 2 2007, Milan, Italy. Bollettino della Societa Geologica Italiana, 127, 213-216, 2008.
  232. Hobbs, B. E., Ord, A. and Zhao, C. Emergence in crustal plumbing systems. Journal of Geochemical Exploration, 2008. (doi:10.1016/j.gexplo.2008.12.019)

233. Metcalfe, G., Lester, D., Ord, A. and Trefry, M. Transport in a partially open porous media flow. SPIE Microelectronics, MEMS, and Nanotechnology Conference, Australian National University, Canberra, 4-7 December 2007. In: Complex Systems II, Eds. Abbott, D., Aste, T., Batchelor, M., Dewar, R., Di Matteo, T. and Guttman, T. Proc. of SPIE Vol. 6802, 680201-1 -12, 2008. (doi: 10.1117/12.769319)
234. Ord, A., Metcalfe, G., Trefry, M., Lester, D., Kulkarni, P., Kesari, S., Hobbs, B., Rudman, M. and Hornby, P. Chemical and biological transport in deforming porous media. Journal of Geochemical Exploration, 2008. (doi:10.1016/j.gexplo.2008.11.004)
235. Zhang, Y. & Ord, A. Simulation of fracturing and mechanical damage in rocks. Proceedings of American Rock Mechanics Association 2008 Symposium (29 Jun-2 July 2008, San Francisco), paper ARMA 08-111 (6 pages). 2008.
236. Zhao, C., Hobbs, B. E. and Ord, A. Advances in computational geoscience: Numerical methods and algorithms for simulating geofluid flow related problems, Journal of Geochemical Exploration, 2008. (doi:10.1016/j.gexplo.2008.11.022)
237. Zhao, C., Hobbs, B.E. and Ord, A. Advances in convective and advective heat transfer in geological systems, Journal of Geochemical Exploration, 2008. (doi:10.1016/j.gexplo.2008.11.002)
238. Zhao, C., Hobbs, B.E. and Ord, A. Critical role of geofluid flow in ore forming processes of hydrothermal systems: Theoretical analysis and computational simulation, Journal of Geochemical Exploration, 2008. (doi:10.1016/j.gexplo.2008.11.003)
239. Hobbs, B., Ord, A., Williams, S., McLellan, J. and Oliver, N. A non-equilibrium approach to ore body formation. Smart Science for Exploration and Mining, 861-863, 2010.
240. Ord, A., Hobbs, B., Walshe, J., Metcalfe, G., Trefry, M., Zhao, C., Lester, D., Regenauer-Lieb, K. and Rudman, M. Architecture and mixing for crustal plumbing systems: St Ives as a type example. Smart Science for Exploration and Mining, 833-835, 2010.
241. Regenauer-Lieb, K., Karrech, A., Chua, H.T., Poulet, T., Trefry, M.G., Ord, A. and Hobbs, B. Non-equilibrium thermodynamics for multi-scale THMC coupling. Paper GP065, GeoProc2011, Perth, 6-9 July 2011.
242. Paesold, M.K., Karrech, A., Dodwell, T., Regenauer-Lieb, K., Bassom, A.P., Ord, A. and Hobbs, B.E. Non-linear thermo-mechanics of folding in geomaterials. 15th Annual Conference of the International Associate for Mathematical Geosciences (IAMG), Madrid, Spain, 2-6 Sep 2013. Mathematics of Planet Earth. Lecture Notes in Earth Sciences, 753-756, 2014. doi: 10.1007/978-3-642-32408-6\_162
243. Hobbs, B., Ord, A. Vein systems and fluid pressure distributions in mineralising systems: implications for the fault-valve model. Structural Geology and Resources 2022, 18-20 October 2022, Kalgoorlie, Western Australia. Australian Institute of Geoscientists, Bulletin 72-2022. J. Vearncombe (Compiler). pp. 35-37, 2022.
244. Ord, A., Hobbs, B. Analysing the spectrum of hydrothermal mineralising systems. Structural Geology and Resources 2022, 18-20 October 2022, Kalgoorlie, Western Australia. Australian Institute of Geoscientists, Bulletin 72-2022. J. Vearncombe (Compiler). pp. 72-74, 2022.

*b) Abstracts*

245. Ord, A., Wegner, M.W. and Christie, J.M. Microstructures and flow stresses in mylonitic rocks from Coyote Mountain, California. Paper presented at 9th Western Regional Meeting of Electron Microscopists, Calif. Soc. for Electron Microsc., Palm Springs, Calif., 30 April - 3 May 1979.
246. Christie, J.M. and Ord, A. Flow stresses from microstructures and mylonites: example and current assessment. EOS, Trans. AGU, 61, 639, 1980.

247. Christie, J.M., Ord, A. and Koch, P.S. Relationship between recrystallized grain size and flow stress in experimentally deformed quartzite. EOS, Trans. AGU, 61, 377, 1980.
248. Ord, A. and Kirby, S.H. Burgers vectors in deformed synthetic quartz. Paper presented at 7th Australian Conf. on Electron Microscopy and Cell Biology Meeting, Australian Academy of Science, Canberra, February 1982.
249. Ord, A. and Hobbs, B.E. Oxygen dependence on the hydrolytic weakening effect in quartz. EOS, Trans. AGU 64, 839, 1983.
250. Ord, A., Hobbs, B.E., Etheridge, M.A. and Edward, G.H. Recrystallized grain size in ductile fault (mylonite) zones as an indicator of palaeostress magnitudes during faulting. Volume XVII, Summaries of Technical Reports, United States Department of the Interior, 1983.
251. Ord, A. and Hobbs, B.E. Experimental deformation of quartz in a controlled metamorphic environment. Journal of Structural Geology, 7, 496, 1985.
252. Ord, A. and Hobbs, B.E. Solubility of (OH) in quartz. EOS, Trans. AGU, 66, 373, 1985.
253. Hobbs, B.E. and Ord, A. Experimental control of the water-weakening effect in quartz. Geological Association of Canada, Mineralogical Association of Canada, Program with Abstracts, 10, A28, 1985.
254. Ord, A. and Hobbs, B.E. Crustal strength and its relationship to water fugacity, paper presented to the Specialist Group on Solid-Earth Geophysics, Rheology of the Lithosphere, 2-3 September 1985, Geol. Soc. Australia.
255. Ord, A. and Hobbs, B.E. Experimental control of hydrolytic weakening. EOS, Trans. AGU, 66, 1139, 1985.
256. Davidson, J.L., Hobbs, B.E. and Ord, A. The creep of ZnS in a controlled atmosphere. EOS, Trans. AGU, 66, 1084, 1985.
257. Ralser, S., Hobbs, B.E. and Ord, A. Effects of chemical environment on the experimental deformation of a quartz mylonite, EOS, Trans. AGU, 66, 1084, 1985.
258. Zee, R.Y.S., Teyssier, C., Hobbs B.E. and Ord, A. Development of foliations in the Wyangala Gneiss, Central New South Wales, Australia. Journal of Structural Geology, 7, 501, 1985.
259. Ord, A. and Swain, M.V. High pressure, high temperature deformation of ZrO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub>. Austceram 86: Ceramics, the New Era. Proc. 12<sup>th</sup> Australian Ceramics Conference, Melbourne, pp. 33-38, 1986.
260. Davidson, J.L., Hobbs, B.E. and Ord, A. Creep of zinc sulphide in a controlled thermodynamic environment. International Conference on Deformation of Crustal Rocks, Mt. Buffalo, Australia, 2-6 February 1987, Geological Society of Australia Abstracts, 19, 64, 1987.
261. Ord, A. Deformation texture development in geological materials. 8<sup>th</sup> International Conference on Textures of Materials, 20-25 Sept. 1987, Santa Fe, New Mexico, USA.
262. Hobbs, B.E. and Ord, A. Crustal modelling. International Conference on Deformation of Crustal Rocks, Mt. Buffalo, Australia, 2-6 February 1987, Geological Society of Australia Abstracts, 19, 77, 1987.
263. Ord, A. and Hobbs, B.E. The plastic deformation of quartz. International Conference on Deformation of Crustal Rocks, Mt. Buffalo, Australia, 2-6 February 1987, Geological Society of Australia Abstracts, 19, 70-72, 1987.
264. Davidson, J.L., Hobbs, B.E. and Ord, A. The creep of ZnS in a controlled atmosphere. EOS, Trans. AGU, 66, 1084, 1985.
265. Ralser, S., Hobbs, B.E. and Ord, A. Computer modelling of microfabric development in polycrystalline aggregates. International Conference on Deformation of Crustal Rocks, Mt. Buffalo, Australia, 2-6 February 1987, Geological Society of Australia Abstracts, 19, 33-34, 1987.

266. Ralser, S., Hobbs, B.E. and Ord, A. Computer simulation of texture development in polycrystalline aggregates with a single slip system. 8<sup>th</sup> International Conference on Textures of Materials, 20-25 Sept. 1987, Santa Fe, New Mexico, USA.
267. Ralser, S., Hobbs, B.E. and Ord, A. Experimental deformation of a quartz mylonite: the effect of orientation. International Conference on Deformation of Crustal Rocks, Mt. Buffalo, Australia, 2-6 February 1987, Geological Society of Australia Abstracts, 19, 82-83, 1987.
268. Fitz Gerald, J.D., Ord, A., Boland, J.N. and McLaren, A.C. The water-weakening effect in experimental deformation of quartz. International Conference on Deformation of Crustal Rocks, Mt. Buffalo, Australia, 2-6 February 1987, Geological Society of Australia Abstracts, 19, 68-69, 1987.
269. Ord, A. Ancient earthquakes and adiabatic shear in the Musgrave Ranges. Australian Tectonics. Kangaroo Island Conference, 6-10 February, 1989, Geological Society of Australia Abstracts, 24, 112-113, 1989.
270. Ord, A. Structural controls on dilatant shear zones and vein formation. Deformation Mechanisms, Rheology and Tectonics. University of Leeds, U.K., 29-31 March 1989.
271. Ord, A. Physical conditions required for localisation of deformation. International Symposium on Rock Mechanics and Rock Physics at Great Depth, Comite Francaise de Mecanique des Roches, Pau, France, 28-31 August 1989.
272. Hobbs, B.E. and Ord, A. Numerical simulation of localisation in geological materials. International Symposium on Rock Mechanics and Rock Physics at Great Depth. Comite Francaise de Mecanique des Roches. Pau, France, 28-31 August 1989.
273. Hobbs, B.E., Ord, A., Valenta, R. and Gardiner, F. The plumbing system for some Australasian ore-bodies. Australasian Tectonics. Kangaroo Island Conference, 6-10 February 1989, Geological Society of Australia Abstracts, 24, 73, 1989.
274. Wang, J., Ord, A. and Hobbs, B.E. The effect of chemical environment on the experimental deformation of quartzite. Australasian Tectonics. Kangaroo Island Conference, 6-10 Feb. 1989. Geological Society of Australia Abstracts, 24, 161, 1989.
275. Zhang, Y., Hobbs, B.E. and Ord, A. Numerical simulation of the buckling development of elastic-viscous folds. Australasian Tectonics. Kangaroo Island Conference, 6-10 Feb. 1989. Geological Society of Australia Abstracts, 24, 177, 1989.
276. Ord, A. Localisation in rocks. Eleventh U.S. National Congress of Applied Mechanics. Tucson, Arizona, 21-25 May 1990.
277. Ord, A. Fluid flow through patterned shear zones. EOS, Trans. AGU, 71, 642, 1990.
278. Hobbs, B.E. and Ord, A. Fluid flow in the upper crust. EOS, Trans. AGU, 71, 642, 1990.
279. Hobbs, B.E., Ord, A. and Marone, C. Interpretation of rate dependent frictional behaviour in terms of rate dependent Coulomb constitutive laws. Earthquake Mechanics, Rock Deformation, and Transport Properties of Rocks: A Symposium in Honour of W.F. Brace. Massachusetts, Cambridge, 10-11 June 1990.
280. Ord, A. and James, P.R. Determination of strain from automatic image analysis of deformed objects. Gondwana: terranes and resources. 10<sup>th</sup> Australian Geological Convention, Hobart, February 1990. Geological Society of Australia Abstracts, 185, 1990.
281. Ord, A. and Hobbs, B.E. Fluid flow in the Earth's crust. Earthquake Mechanics, Rock Deformation, and Transport Properties of Rocks: A Symposium in Honour of W.F. Brace. Massachusetts, Cambridge, 10-11 June 1990.
282. Valenta, R., Ord, A. and Hobbs, B. Structural controls on copper mineralisation in the Hilton Mine. Mt Isa Inlier Geology Conference. Victorian Institute of Earth and Planetary Sciences. Melbourne, Victoria, 27-30 November 1990. pp.58-59.

