

Contents

GESSNER, K., BLENKINSOP, T. & SORJONEN-WARD, P. Characterization of ore-forming systems – advances and challenges	1
Advanced microscale geochemical detection and characterization methods	
PEARCE, M. A., GODEL, B. M., FISHER, L. A., SCHONEVELD, L. E., CLEVERLEY, J. S., OLIVER, N. H. S. & NUGUS, M. Microscale data to macroscale processes: a review of microcharacterization applied to mineral systems	7
Development of more rigorous 3D Earth models	
WELLMANN, J. F., DE LA VARGA, M., MURDIE, R. E., GESSNER, K. & JESSELL, M. Uncertainty estimation for a geological model of the Sandstone greenstone belt, Western Australia – insights from integrated geological and geophysical inversion in a Bayesian inference framework	41
SCHETSELAAR, E., BELLEFLEUR, G., CRAVEN, J., ROOTS, E., CHERAGHI, S., SHAMSIPOUR, P., CATÉ, A., MERCIER-LANGEVIN, P., EL GOUMI, N., ENKIN, R. & SALISBURY, M. Geologically driven 3D modelling of physical rock properties in support of interpreting the seismic response of the Lalor volcanogenic massive sulphide deposit, Snow Lake, Manitoba, Canada	57
Critical behaviour and coupled processes	
HOBBS, B. E. & ORD, A. Coupling of fluid flow to permeability development in mid- to upper crustal environments: a tale of three pressures	81
ORD, A. & HOBBS, B. E. Episodic modes of operation in hydrothermal gold systems: Part I. Deformation, mineral reactions and chaos	121
HOBBS, B. E. & ORD, A. Episodic modes of operation in hydrothermal gold systems: Part II. A model for gold deposition	147
MUNRO, M. A., ORD, A. & HOBBS, B. E. Spatial organization of gold and alteration mineralogy in hydrothermal systems: wavelet analysis of drillcore from Sunrise Dam Gold Mine, Western Australia	165
KIRILOVA, M., TOY, V. G., TIMMS, N., HALFPENNY, A., MENZIES, C., CRAW, D., BEYSSAC, O., SUTHERLAND, R., TOWNEND, J., BOULTON, C., CARPENTER, B. M., COOPER, A., GRIEVE, J., LITTLE, T., MORALES, L., MORGAN, C., MORI, H., SAUER, K. M., SCHLEICHER, A. M., WILLIAMS, J. & CRAW, L. Textural changes of graphitic carbon by tectonic and hydrothermal processes in an active plate boundary fault zone, Alpine Fault, New Zealand	205
Role of geodynamic and tectonic setting	
OCCHIPINTI, S. A., TYLER, I. M., SPAGGIARI, C. V., KORSCH, R. J., KIRKLAND, C. L., SMITHIES, R. H., MARTIN, K. & WINGATE, M. T. D. Tropicana translated: a foreland thrust system imbricate fan setting for c. 2520 Ma orogenic gold mineralization at the northern margin of the Albany–Fraser Orogen, Western Australia	225
LINDSAY, M. D., SPRATT, J., OCCHIPINTI, S. A., AITKEN, A. R. A., DENTITH, M. C., HOLLIS, J. A. & TYLER, I. M. Identifying mineral prospectivity using 3D magnetotelluric, potential field and geological data in the east Kimberley, Australia	247

BLENKINSOP, T., TRIPP, G. & GILLEN, D. The relationship between mineralization and tectonics at the Kainantu gold–copper deposit, Papua New Guinea	269
GESSNER, K., MARKWITZ, V. & GÜNGÖR, T. Crustal fluid flow in hot continental extension: tectonic framework of geothermal areas and mineral deposits in western Anatolia	289
Application of 3D structural modelling to characterize specific ore-forming systems	
IVANIC, T. J., NEBEL, O., BRETT, J. & MURDIE, R. E. The Windimurra Igneous Complex: an Archean Bushveld?	313
CASE, G., BLENKINSOP, T., CHANG, Z., HUIZENGA, J. M., LILLY, R. & McLELLAN, J. Delineating the structural controls on the genesis of iron oxide–Cu–Au deposits through implicit modelling: a case study from the E1 Group, Cloncurry District, Australia	349
BELL, R.-M., KOLB, J. & WAIGHT, T. E. Assessment of lithological, geochemical and structural controls on gold distribution in the Nalunaq gold deposit, South Greenland using three-dimensional implicit modelling	385
Index	407