283. Ord, A., Hobbs, B., Valenta, R. and Oliver, N. Computer simulation of fluid flow in deforming rocks with reference to mineralisation and metasomatism in the Mt. Isa Inlier. Mt. Isa Inlier Geology Conference. Victorian Institute of Earth and Planetary Sciences. Melbourne, Victoria, 27-30 November 1990. pp.37-40.
284. Ord, A. The geometry of patterned structures. Mitt. aus den Geol. Inst. ETH Zürich, Neue Folge, 239b, 47-48, 1991.
285. Ord, A. Physical constraints on the strength of and fluid circulation in the crust. Conference on Structural Geology in Mining and Exploration. Kalgoorlie, Australia, 10-13 October 1991. Geology Department and Extension Service, The University of Western Australia, 25, 43-46, 1991.
286. Ord, A. Localization in rock: A pressure-sensitive, dilatant material. TERRA Abstracts Supplement 5 to TERRA NOVA, 3, 29, 1991.
287. Ord, A. Localization of deformation in the Earth's upper crust. EOS, Trans. AGU, 72, 443-434, 1991.
288. Hobbs, B.E., Mühlhaus, H.B. and Ord, A. The fractal geometry of deformed rocks. Mitt. aus den Geol. Inst. ETH Zürich, Neue Folge, 239b, 28, 1991.
289. Oliver, N., Ord, A., Lister, G.S., Hobbs, B.E. and Valenta, R.K. Tortuous metamorphic fluid flow induced by deformation of inhomogeneous rocks. TERRA Abstracts Supplement 5 to TERRA NOVA, 3, 29, 1991.
290. Valenta, R.K., Ord, A. and Hobbs, B.E. Field and theoretical constraints on the structural localization of mineralizing fluids in the Hilton area, Mount Isa, Australia. TERRA Abstracts Supplement 5 to TERRA NOVA, 3, 40, 1991.
291. Wang, J.N., Ord, A. and Hobbs, B. Newtonian viscous creep of a quartzite at low stresses. Cratonic margins: structural and tectonic processes. SGTSG Conference, Margaret River, Western Australia, October 1991. Geological Society of Australia Abstracts, 78-79, 1991.
292. Yeo, K., Cheung, C.C., Ord, A. and Brown, W.A. Determination of rock fragment sizes using a transputer array. Transputer Applications 91. The Third International Conference and Exhibition of Applications of Transputers. Glasgow, Scotland, 28-30 August 1991.
293. Zhang, Y., Hobbs, B. and Ord, A. Preferred orientation of polycrystals with one slip system. Cratonic margins: structural and tectonic processes. SGTSG Conference Margaret River, Western Australia, October 1991. Geological Society of Australia Abstracts, 85-86, 1991.
294. Hobbs, B.E. and Ord, A. Fractals in geology. Earth sciences, computers and the environment. 11th Australian Geological Convention. Ballarat, Victoria, January 18-25, 1992. Geological Society Abstracts, 223-224, 1992.
295. Hobbs, B.E. and Ord, A. The fractal geometry of jointed rock masses. Accepted for publication in Fractured and Jointed Rock Masses Conference. California. June 3-5, 1992.
296. Hobbs, B.E., Ord, A. and Horowitz, F. A fractal description of jointed rock masses. Accepted for publication in International ISRM Symposium on Rock Characterization. Chester, U.K. 14-17 September 1992.
297. Ord, A. and Oliver, N. Controls on fluid pumping during deformation. Earth sciences, computers and the environment. 11th Australian Geological Convention. Ballarat, Victoria, January 18-25, 1992. Geological Society of Australia Abstracts, 226, 1992.
298. Ord, A., Windsor, C. and Leisemann, B. Automatic geological mapping and stability assessment in the open pit environment. Accepted for publication in International ISRM Symposium on Rock Characterization. Chester, U.K. 14-17 September 1992.
299. Ord, A., Leisemann, B., Cheung, L.C.C. and le Blanc, D. Remote, automatic surveying and analysis of joint systems. Accepted for publication in Fractured and Jointed Rock Masses Conference. California. June 3-5, 1992.

300. Ord, A. The geometry of patterned structures. International Symposium on Fractals and Dynamic Systems in Geosciences. Frankfurt am Main, Germany, 1-3 April, 1993.
301. Ord, A. The geometry of patterned structures. 3rd Workshop on Localisation and Bifurcation Theory for Soils and Rocks. Aussois, France, 6-9 September 1993.
302. Hobbs, B.E., Mülhaus, H.-B., Ord, A. and Zhang, Y. New theories of fold and cleavage development. Deformation Processes: From Microcracks to Mountain Belts. Jindabyne Conference, 6-11 February 1994, Geological Society of Australia Abstracts, 1994.
303. Zhang, Y., Hobbs, B.E. and Ord, A. Computer simulation of single layer buckling and its associated cleavage development. Deformation Processes: From Microcracks to Mountain Belts. Jindabyne Conference, 6-11 February 1994, Geological Society of Australia Abstracts, 1994.
304. Hobbs, B.E., Zhang, Y. and Ord, A. Crenulation cleavage or strain-slip cleavage? Clare Valley Conference, 25-29 September 1995, Geological Society of Australia Abstracts 40, 67, 1995.
305. Hunt, G., Mühlhaus, H.B., Hobbs, B.E. and Ord, A. Localised folding of visco elastic layers. 2nd International Symposium on Fractals and Dynamic Systems in Geosciences. Frankfurt am Main, Germany, 1995.
306. Hunt, G., Mühlhaus, H.B., Hobbs, B.E. and Ord, A. The role of elasticity in visco-elastic fold evolution. Clare Valley Conference, 25-29 September 1995, Geological Society of Australia Abstracts 40, 1995.
307. Jiang, Z., Oliver, N.H.S., Barr, T.D., Power, W.L. and Ord, A. Modelling of Fluid Migration Along Faults In Different Structural Environments. Geological Society of Australia, Abstracts 40, 81, 1995.
308. Zhang, Y., Scheibner, E., Ord, A. and Hobbs, B.E. Numerical modelling of crustal deformation of the eastern Australian passive margin. Geophysics and the Environment, XXI IUGG General Assembly abstracts, 1995.
309. Zhang, Y., Scheibner, E., Hobbs, B.E., Ord, A. and Drummond, B. Lithospheric structure in the eastern Australian passive margin as revealed by gravity modelling. Clare Valley Conference, 25-29 September 1995, Geological Society of Australia Abstracts 40, 1995.
310. Hobbs, B.E. and Ord, A. Development of shear zones during three dimensional deformation. International Conference on Structure and Properties of High Strain Zones in Rocks. Italy, 3-7 September 1996.
311. Mason, R.M. and Ord, A. Modelling the effects of crustal structure during convergence. Third International Symposium on Andean Geodynamics. St Malo, France, 17-19 September 1996.
312. Ord, A. Patterning of silica concentration with time in a deforming rock mass. American Geophysical Union, Western Pacific Geophysics Meeting, Brisbane, July 23-27, 1996.
313. Ord, A. Physical requirements of a trap? 13th Australian Geological Convention, Canberra, February 1996. Geological Society of Australia Abstracts 41, 1996.
314. Ord, A. and Henley, S. Fluid pumping: some exploratory numerical models. European Geophysical Society Annales Geophysicae, Society Symposia, Solid Earth Geophysics and Natural Hazards, C180, 1996.
315. Ord, A., Hobbs, B.E., and Zhang, Y. The formation of shear zones in foliated materials - a coupled mechanical-fluid flow-chemical reaction study. International Conference on Structure and Properties of High Strain Zones in Rocks. Italy, 3-7 September 1996.
316. Zhang, Y., Hobbs, B.E., Ord, A. and Scheibner, E. Numerical modelling of crustal stress derived from topography and density inhomogeneities. 30<sup>th</sup> International Geological Congress Abstracts 1996.
317. Zhang, Y., Scheibner, E., Hobbs, B.E. and Ord, A. Mechanical modelling of the Australian continent: insight into mechanical controls on major mineralisation, the present day stress regime and seismicity. Mesozoic Geology of Eastern Australia. 1996.

318. Hobbs, B.E. and Ord, A. Development of shear zones during three dimensional deformation. 4th International Workshop on Localization and Bifurcation Theory for Soils and Rocks. Gifu, Japan, 28 September – 2 October 1997.
319. Hobbs, B., Upton, P., Ord, A., Zhao, C., Drummond, B. and Archibald, N. Thermal and deformation modelling of the Yilgarn deep seismic transect. Proc. of the Fourth Biennial SGA Meeting, Turku, Finland.. Ed. Heikki Papunen, pp. 859-862, 1997.
320. Oliver, N.H.S., Ord, A. and Hobbs, B.E. Key factors influencing fluid flow in the mid crust: implications for metals transport and ore deposition. In: New Developments in Research for Ore Deposit Exploration, Specialist Group in Economic Geology, Geological Society of Australia Abstracts 44, p 55, Canberra, 30-31 January 1997.
321. Ord, A. and Hobbs, B.E. Plumbing systems responsible for the formation of giant ore deposits. In: Geofluids '97, Contributions to the Second International Conference on Fluid Evolution, Migration and Interaction in Sedimentary Basins and Orogenic Belts, editors J.P. Hendry, P.F. Carey, J. Parnell, A.H. Ruffell and R.H. Worden, pp 100-102. Belfast, Ireland, 10-14 March 1997.
322. Ord, A. and Upton, P. Simulation of geodynamic processes. Abstracts, Geodynamics and Ore Deposits Conference, Australian Geodynamics Cooperative Research Centre, Ballarat, Victoria, February 19 - 21. pp 89-91, 1997.
323. Ord, A., Hobbs, B.E. and Mason, R. Hydrostatic fluid gradients and vein geometries. In: New Developments in Research for Ore Deposit Exploration, Specialist Group in Economic Geology, Geological Society of Australia Abstracts 44, p 56, Canberra, 30-31 January 1997.
324. Ord, A., Sakaguchi, H. and Cundall, P.A. Detailed local structure from regional scale modelling. Abstracts, Geodynamics and Ore Deposits Conference, Australian Geodynamics Cooperative Research Centre, Ballarat, Victoria, February 19 - 21. p 80, 1997.
325. Ord, A., Hobbs, B.E., Mühlhaus, H.-B. and Sakaguchi, H. Fold systems as natural rock deformation laboratories. Deformation Mechanisms in Nature and Experiment, p 49, Basel, 17-19 March 1997.
326. Upton, P. and Ord, A. Porosity, permeability and pore pressure variation in deforming rocks. In: New Developments in Research for Ore Deposit Exploration, Specialist Group in Economic Geology, Geological Society of Australia Abstracts 44, p 68, Canberra, 30-31 January 1997.
327. Upton, P. and Ord, A. Porosity, permeability and fluid flow in deforming rocks. Deformation Mechanisms in Nature and Experiment, p 33, Basel, 17-19 March 1997.
328. Upton, P., Hobbs, B., Ord, A., Zhang, Y., Zhao, C., Drummond, B. and Archibald, N. Thermal and deformation modelling of the Yilgarn deep seismic transect. Abstracts, Geodynamics and Ore Deposits Conference, Australian Geodynamics Cooperative Research Centre, Ballarat, Victoria, February 19 - 21. pp 22-25, 1997.
329. Zhang, Y., Ord, A. and Hobbs, B.E. Effect of topography and density inhomogeneity on the pattern of crustal stress. In: Geological Structures and their Geophysical Signatures, Geophysics Down Under, 24, pp 77-79, 1997.
330. Zhao, C., Mühlhaus, H.B., Hobbs, B.E. and Ord, A.  $\mu$ -VT as an exploration tool. In: New Developments in Research for Ore Deposit Exploration, Specialist Group in Economic Geology, Geological Society of Australia Abstracts 44, p 79, Canberra, 30-31 January 1997.
331. Hobbs, B.E., Mühlhaus, H.-B. and Ord, A. A review of recent developments in the evolution of single layer folds and of axial plane foliation. In: Evolution of Structures in Deforming Rocks. Geological Association of Canada NUNA Research Conference. 26-28 September 1998.
332. Ord, A., Henley, S. and Walshe, J.L. Predictive exploration: modelling the hydrothermal process. APCOM XXVII, London 19-23 April 1998.
333. Ord, A., Cundall, P.A., Hobbs, B.E., Moresi, L., Mühlhaus, H.-B. and Sakaguchi, H. Modelling fluid-rock interactions by particle systems. In: Geoscience'98, Keele, UK, 14-18 April 1998.

334. Ord, A., Hobbs, B.E., Zhang, Y. and Mühlhaus, H.B. Differentiated crenulation cleavage: A coupled deformation–fluid flow–chemical transport problem. In: Evolution of Structures in Deforming Rocks. Geological Association of Canada NUNA Research Conference. 26-28 September 1998.
335. Zhang, Y., Scheibner, E., Morgan, P., Hobbs, B.E., Ord, A. and Cox, S.J.D. Crustal stress in the Australian continent. AGU Western Pacific Geophysics meeting, Taipei, July 21-24. Supplement to EOS, 79, 76, 1998.
336. Zhao, C., Hobbs, B.E., Baxter, K., Mühlhaus, H.B. and Ord, A. Numerical modelling of pore-fluid, thermal and mass flow in hydrothermal basins: case study of NW Shelf Basin. 14th Australian Geological Convention, Townsville, July 1998. Geological Society of Australia Abstracts, 49, 1998.
337. Zhang, Y., Hobbs, B.E., Ord, A. and Mühlhaus, H.-B. What controls fold shape? A clarification of an issue regarding the influence of initial irregularities. Submitted to Journal of Structural Geology, 1999.
338. Gow, P. and Ord, A. Numerical modelling of deformation and fluid flow in shallow plutonic compressional environments. The Last Conference of the Millennium, Halls Gap, Victoria, February 14-19, 1999.
339. Hobbs, B.E. and Ord, A. Fluid transport in deforming overpressured rock masses. The Last Conference of the Millennium, Halls Gap, Victoria, February 14-19; European Union of Geosciences EUG 10, Strasbourg, 28 March – 1 April 1999.
340. Oliver, N.H.S., Ord, A. and Hobbs, B.E. Application of numerical continuum modelling to fluid flow in shear zones, veins and ores, with some Australian examples. Geological Society of Australia. Abstract, Ser., **53**, 181-182, 1999.
341. Ord, A., Hobbs, B.E., Gray, D.R. and Foster, D. Numerical modelling of the geological development of the West Lachlan Orogen. The Last Conference of the Millennium, Halls Gap, Victoria, February 14-19; European Union of Geosciences EUG 10, Strasbourg, 28 March – 1 April 1999.
342. Sorjonen-Ward, P., Walshe, J.L., Hobbs, B.E., Hall, G. and Ord, A. Towards an understanding of giant gold systems. The Last Conference of the Millennium, Halls Gap, Victoria, February 14-19, 1999.
343. Zhang, Y., Hobbs, B.E., Ord, A. and Mühlhaus, H.B. A clarification of an issue regarding the influence of initial irregularities upon fold shape. The Last Conference of the Millennium, Halls Gap, Victoria, February 14-19, 1999.
344. Zhang, Y., Ord, A., Hobbs, B.E., Walshe, J.L. and Archibald, N.J. 3D coupled mechanical/fluid flow modelling of the Yilgarn. The Last Conference of the Millennium, Halls Gap, Victoria, February 14-19, 1999.
345. Zhang, Y., Hobbs, B.E., Ord, A. and Mühlhaus, H.B. Initial Geometry, strain rate and material properties – which control fold shape? A clarification of an issue regarding the influence of initial irregularities upon fold shape. The Last Conference of the Millennium, Halls Gap, Victoria, February, 14-19, 1999.
346. Zhao, C., Hobbs, B.E., Mühlhaus, H.B. and Ord, A. Numerical modelling of convective and reactive flow in deformable fluid-saturated porous media. In "Proceedings ACAM 99, The Second Australasian Congress on Applied Mechanics", Canberra, 10-12 February 1999, 6pp.
347. Hobbs, B.E., Walshe, J., Ord, A., Zhang, Y., and Zhao C., Geodynamic modelling of the Broken Hill mineralization system. 15th Australian Geological Convention, Understanding Planet Earth, Sydney, 3-7 July, Geological Society of Australia Abstracts, **59**, 230, 2000.
348. Ord, A., Hobbs, B.E., Walshe, J., Zhang, Y., Brown, M. and Zhao, C. Geodynamic modelling of the Century Zinc mineralisation system: Three scenarios. 15th Australian Geological Convention, Sydney, 3-7 July, Geological Society of Australia Abstracts, **59**, 371, 2000.
349. Zhang, Y., Hobbs, B.E., Ord, A. and Sorjonen-Ward, P. Interaction between deformation, thermal structure and fluid flow in thrusting regimes and its relevance to mineralisation. 15th Australian

Geological Convention, Understanding Planet Earth, Sydney, 3-7 July, Geological Society of Australia Abstracts, **59**, 563, 2000.

350. Freij-Ayoub R, Walshe, J.L., Mühlhaus, H.B., Hobbs, B.E., and Ord, A. Numerical modelling of rock alteration patterns and mineralization processes. In Williams, P.J. (editor): A Hydrothermal Odyssey, Extended Conference Abstracts, Townsville, Queensland, Australia. May 17-19, EGRU Contribution No. 59 pp. 54-55, 2001.
351. Gessner, K., Wijns, C., Moresi, L., Boschetti, F. and Ord, A. Flow partitioning in the lithosphere during core complex formation: An interactive evolutionary computation approach using particle-in-cell finite elements. AGU Chapman Conference on Exploration Geodynamics, Dunsborough, Western Australia, August 20-24, pp. 67-71, 2001.
352. Hobbs, B.E., Mühlhaus, H.B., Ord, A., and Moresi, L.N. Metamorphic differentiation. In Davidson, G. and Pongratz, J. (editors). 2001: A Structural Odyssey. Specialist Group in Tectonics and Structural Geology, Ulverstone, Tasmania, Australia. February 12-16, Geological Society of Australia Abstracts, **64**, 84, 2001.
353. Hobbs, B.E., Ord, A., Walshe, J., Mühlhaus, H.B., Zhang, Y., Zhao, C. and Freij-Ayoub, R. The mechanics of hydrothermal mineralizing systems. In Williams, P.J. (editor): A Hydrothermal Odyssey. Extended Conference Abstracts, Townsville, Queensland, Australia. May 17-19, EGRU Contribution No. 59, pp. 86-89, 2001.
354. Hobbs, B.E., Ord, A., Walshe, J., Mühlhaus, H.B., Zhang, Y., Zhao, C. and Freij-Ayoub, R. The mechanics of hydrothermal mineralizing systems. AGU Chapman Conference on Exploration Geodynamics, Dunsborough, Western Australia, pp. 84-86, 2001.
355. Ord, A., Cundall, P.A. and Hobbs, B.E. Modelling fluid flow and fractures. In Williams, P.J. (editor): A Hydrothermal Odyssey. Extended Conference Abstracts, Townsville, Queensland, Australia. May 17-19, EGRU Contribution No. 59 pp. 158-159, 2001.
356. Ord, A., Moresi, L. and Hobbs, B.E. Modelling magma ascent. In Davidson, G. and Pongratz, J. (editors). 2001: A Structural Odyssey. Specialist Group in Tectonics and Structural Geology, Ulverstone, Tasmania, Australia. February 12-16, Geological Society of Australia Abstracts, **64**, 131, 2001.
357. Schaub, P.M., Wilson, C.J.L., and Ord, A. Chevron folding and fluid - flow in the Bendigo gold field, Central Victoria: constraints on gold mineralisation from numerical models. In Williams, P.J. (editor): A Hydrothermal Odyssey. Extended Conference Abstracts, Townsville, Queensland, Australia. May 17-19, EGRU Contribution No. 59 pp. 179-180, 2001.
358. Schaub, P.M., Wilson, C.J.L., and Ord, A. Chevron folding and fluid - flow in the Bendigo gold field, Central Victoria: constraints on gold mineralisation from numerical models. In Davidson, G. and Pongratz, J. (editors). 2001: A Structural Odyssey. Specialist Group in Tectonics and Structural Geology, Ulverstone, Tasmania, Australia. February 12-16, Geological Society of Australia Abstracts, **64**, 162, 2001.
359. Sorjonen-Ward, P., Hobbs, B.E., Ord, A., Zhang, Y. and Zhao, C. Numerical modelling of fluid and heat transport during deformation in the late Archaean Yilgarn craton and its relevance to late orogenic gold mineralisation. In Williams, P.J. (editor): A Hydrothermal Odyssey. Extended Conference Abstracts, Townsville, Queensland, Australia. May 17-19, EGRU Contribution No. 59 pp. 215-216, 2001.
360. Sorjonen-Ward, P., Hobbs, B.E., Ord, A., Zhang, Y. and Zhao, C. Numerical modelling of fluid and heat transport during deformation in the late Archaean Yilgarn craton and its relevance to late orogenic gold mineralisation. AGU Chapman Conference on Exploration Geodynamics, Dunsborough, Western Australia, pp. 165-167, 2001.
361. Wijns, C., Moresi, L., Davies, B. and Ord, A. Understanding an evolving orogen. In Davidson, G. and Pongratz, J. (editors). 2001: A Structural Odyssey. Specialist Group in Tectonics and Structural

- Geology, Ulverstone, Tasmania, Australia. February 12-16, Geological Society of Australia Abstracts, **64**, 192, 2001.
362. Wijns, C., Moresi, L., Davies, B. and Ord, A. Understanding an evolving orogen. In Williams, P.J. (editor): *A Hydrothermal Odyssey*. Extended Conference Abstracts, Townsville, Queensland, Australia. May 17-19, EGRU Contribution No. 59 p. 221, 2001.
  363. Wijns, C., Moresi, L., Boschetti, L., Ord, A., Sorjonen-Ward, P., and Davies, B. Bringing conceptual geological models to life. AGU Chapman Conference on Exploration Geodynamics, Dunsborough Western Australia, Conference Programme and Abstracts, 171-173, 2001.
  364. Wijns, C., Groves, D., Weinberg, R., Ord, A. and Moresi, L. Continent-scale fluid flow in collisional orogens. Fourth International Archaean Symposium Extended Abstracts, AGSO-Geoscience Australia Record 2001/37, 491, 2001.
  365. Willetts, G., Hobbs, B. and Ord, A. Geodynamic modeling of Irish-type base metal deposits of the central Irish midlands, and genetic comparisons with the Rosebery lead-zinc deposit, Tasmania. Understanding an evolving orogen. In Davidson, G. and Pongratz, J. (editors). 2001: *A Structural Odyssey*. Specialist Group in Tectonics and Structural Geology, Ulverstone, Tasmania, Australia. February 12-16, Geological Society of Australia Abstracts, **64**, 193, 2001.
  366. Zhang, Y., Hobbs, B.E., Barnicoat, A., Ord, A. & Walshe, J. Faulting related deformation and fluid flow. In Davidson, G. and Pongratz, J. (editors). 2001: *A Structural Odyssey*. Specialist Group in Tectonics and Structural Geology, Ulverstone, Tasmania, Australia. February 12-16, Geological Society of Australia Abstracts, **64**, 199, 2001.
  367. Zhang, Y., Hobbs, B.E., A., Ord, A., Walshe, J. and Zhao, C. Interaction between faulting, deformation, fluid flow and mineral precipitation: a numerical modelling approach. In Williams, P.J. (editor): *A Hydrothermal Odyssey*. Extended Conference Abstracts, Townsville, Queensland, Australia. May 17-19, EGRU Contribution No. 59 pp. 231-232, 2001.
  368. Zhang, Y., Ord, A., Hobbs, B.E., Sorjonen-Ward, P. and Zhao, C. Numerical modelling of the interaction between deformation, thermal transport, fluid flow and mineral precipitation. AGU Chapman Conference on Exploration Geodynamics, Dunsborough, Western Australia, August 20-24, pp.190-192, 2001.
  369. Zhao, C., Hobbs, B.E., Mühlhaus, H.B. and Ord, A. Mineralisation patterns in folded hydrothermal systems. AGU Chapman Conference on Exploration Geodynamics, Dunsborough, Western Australia, August 20-24, pp.193-195, 2001.
  370. Gessner, K., Boschetti, F., Sakaguchi, H., and Ord, A. Fabric evolution in shear zones. 6th International Workshop on Localization and Bifurcation Theory for Soils and Rocks. Minneapolis, USA, 3-5 June 2002.
  371. Gessner, K., Wijns, C., Moresi, L., Ord, A., Weinberg, R. Lower crustal flow in continental extension – a process for mechanical recycling of the crust during orogenic collapse? 16th Australian Geological Convention, Adelaide, 1-5 July, Geological Society of Australia Abstracts, **67**, 170, 2002.
  372. Hobbs, B., Zhang, Y., Ord, A., Freij-Ayoub, R., Walshe, J. and Roberts, P. Pore fluids, fracturing, alteration and mineralisation. Applied Structural Geology for Mineral Exploration and Mining International Symposium, 23-25 September 2002, Kalgoorlie, Western Australia. Australian Institute of Geoscientists, Bulletin 36. S. Vearncombe (Editor). pp. 85-86, 2002.
  373. Ord, A. and Hobbs, B.E. Modelling fluid flow and fractures. Saskatoon 2002. GAC-MAC Joint Annual Meeting, Saskatoon, Saskatchewan, Abstracts, 27, pp. 85-86, 2002.
  374. Ord, A. Modelling magma ascent. 1st International PFC Symposium, Numerical Modelling in Micromechanics via Particle Methods, Gelsenkirchen, Germany, 7-8 November 2002.
  375. Schaub, P.M., Ord, A., Hobbs, B.E., Annesley, I.R., Madore, C., Quirt, D., Fox, N.P.G., Thomas, D., and Portella, P. Some thermal considerations for the formation of unconformity related uranium

- deposits of the Athabasca basin, Canada, based on numerical models. Saskatoon 2002. GAC-MAC Joint Annual Meeting, Saskatoon, Saskatchewan, Abstracts, **27**, p. 105.
376. Zhang, Y., Hobbs, B.E., Ord, A., Walshe, J.L. and Zhao, C. Understanding thermal structures relevant to gold mineralisation in the Witwatersrand basin: A numerical modelling approach. 16th Australian Geological Convention, Adelaide, 1-5 July, Geological Society of Australia Abstracts, **67**, 302, 2002.
  377. Evans, K.A. and Ord, A. Effects of fluid flow rate variation on fault-related mineralisation style. Reddy, S.M., Fitzsimons, I.C.W. & Collins, A.S. (Editors). SGTSG Field Meeting, Kalbarri, 22-26 September 2003. Geological Society of Australia Abstracts. **72**, p 94, 2003.
  378. Ord, A. The Athabasca and Witwatersrand Mineralising Systems. Proceedings of an International Conference on Uranium Geochemistry. Nancy, 13-16 April 2003. M. Cuney (Editor). p. 271, 2003.
  379. Ord, A., Walters, N. and Hobbs, B.E. Fault (and shear zone) valve pumping revisited. Reddy, S.M., Fitzsimons, I.C.W. & Collins, A.S. (Editors). SGTSG Field Meeting, Kalbarri, 22-26 September 2003. Geological Society of Australia Abstracts. **72**, p 97, 2003.
  380. Schaub, P., Ord, A. and German, G. Scenario testing of fluid-flow and deformation during mineralisation: from simple to complex geometries. Reddy, S.M., Fitzsimons, I.C.W. & Collins, A.S. (Editors). SGTSG Field Meeting, Kalbarri, 22-26 September 2003. Geological Society of Australia Abstracts. **72**, p 95, 2003.
  381. Zhang, Y., Ord, A., Hobbs, B.E., Roberts, P.A., Lin, G., Wang, Y. and McLellan, J.G. Modelling of rock deformation behaviours in crust: brittle failure versus plastic flow. Reddy, S.M., Fitzsimons, I.C.W. & Collins, A.S. (Editors). SGTSG Field Meeting, Kalbarri, 22-26 September 2003. Geological Society of Australia Abstracts. **72**, p 106, 2003.
  382. Hobbs, B.E., Ord, A. and Regenauer-Lieb, K. Fluid reservoirs in the crust, seismic activity and mechanical coupling between the upper and lower crust. The Second International Symposium on Slip and Flow Processes in and below the Seismogenic Region, Japan, 10-14 March 2004. Sanjo Kaikan, The University of Tokyo.
  383. Hobbs, B., Regenauer-Lieb, K. and Ord, A. Thermodynamics of shear zone development in coupled thermal fluid-mechanical chemical systems. In: Proceedings, The 2nd KAGI21 International Symposium, Beppu, 1-4 November, 2004. pp. 12-14.
  384. Hobbs, B.E., Ord, A., Muhlhaus, H-B. and Zhang, Y. Scale invariance of folding instabilities. Instabilities across Scales Conference, Cairns, 13-17 September 2004.
  385. Hobbs, B.E., Walshe, J.L., Ord, A., Zhang, Y. and Barnicoat, A. The Witwatersrand Mineralising System. Goldschmidt conference, Copenhagen Denmark, 5-11 June 2004.
  386. Jensen, L.A., Paterson, S.R., Hobbs, B.E., Ord, A. and Zhang, Y. Temperature as a first order control of elasto-viscous folding: implications for modelling and field studies. 32nd International Geological Congress, Florence Italy, 20-28 August 2004.
  387. Ord, A. Faulting, damage, and fluid flow. In: Dynamic Earth: Past, present and future, McPhie, J. and McGoldrick, P. (Editors). 17th Australian Geological Convention, Hobart, 8-13 February 2004. Geological Society of Australia Abstracts **73**, p. 107, 2004.
  388. Ord, A., Hobbs, B.E., Regenauer-Lieb, K. and Zhang, Y. *ab initio* emergent phenomena. Instabilities across Scales Conference, Cairns, 13-17 September 2004.
  389. Ord, A., Hobbs, B.E. and Regenauer-Lieb, K. Seismicity, damage, and fluid flow. Second International Symposium on Slip and Flow Processes in and below the Seismogenic Region, Japan, 10-14 March 2004. Sanjo Kaikan, The University of Tokyo.
  390. Ord, A., Schaub, P.M. and Alt-Epping, P. The Athabasca and Witwatersrand mineralising systems. In: Dynamic Earth: Past, present and future, McPhie, J. and McGoldrick, P. (Editors). 17th Australian Geological Convention, Hobart, 8-13 February 2004. Geological Society of Australia Abstracts **73**, p. 108, 2004.

391. Ord, A., Hobbs, B., Regenauer-Lieb, K., Boschetti, F., Zhang, Y. and Durrlemann, S. Emergent fracture systems: Numerical modeling with a particle flow code. In: Proceedings, The 2nd KAGI21 International Symposium, Beppu, 1-4 November, 2004. p. 69.
392. Potma, W., Schaub, P., Hobbs, B. and Ord, A. Mohr-Coulomb theory and numerical modeling: unraveling the Wallaby Au ore system. In: Dynamic Earth: Past, present and future, McPhie, J. and McGoldrick, P. (Editors). 17th Australian Geological Convention, Hobart, 8-13 February 2004. Geological Society of Australia Abstracts 73, p. 111, 2004.
393. Regenauer-Lieb, K., Hobbs, B.E. and Ord, A. On the thermodynamics of listric faults. Second International Symposium on Slip and Flow Processes in and below the Seismogenic Region, Japan, 10-14 March 2004. Sanjo Kaikan, The University of Tokyo.
394. Regenauer-Lieb, K., van der Lee, S., Yuen, D., Hobbs, B. and Ord, A. Initiation and evolution of subduction zones: the role of water. In: Proceedings, The 2nd KAGI21 International Symposium, Beppu, 1-4 November, 2004. pp. 63-64.
395. Regenauer-Lieb, K., Hobbs, B.E., Yuen, D.A., Ord, A., Zhang, Y. and Muhlhaus, H.B. From Point Defects to Plate Tectonic Faults. Instabilities across Scales Conference, Cairns, 13-17 September 2004.
396. Regenauer-Lieb, K., Ord, A., Zhang, Y., Sheldon, H.A. and Wijns, C. Science and modelling at all scales. Predictive Mineral Discovery Cooperative Research Centre - Extended abstracts from the June 2004 conference (Eds. Barnicoat AC & Korsch RJ), Geoscience Australia, Canberra, Australia, p.183-186, 2004.
397. Regenauer-Lieb, K., Walshe, J., Hobbs, B. E. & Ord, A. 2004. Are volatile mantle plumes important for the origin of giant ore bodies? *Geochimica et Cosmochimica Acta*, **68**, A774-A774.
398. Sheldon, H. and Ord, A. The role of convection in the formation of hydrothermal ore deposits. In: Dynamic Earth: Past, present and future, McPhie, J. and McGoldrick, P. (Editors). 17th Australian Geological Convention, Hobart, 8-13 February 2004. Geological Society of Australia Abstracts 73, p. 120, 2004.
399. Sorjonen-Ward, P., Ord, A., Kontinen, P., Alt-Epping, P., Zhang, Y. and Kuronen, U. Geological constraints and numerical simulations of the formation and deformation of the Outokumpu Cu-Co-Ni-Zn-Au deposits. In: Muhling, J., Goldfarb, R., Vielreicher, N., Bierlein, F., Stumpfl, E., Groves, D.I. and Kenworthy, S. (eds), SEG 2004: Predictive Mineral Discovery Under Cover, Extended Abstracts. Centre for Global Metallogeny, The University of Western Australia, Publication No. 33. pp. 195-198, 2004.
400. Walshe, J. L., Hobbs, B. E., Ord, A., Regenauer-Lieb, K., Barnicoat, A. C. & Hall, G. C. 2004. Hydrogen flux from the Earth's core, giant ore deposits and related phenomena through Earth history. *Geochimica et Cosmochimica Acta*, **68**, A777-A777, 2004.
401. Walshe, J.L., Ruiz, J., Chesley, J., Barnicoat, A.C., Phillips, G.M., Hobbs, B.E., Regenauer-Lieb, K. and Ord, A. Hydrogen flux from the Earth's core; origin of the Witwatersrand gold deposits and related phenomena through Earth history. In: Muhling, J., Goldfarb, R., Vielreicher, N., Bierlein, F., Stumpfl, E., Groves, D.I. and Kenworthy, S. (eds), SEG 2004: Predictive Mineral Discovery Under Cover, Extended Abstracts. Centre for Global Metallogeny, The University of Western Australia, Publication No. 33. pp. 195-198, 2004.
402. Zhang, Y., Lin, G., Wang, Y., Roberts, P. and Ord, A. Application of thermal-deformation–fluid flow modeling to mineral exploration in the Shui-Kou-Shan mineralisation district, Hunan Province, China. In: Dynamic Earth: Past, present and future, McPhie, J. and McGoldrick, P. (Editors). 17th Australian Geological Convention, Hobart, 8-13 February 2004. Geological Society of Australia Abstracts 73, p. 140, 2004.
403. Sheldon, H.A., Ord, A. and Alt-Epping, P. Numerical modelling of basins, seals, and mineralisation. Selwyn Symposium, Geological Society of Australia, Melbourne (unpublished). 2004.

404. Sheldon, H.A. and Ord, A. Questioning the fault valve model: An investigation of fluid flow and mixing in dilatant faults. Gordon Conference on Rock Deformation, Massachusetts, USA (unpublished). 2004.
405. Sheldon, H.A. and Ord, A. Coupled processes in faulted environments. Predictive Mineral Discovery Cooperative Research Centre - Extended abstracts from the June 2004 conference (Eds. Barnicoat AC & Korsch RJ), Geoscience Australia, Canberra, Australia, p.199-202, 2004.
406. Sheldon, H.A. and Ord, A. The role of convection in the formation of hydrothermal ore deposits. Dynamic Earth: Past, Present and Future (17th Australian Geological Convention) (Eds. McPhie J & McGoldrick P), Geological Society of Australia Abstracts v.73, p. 120, 2004.
407. Barnicoat, A.C., Sheldon, H.A. and Ord, A. Faulting in porous rocks: Resolving a paradox and exploration implications. STOMP: Structure, Tectonics and Ore Mineralization Processes, August 29 - September 2, Townsville, Australia. Abstract Volume, edited by Hancock et al. EGRU Contribution No. 64, p. 7, 2005.
408. Deckert, H., Gessner, K., Ord, A. and Hobbs, B.E. Spatial characterization of joint patterns using 3D-photogrammetry. STOMP: Structure, Tectonics and Ore Mineralization Processes, August 29 - September 2, Townsville, Australia. Abstract Volume, edited by Hancock et al. EGRU Contribution No. 64, p. 164, 2005.
409. Gessner, K., Kühn, M., Sheldon, H.A., Ord, A., Schaub, P.M., Potma, W., Hobbs, B.E., Zhang, Y., Zhao, C. and Roberts, P.A. Simulation of deformation, fluid flow, heat transfer, species transport, and chemical reactions in hydrothermal ore systems. European Geosciences Union General Assembly. Geophysical Research Abstracts, 7, 2005.
410. Hobbs, B., Regenauer-Lieb, K. and Ord, A. The thermodynamics of folding. IW BIDG 2005, 7th International Workshop on Bifurcation, Instabilities and Degradation in Geomechanics, June 13-16, 2005. Chania, Crete – Greece. p 77. <http://minelab.mred.tuc.gr/iwbidg2005>
411. Hobbs, B., Regenauer-Lieb, K. and Ord, A. The thermodynamics of folding. STOMP: Structure, Tectonics and Ore Mineralization Processes, August 29 - September 2, Townsville, Australia. Abstract Volume, edited by Hancock et al. EGRU Contribution No. 64, p. 63, 2005.
412. Hobbs, B.E., Walshe, J., Barnicoat, A., Ord, A., Hall, G. and Zhang, Y. The Witwatersrand mineralizing system. STOMP: Structure, Tectonics and Ore Mineralization Processes, August 29 - September 2, Townsville, Australia. Abstract Volume, edited by Hancock et al. EGRU Contribution No. 64, p. 64, 2005.
413. Murphy, B., Ord, A., Hobbs, B. and Willetts, G. Targeting stratiform Zn-Pb-Ag massive sulfide deposits in Ireland: coupled deformation/thermal transport/fluid flow modelling. STOMP: Structure, Tectonics and Ore Mineralization Processes, August 29 - September 2, Townsville, Australia. Abstract Volume, edited by Hancock et al. EGRU Contribution No. 64, p. 94, 2005.
414. Ord, A., Hobbs, B.E., Regenauer-Lieb, K., Zhao, C. and Zhang, Y. Localisation and emergent phenomena. IW BIDG 2005, 7th International Workshop on Bifurcation, Instabilities and Degradation in Geomechanics, June 13-16, 2005. Chania, Crete – Greece. p 36. <http://minelab.mred.tuc.gr/iwbidg2005>
415. Schaub, P., Ord, A., Annesley, I., Madore, C., Quirt, D., Thomas, D. and Portella, P. A comparison of the McArthur River and Cigar Lake unconformity-related uranium deposits, Saskatchewan, Canada: insight from deformation-fluid flow models. STOMP: Structure, Tectonics and Ore Mineralization Processes, August 29 - September 2, Townsville, Australia. Abstract Volume, edited by Hancock et al. EGRU Contribution No. 64, p. 121, 2005.
416. Sheldon, H. A., Barnicoat, A. C. and Ord, A. Faulting in porous rocks: Insights from numerical models based on critical state soil mechanics. STOMP: Structure, Tectonics and Ore Mineralization Processes, August 29 - September 2, Townsville, Australia. Abstract Volume, edited by Hancock et al. EGRU Contribution No. 64, p. 125, 2005.

417. Sheldon, H. A., Barnicoat, A. C. and Ord, A. Faults as pathways versus faults as seals: Contrasting behaviour of high and low porosity rocks. European Geosciences Union General Assembly. Geophysical Research Abstracts 7, 2005.
418. Sheldon, H. A. and Ord, A. Modelling fault nucleation, localisation and seismicity: A numerical challenge. Deformation Mechanisms, Rheology and Tectonics, p.195, 2005.
419. Ord, A., Hobbs, B.E., Regenauer-Lieb, K. and Zhang, Y. Buckets of cash from fractured rock. ANZIAM 2006: The 42nd Applied Mathematics Conference, Mansfield, Victoria, 5-9 February 2006. The 2006 ANZIAM Conference Abstracts, S.R. Clarke (Editor). p. 51, 2006.
420. Sheldon HA, Zhang Y, Blewett RS, Barnicoat AC & Ord A. Testing predictive exploration models for the Yilgarn by computer simulation. In: Predictive mineral discovery: Science at the sharp end (Ed. Barnicoat AC). pmd\**CRC* conference, Perth, April 2006.
421. Roberts, P.A., Gessner, K., Schaub, P.M., Ord, A., Sheldon, H.A., Regenauer-Lieb, K., Potma, W., Zhang, Y., Zhao, C., Hobbs, B.E., Elmer, F. and Cleverley, J. Simulating coupled processes in hydrothermal ore systems for predictive mineral discovery. EOS Transactions AGU, 87, Fall Meeting Supplement, Abstract T21C-0432. 2006.
422. Sheldon, H.A., Zhang, Y., Blewett, R.S., Barnicoat, A.C. and Ord, A., Testing predictive exploration models for the Yilgarn by computer simulation. Predictive Mineral Discovery Cooperative Research Centre - Extended abstracts from the April 2006 conference (eds. Barnicoat, A.C. and Korsch, R.J.), p. 105-108, Geoscience Australia, Canberra, Australia. 2006.
423. Ord, A., Hobbs, B.E., Hornby, P., Cleverley, J., Barnicoat, A. and Murphy, B., Coupled chemical-fluid flow modelling of the Irish Carboniferous Basin. *Geochimica et Cosmochimica Acta*, 70, A462, 2006.
424. Ord, A., Hobbs, B.E. and Regenauer-Lieb, K., Shear band emergence in granular materials? A numerical study. Gordon conference on Rock Deformation: Processes and Patterns, Big Sky, Montana, 3-8 September 2006.
425. Ord, A., Hobbs, B.E. and Regenauer-Lieb, K., Shear bands and fracture systems in granular materials – A numerical study. Tectonic Studies Group AGM Jan 3rd-6th, University of Glasgow, Programme and Abstracts, p. 38, 2007.
426. Bjork, T. and Ord, A., Shear zone formation in granular materials. A numerical study. Porosity and permeability development. GSA Specialist Group: Tectonics and Structural Geology - Deformation in the Desert, Alice Springs, 9-13 July 2007, 50, 2007.
427. Hobbs B.E., Ord A. and Regenauer-Lieb K., Non equilibrium thermodynamics and the coupling between deformation and metamorphism. GSA Specialist Group: Tectonics and Structural Geology - Deformation in the Desert, Alice Springs, 9-13 July 2007, 18, 2007.
428. Hobbs, B., Ord, A. and Regenauer-Lieb, K., 2007. Non-equilibrium thermodynamics of coupled systems. The 8th Asia-Pacific Complex Systems Conference. 2-5 July 2007. Complex'07 Handbook and Abstracts. p. 55. [www.complex07.org](http://www.complex07.org).
429. Mongrain, J.C. and Ord, A., Insights into the mechanisms of shallow dike intrusions through particle code modelling. EOS Trans. AGU, 88 (52), Fall Meet. Suppl, Abstract V11A-0358, 2007.
430. Ord, A., Hobbs, B.E. and Regenauer-Lieb, K. The emergence of patterned shear bands and fracture systems in granular materials – A numerical study. The 8th Asia-Pacific Complex Systems Conference. 2-5 July 2007. Complex'07 Handbook and Abstracts. p. 55. [www.complex07.org](http://www.complex07.org).
431. Ord, A., Hobbs, B.E. and Regenauer-Lieb, K. Non-equilibrium thermodynamics and the coupling between deformation and chemical reactions. AMSI/MASCOS Mini Symposium on Entropy Methods in Thermodynamics, 26-28 November 2007. [http://www.amsi.org.au/Entropy\\_Thermodynamics.php](http://www.amsi.org.au/Entropy_Thermodynamics.php)

432. Ord, A., Hobbs, B.E., Mikula, S., Malcolm, J and Sheldon, H.A. Veins and breccias. GSA Specialist Group: Tectonics and Structural Geology - Deformation in the Desert, Alice Springs, 9-13 July 2007, 49.
433. Ord, A. Hobbs, B., Mikula, S., Malcolm, J. and Sheldon, H. Veins and breccias. Breccia Symposium 2007, Breccias – Abstract Volume. Eds. Blenkinsop, T. and Duckworth, R. p. 24.
434. Ord, A., Hobbs, B.E., Hornby, P., Cleverley, J., Barnicoat, A. and Murphy, B. Coupled chemical-fluid flow modelling of the Irish Carboniferous Basin. In: Digging Deeper, C.J. Andrew et al (editors), Proceedings of the Ninth Biennial SGA Meeting, Dublin 2007, pp.1423-1426.
435. Regenauer-Lieb K., Hobbs B.E. and Ord A. Development of opposing nappe structures on the margins of the Amadeus Basin. GSA Specialist Group: Tectonics and Structural Geology - Deformation in the desert, Alice Springs, 9-13 July 2007, 67.
436. Regenauer-Lieb K., Poulet T., Siret D., Fousseis F., Morra G., Hobbs B.E., Ord A., Muhlhaus H. and Yuen D. First step towards a multiscale earth system. GSA Specialist Group: Tectonics and Structural Geology - Deformation in the desert, Alice Springs, 9-13 July 2007, 87.
437. Tordesillas, A., Ord, A. and Einav, I., DEM: an essential tool for thermo-micro-mechanical continuum theories of shear banding and comminution phenomena. Accepted for poster presentation at DEM '07, Brisbane, August 2007.
438. Metcalfe, G., Lester, D., Ord, A., Trefry, M. and Hobbs, B.E. Chemical and biological reactive transport in deforming porous media. In: The 10th Experimental Chaos Conference, ECC10 Abstract Booklet. Ed. G. Maimone. p. 115. www.experimentalchaosconference.org 2008.
439. Ord, A., Hobbs, B.E. and Mikula, S. Hydrothermal brecciation: particle modelling. In: Continuum and Distinct Element Numerical Modeling in Geo-Engineering - 2008 - Hart, Detournay & Cundall (eds.) Paper: 05-06 ©2008 Itasca Consulting Group, Inc., Minneapolis, ISBN 978-0-9767577-1-9
440. Ord, A. and Hobbs, B. Non-equilibrium thermodynamics and the coupling between deformation and metamorphism. The 33rd IGC, Oslo, 2008.
441. Sheldon H., Barnicoat, A., Ord, A., Cleverley, J., Potma, W., Regenauer-Lieb, K. Computer simulation of geological processes as a tool for mineral exploration. The 33rd IGC, Oslo, 2008.
442. Hobbs, B. E., and Ord, A. The non-linear mechanics of giant hydrothermal ore systems. 5<sup>th</sup> International Conference on Fractals and Dynamic Systems in Geoscience, Townsville, 12-15 August 2009.
443. Hobbs, B. E., and Ord, A. Development of crystallographic preferred orientations (CPO) using single slip mechanisms: Relationship to localisation and folding. Deformation Rheology and Tectonics, Liverpool, 6-12 September 2009.
444. Hobbs, B. E., and Ord, A. The influence of strain softening and strain-rate softening on folding and boudinage. Deformation Rheology and Tectonics, Liverpool, 6-12 September 2009.
445. Hobbs, B. E., Ord, A., and Blenkinsop, T. The fractal geometry of ore bodies. 5<sup>th</sup> International Conference on Fractals and Dynamic Systems in Geoscience, Townsville, 12-15 August 2009.
446. Ord, A. Gold in, gold out: Mathematics for exploration and mining. Pacific Rim Mathematical Association (PRIMA), Sydney, 2009
447. Ord, A., and Hobbs, B. E. The mechanical origin of the fractal geometry of joints. 5th International Conference on Fractals and Dynamic Systems in Geoscience, Townsville, 12-15 August 2009.
448. Ord, A., Hobbs, B., Tordesillas, A. and Graham, C. The development of rock fracture patterns. Deformation Rheology and Tectonics, Liverpool, 6-12 September 2009.
449. Gorczyk, W., Hobbs, B., Ord, A., Gessner, K. and Gerya, T. Lithospheric lateral heterogeneity in the sub-continental lithospheric mantle - effects and consequences. Abstract presented at 5th International Archaean conference, Perth. 2010.

450. Gorczyk, W., Hobbs, B., Ord, A. and Gerya, T. Lithospheric architecture, instabilities, metasomatism and melting. GSA Structural Geology and Tectonics Specialist Group (SGTSG) meeting, Port Macquarie, 31 January – 6 February 2010.
451. Hobbs, B.E. and Ord, A. A classification of foliations. GSA Structural Geology and Tectonics Specialist Group (SGTSG) meeting, Port Macquarie, 31 January – 6 February 2010.
452. Ord, A. and Hobbs, B.E. The origin of joint patterns in deformed rocks. GSA Structural Geology and Tectonics Specialist Group (SGTSG) meeting, Port Macquarie, 31 January – 6 February 2010.
453. Hobbs, B. and Ord, A. A multi-scale approach to giant hydrothermal mineral systems. Abstract presented at Tim Bell conference, Granada, Spain, May 2011.
454. Ord, A. and Hobbs, B. Localised folding and axial plane structures. Abstract presented at Tim Bell conference, Granada, Spain, May 2011.
455. Ord, A. and Hobbs, B. Localised folding and axial plane structures. Geophysical Research Abstracts, Vol. 13, EGU2011. EGU General Assembly 2011.
456. Ord, A., Hobbs, B. and Lester, D. The development of redox-pH-fronts in hydrothermal systems. Geophysical Research Abstracts, Vol. 13, EGU2011. EGU General Assembly 2011.
457. Hobbs, B.E. and Ord, A. Oscillating and chaotic entropy production rates (EPR) in chemical systems. Maximum Entropy Production 2011. Canberra, 12-15 September 2011.
458. Ord, A., Hobbs, B. and Regenauer-Lieb, K. Maximum entropy production rate (MEPR): Conditions for existence and non-existence. Maximum Entropy Production 2011. Canberra, 12-15 September 2011.
459. Hobbs, B. and Ord, A. Plastic collapse localisation in simple shearing deformations. American Geophysical Union (AGU) meeting 2 December to 9 December 2011. Abstract presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec., 2011.
460. Ord, A. and Hobbs, B. Strain-rate dependence of power-law creep and folding of rocks. Abstract MR24A-04 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec., 2011.
461. Hobbs, B. and Ord, A. Localised folding. Meeting of the Specialist Group in Tectonics and Structural Geology of the Geological Society of Australia (SGTSG, GSA), Waratah Bay, Victoria. January 2012.
462. Ord, A., Hobbs, B. and Lester, D. Brecciation in mineralising systems. Meeting of the Specialist Group in Tectonics and Structural Geology of the Geological Society of Australia (SGTSG, GSA), Waratah Bay, Victoria. January 2012.
463. Hobbs, B. and Ord, A. Localised folding. Rock Deformation Conference, London 30/31 May 2012.
464. Ord, A., Hobbs, B., Gorczyk, W., Gessner, K. and Lester, d. Multiscale dynamics of ore body formation. IUGG Math Geophysics conference, Edinburgh 17-22 June 2012.
465. Ord, A., Hobbs, B. and Lester, D. Brecciation in mineralising systems. 34th International Geological Congress (IGC), Brisbane, 5-10 August 2012.
466. Ord, A. Fluid flow modelling in tectonic wedges. 34th International Geological Congress (IGC), Brisbane, 5-10 August 2012.
467. Gonzalez, C.M., Gorczyk, W., Connolly, J.A.D., Gerya, T.V., Hobbs, B.E., and Ord, A. Towards a better understanding on the origin of CO<sub>2</sub> fluids in mineralisation and metasomatism in the mantle lithosphere. Geophysical Research Abstracts, 15, EGU General Assembly 2013.
468. Liu, Q., Ord, A. and Hobbs, B.E. Non-linear interactions of dynamic reactive interfaces in hydrothermal porous media. Geophysical Research Abstracts, 15, EGU General Assembly 2013
469. Ord, A. and Hobbs, B.E. Critical mineralising plumbing systems - analysis using wavelets. Geophysical Research Abstracts, 15, EGU General Assembly 2013.

470. Gonzalez, C.M., Gorczyk, W., Connolly, J.A.D., Gerya, T.V., Hobbs, B.E., and Ord, A. Implementation of CO<sub>2</sub> devolatilization into a coupled petrological-thermomechanical numerical modelling code. FUTORES Conference 2013. Future Understanding of Tectonics, Ores, Resources, Environment and Sustainability. Abstract Volume EGRU Contribution 68. 2-5 June 2013, Townsville, Queensland, Australia. Page 56.
471. Hobbs, B.E. and Ord, A. The DNA of hydrothermal systems. FUTORES Conference 2013. Future Understanding of Tectonics, Ores, Resources, Environment and Sustainability. Abstract Volume EGRU Contribution 68. 2-5 June 2013, Townsville, Queensland, Australia. Page 65.
472. Ord, A. and Hobbs, B.E. Critical mineralising plumbing systems - analysis using wavelets. FUTORES Conference 2013. Future Understanding of Tectonics, Ores, Resources, Environment and Sustainability. Abstract Volume EGRU Contribution 68. 2-5 June 2013, Townsville, Queensland, Australia. Page 66.
473. Hobbs, B.E. and Ord, A. The DNA of hydrothermal systems. 6th International Conference on Fractals and Dynamic Systems in Geoscience. Perugia (Italy). 30 September - 2 October 2013. p. 36.
474. Ord, A. and Hobbs, B.E. Criticality, mechanics, and mineralising plumbing systems. 6th International Conference on Fractals and Dynamic Systems in Geoscience. Perugia (Italy). 30 September - 2 October 2013. p. 56.
475. Hobbs, B., Ord, A. Entropy, entropy production and multifractals. MAXENT 2013, 33rd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering. Canberra, Australia. 15-20 December, 2013
476. Ord, A., Hobbs, B. Critical behaviour, multifractals, entropy and entropy production. MAXENT 2013, , 33rd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering. Canberra, Australia. 15-20 December, 2013
477. Hobbs, B.E., Ord, A., Munro, M. and Firth, S. Hydrothermal systems as open flow controlled chemical reactors: Non-equilibrium, breccias, veins, multifractals and wavelets. In: Fraser, G., Forster, M., & McClusky, S. (eds). SGTSG in the Snowies. Biennial Conference of the Specialist Group for Tectonics and Structural Geology, February 2014. Geological Society of Australia Abstracts No. 109, p. 46.
478. Ord, A. Designer footprints for the future. Keynote address. 3rd Young Earth Scientists Congress, Dar es Salaam, Tanzania, 11-14 August 2014.
479. Ord, A., Hobbs, B.E., Lester, D.R. and Niven, R.K. Hydrothermal mineralising systems as non-equilibrium, chaotic, breccia-filled chemical reactors. Chemeca 2014/1463. Chemeca 14 - Processing Excellence; Powering Our Future. 28 September - 1 October 2014.
480. Seybold, L., Kruhl, J.H., Heuss, S. and Ord, A. Large-scale fluid flow and fault zone activity: repeated silicification and fragmentation along the Fountain Range Fault (Mt. Isa Inlier, Australia). 15th Symposium on Tectonics, Structural Geology and Geology of Crystalline Rocks, Potsdam, Germany, 31 March - 4 April 2014.
481. Yilmaz, T.I., Prosser, G., Liotta, D., Kruhl, J.H., Gilg, H.A. and Ord, A. Quartz formation during hydrothermal fluid flow and repeated fragmentation: fluidization, grain growth and deformation structures in the Pfahl shear zone (Germany) and the Rusey fault zone (UK). 15th Symposium on Tectonics, Structural Geology and Geology of Crystalline Rocks, Potsdam, Germany, 31 March - 4 April 2014.
482. Hobbs, B. Hydrothermal mineralising systems as critical systems. Geophysical Research Abstracts, 17, EGU General Assembly 2015.
483. Hossain, S., Hammes, D.M., Seybold, L., Ord, A., Blenkinsop, T., Peternell, M., Heuss, S., Kruhl, J.H. Quantification of fragmentation structures in a silicified fault zone: the Fountain Range Fault (Mt. Isa Inlier, Australia). 17th Annual Conference of the International Association for Mathematical Geosciences, Freiberg/Germany, September 2015.

484. Munro, M., Bowden, D., Ord, A. and Hobbs, B. 3D inclusion trail geometry determination within individual porphyroblasts using reflected light optical microscopy of oriented blocks. *Geophysical Research Abstracts*, 17, EGU General Assembly 2015.
485. Munro, M., Ord, A. and Hobbs, B. Multifractal spatial organisation in hydrothermal gold systems of the Archaean Yilgarn craton, Western Australia. *Geophysical Research Abstracts*, 17, EGU General Assembly 2015.
486. Ord, A., Seybold, L., Hobbs, B.E., Kruhl, J.H., Heuss, S. and Blenkinsop, T. Coupled fragmentation and silicification processes in fault zones. *Geophysical Research Abstracts*, 17, EGU General Assembly 2015.
487. Seybold, L., Heuss, S., Ord, A. and Kruhl, J.H. Repeated silicification and fragmentation during hydrothermal fault-zone activity: the Fountain Range Fault (Mt. Isa Inlier, Australia). *GeoFrankfurt, International Conference on "Earth System Dynamics"*, September 2014.
488. Seybold, L., Blenkinsop, T., Heuss, S., Ord, A. and Kruhl, J.H. Complex fragmentation and silicification structures in fault zones: quartz mineralization and repeated fragmentation along the Fountain Range Fault (Mt. Isa Inlier, Australia). *Geophysical Research Abstracts*, 17, EGU General Assembly 2015.
489. Ord, A. Coupled fluid flow, mineral reactions and deformation in hydrothermal mineralising systems. 2015 TIGeR Conference, Key issues in fluid-rock interaction: from the nano to the macroscale. 23-25 September 2015.
490. Ord, A., Hobbs, B. and Munro, M. Quantification of fabrics using wavelet analysis: The development of multifractal fabrics. *Tectonic Studies Group Annual Meeting, Edinburgh*, January 2015.
491. Ord, A. Representing the kinematics of deforming rocks, in: Siegel, C., Verdel, C. and Rosenbaum, G. (eds.), *Riding the Wave: GSA Specialist Group in Tectonics and Structural Geology Conference*, November 2015. *Geological Society of Australia Abstract No. 113*, p. 111.
492. Wang, X., Munro, M. and Ord, A. Understanding vein-hosted mineralization at the Sunrise Dam gold deposit through coupled mechanical-fluid flow modelling, in: Siegel, C., Verdel, C. and Rosenbaum, G. (eds.), *Riding the Wave: GSA Specialist Group in Tectonics and Structural Geology Conference*, November 2015. *Geological Society of Australia Abstract No. 113*, p. 112.
493. Ord, A. and Hill, K. Geodynamic modelling of anticlines in the Papua New Guinea fold belt. *The Eighth International Geofluids Conference*. June 22-27, Wuhan, China, 2016.
494. Ord, A., Hobbs, B.E., Munro, M., Lester, D.R. and Niven, R.K. Hydrothermal mineralising systems as non-equilibrium, chaotic breccia-filled chemical reactors. *The Eighth International Geofluids Conference*. June 22-27, Wuhan, China, 2016.
495. Boettcher, M., Ord, A., Hobbs, B. Seismic Cycles and Recurrence Plots from Gofar Transform Fault, East Pacific Rise. In: Pearce, MA (compiler) 2017, *SGTSG Denmark 2017 Abstract Volume, Biennial Meeting of the Specialist Group in Tectonics and Structural Geology, Geological Society of Australia*, 8–12 November 2017, Denmark, Western Australia: Geological Survey of Western Australia, Record 2017/17, 133p. page 29.
496. Guo, W., Lu, Y., Smith, R., Ord, A., Hobbs, B. Fluid flow through the Fortescue Group Volcanics, Pilbara, Western Australia. In: Pearce, MA (compiler) 2017, *SGTSG Denmark 2017 Abstract Volume, Biennial Meeting of the Specialist Group in Tectonics and Structural Geology, Geological Society of Australia*, 8–12 November 2017, Denmark, Western Australia: Geological Survey of Western Australia, Record 2017/17, 133p. page 111.
497. Hobbs, B. and Ord, A. Hydrothermal mineral systems as nonlinear dynamical systems: Implications for exploration and ore body modelling. *18th International Association for Mathematical Geosciences Conference*, 2-9 September 2017, Fremantle, Perth, WA. 2017.

498. Hobbs, B. and Ord, A. Episodic behaviour of a cooling Earth. 2017 TIGeR Conference, Timescales of Geological Processes, 13-15 September 2017. Curtin University. Abstracts, page 54.
499. Hobbs, B. E., Oberst, S., Niven, R., and Ord, A. Gold17@Rotorua, 21-23 February. Australian Institute of Geoscientists, Extended Abstracts, Bulletin No. 63-2017, 2017.
500. Hobbs, B., Ord, A., Munro, M., Boettcher, M. Episodic tectonic behaviour from crystal-plasticity to seismicity. In: Pearce, MA (compiler) 2017, SGTSG Denmark 2017 Abstract Volume, Biennial Meeting of the Specialist Group in Tectonics and Structural Geology, Geological Society of Australia, 8–12 November 2017, Denmark, Western Australia: Geological Survey of Western Australia, Record 2017/17, 133p. page 89.
501. Kruhl, J.H., Yilmaz, T.I., Blenkinsop, T., Heuss-Assbichler, S., Seybold, L., Ord, A. and Duschl, F. Fragmentation, dissolution-precipitation and fluid-solid flow – the structure life of hydrothermal fault zones. In: Pearce, MA (compiler) 2017, SGTSG Denmark 2017 Abstract Volume, Biennial Meeting of the Specialist Group in Tectonics and Structural Geology, Geological Society of Australia, 8–12 November 2017, Denmark, Western Australia: Geological Survey of Western Australia, Record 2017/17, 133p. page 115.
502. Munro, M., Gessner, K., Ord, A. and Hobbs, B. Multifractal topography: a case study of structurally-controlled landforms across the Menderes Massif, western Turkey. In: Pearce, MA (compiler) 2017, SGTSG Denmark 2017 Abstract Volume, Biennial Meeting of the Specialist Group in Tectonics and Structural Geology, Geological Society of Australia, 8–12 November 2017, Denmark, Western Australia: Geological Survey of Western Australia, Record 2017/17, 133p. page 118.
503. Oberst, S., Niven, R., Ord, A., Hobbs, B. and Lester, D. Application of recurrence plots to orebody exploration data. In: Wyche, S and Witt, WK (eds), TARGET 2017, Perth, Australia: abstracts: Geological Survey of Western Australia, Record 2017/6, 166p, 114-116, 2017.
504. Ord, A. Data driven geological models: How to comprehend big data. Smart Use of Technology and Data. Australian Institute of Geoscientist Victoria. Macedon, Victoria, 13 October 2017.
505. Ord, Quantification of structural geology. In: Pearce, MA (compiler) 2017, SGTSG Denmark 2017 Abstract Volume, Biennial Meeting of the Specialist Group in Tectonics and Structural Geology, Geological Society of Australia, 8–12 November 2017, Denmark, Western Australia: Geological Survey of Western Australia, Record 2017/17, 133p. page 90.
506. Ord, A. Grain size, dislocation density and dissipation. Celebrating 50 years of Rock Deformation at RSES, Canberra. 16 November 2017.
507. Ord, A. and Hobbs, B. The time evolution of orogenic gold systems: Deformation, mineral reactions and chaos. 2017 TIGeR Conference, Timescales of Geological Processes, 13-15 September 2017. Curtin University. Abstracts, page 64.
508. Ord, A., Hobbs, B., Munro, M., Oberst, S. and Niven, R. Data-driven geological models: how to comprehend big data. 18th International Association for Mathematical Geosciences Conference, 2-9 September 2017, Fremantle, Perth, WA. 2017.
509. Ord, A., Oberst, S., Niven, R., and Hobbs, B. What do we do with all these data? Ore exploration using modern technology. Gold17@Rotorua, 21-23 February. Australian Institute of Geoscientists, Extended Abstracts, Bulletin No. 63-2017, 2017.
510. Toy, V., Ord, A., Gessner, K., Thebaud, N., Delle Piane, C., Wing, R., Sutherland, R., Townend, J., Menzies, C., DFDP-1 and DFDP-2 Science Teams. Structural and chemical correlations by multifractal methods in Alpine Fault Drilling Project (DFDP) samples. In: Pearce, MA (compiler) 2017, SGTSG Denmark 2017 Abstract Volume, Biennial Meeting of the Specialist Group in Tectonics and Structural Geology, Geological Society of Australia, 8–12 November 2017, Denmark, Western Australia: Geological Survey of Western Australia, Record 2017/17, 133p. page 33.
511. Hobbs, B. and Ord, A. Complex systems thinking and mineral systems. Australian Geoscience Council Convention, Big Issues and Ideas in Geoscience, 14-18 October 2018.

512. Hobbs, B., Ord, A., Ulrich, S. and Schulman, K. Metamorphic reactions and the mechanics of compositional layering and lineation formation. 2018 TIGeR Conference, Coupling between Metamorphism and Deformation, 12-14 September 2018. Curtin University.
513. Ord, A. Data, patterns, dynamics, prediction. Machine Learning in Solid Earth Geoscience. Santa Fe, New Mexico, 2018.
514. Ord, A. and Hobbs, B. Forecasting in mineral systems. Australian Geoscience Council Convention, Big Issues and Ideas in Geoscience, 14-18 October 2018.
515. Ord, A., Hobbs, B., Ulrich, S. and Schulman, K. The influence of metamorphic reactions on localisation in deforming rocks. 2018 TIGeR Conference, Coupling between Metamorphism and Deformation, 12-14 September 2018. Curtin University.
516. Hobbs, B., Ord, A., Ulrich, S. and Schulman, K. The influence of metamorphic reactions on localisation in deforming rocks. 2019 TIGeR Conference, Pathways towards equilibrium in geological systems, 11-13 September 2019. Curtin University.
517. Hobbs, B., Ord, A., Ulrich, S. and Schulmann, K. The influence of metamorphic reactions on localisation in deforming rocks. In: Glorie, S., Wise, T. and Dutch, R. SGTSG and SGSEG 2019 abstracts: biennial meeting of the Specialist Group for Tectonics and Structural Geology and the Specialist Group in Solid Earth Geophysics, Convergence on the Coast, 18–22 November 2019, Port Lincoln, South Australia, Report Book 2019/00019. Department for Energy and Mining, South Australia, Adelaide. page 38. 2019.
518. Ord, A. and Hobbs, B. A nonlinear theory of structures in layered intrusions. 2019 TIGeR Conference, Pathways towards equilibrium in geological systems, 11-13 September 2019. Curtin University.
519. Ord, A. and Hobbs, B. A nonlinear theory of structures in layered intrusions. In: Glorie, S., Wise, T. and Dutch, R. SGTSG and SGSEG 2019 abstracts: biennial meeting of the Specialist Group for Tectonics and Structural Geology and the Specialist Group in Solid Earth Geophysics, Convergence on the Coast, 18–22 November 2019, Port Lincoln, South Australia, Report Book 2019/00019. Department for Energy and Mining, South Australia, Adelaide. page 62. 2019.
520. Ord, A. Nonlinear systems in structural geology - rocks, patterns, dynamics and prediction. TecTask Workshop, Structural Geology in the 21st Century, IIT Kharagpur, 26-28 February 2020.
521. Ord, A., Hobbs, B., Ulrich, S., Schulmann, K. Stress-strain curves for mixtures of minerals and grain size distributions. 36th International Geological Convention, Delhi, 3-8 March 2020.
522. Ord, A., Hobbs, B. Hydrothermal mineralising systems as nonlinear chemical reactors. 36th International Geological Convention, Delhi, 3-8 March 2020.
523. Ord, A. Will Rule 30 help me find gold? Wolfram Virtual Technology Conference, 6-9 October 2020.
524. Hobbs, B., Ord, A. Are giant ore deposits rogue waves or dragon kings? Core to Cosmos. Australian Earth Science Convention, 9-12 February 2021. Virtual.
525. Ord, A., Hobbs, B. A view of orogenic gold deposits as nonlinear systems: Nonlinear analysis of data. Core to Cosmos. Australian Earth Science Convention, 9-12 February 2021. Virtual.
526. Ord, A. Probabilities and Processes. Wolfram Virtual Technology Conference, 12-15 October 2021

*c) External Reports*

527. Ord, A. The geologic mapping of Yellow Craig, East Lothian, Unpub. B.Sc (Hons) thesis, Univ. of Edinburgh, 30 pp, 1976.
528. Christie, J.M., Ord, A. and Wegner, M.W. Microstructures of mylonitic rocks from Coyote Mountain, Borrego Springs, California, a final report. US Geological Survey Contract Report, UCLA No. PO 15877, 31 pp. 1978. Unpublished report.

529. Christie, J.M. and Ord, A. Microstructural study of deformed synthetic quartz crystals, a preliminary report, US Geological Survey Contract Report, No. PO 60202, 11 pp. 1979. Unpublished report.
530. Ord, A. Microstructural study of deformed synthetic quartz crystals. US Geological Survey Contract Report, 30 pp. 1980. Unpublished report.
531. Ord, A. Determination of flow stress from microstructures of mylonitic rocks. Unpub. Ph.D. thesis, Univ. of California at Los Angeles, 225 pp, 1981.
532. Ord, A. Final microstructural data on quartz crystals, US Geological Survey Contract Report, 50 pp, 1981. Unpublished report.
533. Ord, A. Automatic digitizing of fragment shape and fragment size distribution: image processing system. Preliminary report, ICI fragmentation project, 22 pp. 1987. Unpublished report.
534. Ord, A. Automatic digitizing of fragment shape and fragment size distribution image processing system. Final report, ICI fragmentation project, 85 pp, 1988. Unpublished report.
535. Ord, A. Real-time image analysis system for improving rock fragment size and shape control. National Energy Research, Development and Demonstration Council. End of Grant Report. Project 888 348. 39 pp., 1992.

*d) Internal Reports*

536. Power, W.L., Hobbs, B.E. and Ord, A. Computer modelling of structural and related controls on ore deposits, CSIRO Division of Geomechanics, Melbourne, Australia. Internal Report (confidential) New Series No. 10, 39 pp., 1989.
537. Power, W.L., Hobbs, B.E. and Ord, A. Computer modelling of structural and related controls on ore deposits. CSIRO Division of Geomechanics, Melbourne, Australia. Internal Report (confidential) New series No. 10A, 9 pp., 1990.
538. Hobbs, B.E., Ord, A. and Zhang, Y. Computer modelling of the Palm Valley anticline and its hydrocarbon potential. CSIRO Internal Report (New Series) No. 68, 64 pp. plus Appendix B Output from PALM\* Computer Runs, 1991.
539. Ord, A., Leisemann, B. and Cheung, L. Determination of oversize using SIROSIZE, a prototype on-line rock fragment sizing system, at ALCOA's Jarrahdale mine. CSIRO Internal Report (New Series) No. 84, 8 pp., 1991.
540. Power, W.L., Hobbs, B.E. and Ord, A. Computer modelling of structural and related controls on ore deposits. CSIRO Division of Geomechanics, Melbourne, Australia. Internal Report (confidential) New Series No. 76, June 1991.
541. Cheung, L., Leisemann, B. and Ord, A. Report on laboratory test of SIROSIZE, CSIRO Internal Report (New Series) No. 115, 50 pp., 1992.
542. Cheung, L., Le Blanc, D., Ord, A. and Leisemann, B. Determination of fragment size using SIROSIZE, a prototype on-line rock fragment sizing system at Western Quarries Toodyay Quarry. CSIRO Internal Report (New Series) NO. 114, 76 pp., 1992/1993
543. Ord, A., Cheung, C. and Leisemann, B. Report to the Centre for Mining Technology and Equipment on Rock Characterisation – Laser Scanning. CSIRO Internal Report (New Series) No. 148, 75 pp., 1992.
544. Cheung, L., Ord, A., Le Blanc, D. and Leisemann, B. Determination of fragment size distribution at BHP Iron Ore Mt. Whaleback, Mt. Newman, using SIROSIZE, a prototype on-line rock fragment sizing system. CSIRO Internal Report (New Series) No. 164, 70 pp., 1992.
545. Ord, A., Leisemann, B., Cheung, L. and Le Blanc, D. SIROSIZE Users' Manual. CSIRO Internal Report (New Series) No. 117, 50 pp., 1992.

546. Cheung, L., Ord, A., LeBlanc, and Leisemann, B. SIROSIZE User's Guide Version 2.5 Beta Release 2. CSIRO Internal Report (New Series) No. 169, 67 pp., 1993.
547. IMPADS Final Report. CSIRO Division of Exploration and Mining, CSIRO Division of Information Technology. Report for Generic Technology Grant Agreements No. 16031 and 16041. Confidential. 1995.
548. Ord, A. Geodynamic concepts of mineralisation. CSIRO Exploration and Mining Report 201C (confidential), 70 pp., 1995.
549. Ord, A. Geodynamics of Crustal Deformation, 2 volumes. Third year report on AGCRC Project No. 3013CO. AGCRC report no. R60. CSIRO Exploration and Mining Report 340F. 1997.
550. Ord, A., Hobbs, B., Zhang, Y. and Walshe, J. Witwatersrand Modelling Study. Monthly Progress Report Number One. CSIRO Exploration and Mining Report 446C (confidential), 37 pp., 1997.
551. Ord, A., Hobbs, B., Zhang, Y. and Walshe, J. Witwatersrand Modelling Study. Monthly Progress Report Number Two. CSIRO Exploration and Mining Report 456C (confidential), 37 pp., 1997.
552. Walshe, J.L., Hobbs, B.E., Ord, A., Upton, P., Ryan, C. and Manning, G. Hydrothermal Systems, Giant Ore Deposits and A New Paradigm for Predictive Mineral Exploration – a Discussion Paper, 133 pp., 1997.
553. Ord, A. Hobbs, B., Zhang, Y. and Walshe, J. Witwatersrand Modelling Study. Report on Module I. CSIRO Exploration and Mining Report 464C (confidential), 35 pp., 1998.
554. Ord, A., Hobbs, B., Zhang, Y. and Walshe, J. Witwatersrand Modelling Study. Report on Module II. CSIRO Exploration and Mining Report 521C (confidential), 28 pp., 1998.
555. Walshe, J., Hobbs, B., Ord, A. and Zhang, Y. Witwatersrand Modelling Study. Report on Module III. CSIRO Exploration and Mining Report 575C (confidential), 162 pp., 1999.
556. Hobbs, B.E., Walshe, J., Ord, A. and Zhang, Y. Witwatersrand Modelling Study. Report of Module IV. CSIRO Exploration and Mining Report 625C (confidential) 250 pp., 2000.
557. Ord, A., Hobbs, B.E, Willetts, G.P. and Zhao, C. Fluid Flow Modelling and Evaluation Exploration Models Pertaining to the Irish Carboniferous Basin Project. Exploration and Mining Report 760C confidential, 50pp., 2000.
558. Schaub, P., Alt-Epping, P., Ord, A., Hobbs, B., Zhao, C., Gow, P.,. Numerical modelling of unconformity-related uranium deposits in the Eastern Athabasca Basin, Saskatchewan: Final Report. CSIRO Exploration and Mining Confidential Report 1024R, 97pp, 2002.
559. Ord, A., Sorjonen-Ward, P., Zhang, Y. & Alt-Epping, P. Outokumpu Mineralising System – Executive Summary. Final Report for the GEOMEX board. CSIRO Exploration and Mining Confidential Report 1133C, 46pp, 2003.
560. Zhang, Y., Ge Lin, Wang, Y.J., Ord, A. & Roberts, P.A. 2003. Application of Coupled Quantitative Computational Technology to Mineral Exploration in the Shui-Kou-Shan Mineralisation District, Hunan Province, China. Final Technical Report to DEST. CSIRO Exploration and Mining Report 1042C, 30pp, 2003.
561. Ord, A. and Kruhl, J. The quantification of hydrothermal mineralising systems. Final report for Go8/DAAD project. 2016.

*e) Edited Volumes*

562. Geological Society of Australia Abstracts 19, International Conference on Deformation of Crustal Rocks, Mt. Buffalo, Australia, 2-6 February 1987, 128 pp.
563. Deformation of Crustal Rocks, Tectonophysics (Special Issue), 158, 1989, 336 pp.
564. Localisation of Deformation in Rocks and Metals, Pure and Applied Geophysics (Special Issue), 137, 1991, 487 pp.

565. Deformation Processes in the Earth's Crust, Tectonophysics (Special Issue), 335, 2001, 228 pp.
566. Patterns in our planet: applications of multi-scale non-equilibrium thermodynamics to Earth-system science. Ord, A., Hunt, G.W. and Hobbs, B.E., Editors (Theme Issue) Phil. Trans. R. Soc. A, 368, 2010, 300 pp.

*f) Books*

567. Zhao, C., Hobbs, B.E. and Ord, A., 2008. Convective and Advective Heat Transfer in Geological Systems. Advances in Geophysical and Environmental Mechanics and Mathematics. Series Editor: K. Hutter. Springer-Verlag, Berlin. 229 pp.
568. Zhao, C., Hobbs, B.E. and Ord, A., 2009. Fundamentals of Computational Geoscience: Numerical Methods and Algorithms. Lecture Notes in Earth Sciences. Eds. J. Reitner, M. H. Trauth, K. Stuwe, and D. Yuen. Springer-Verlag, Berlin. 241 pp.
569. Hobbs, B.E. and Ord, A., 2015. Structural Geology: The Mechanics of Deforming Metamorphic Rocks. Elsevier Inc., Netherlands. 665 pp.