

Research Report

Aardwetenskappe : 2020

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Journal Articles (subsidised)

- BAM L, MILLER JA, BECKER M. A Mineral X-ray Linear Attenuation Coefficient Tool (MXLAC) to Assess Mineralogical Differentiation for X-ray Computed Tomography Scanning. *Minerals* 2020; **10**:441 15 pages.
- BESTER M, STACEY TR, BASSON IJ, KOEGELENBERG C, CREUS PK, LORIG L, CABRERA A. A risk-based methodology to improve the definition of geotechnical sectors in slope design. *Journal of the Southern African Institute of Mining and Metallurgy* 2020; **119**:1027-1038.
- BURNES A, SMART KA, TAPPE S, STEVENS G, WOODLAND AB, CANO E. Sulphur-rich mantle metasomatism of Kaapvaal craton eclogites and its role in redox-controlled platinum group element mobility. *CHEMICAL GEOLOGY* 2020; **542**:119476 22 pages.
- CHISAMBI JJ, VON DER HEYDEN BP, TSHIBALANGANDA M, LE ROUX SG. Gold exploration in two and three dimensions: improved and correlative insights from microscopy and X-Ray computed tomography. *Minerals* 2020; **10**(5):476 20 pages.
- CLEMENS JD, MARARA PM, STEVENS G, TAYLOR J. Magmatic clasts in the Saldanha ignimbrites, and Trekoskraal beach pebbles: missing pieces from the volcanic puzzle in the Cape Granite Suite. *South African Journal of Geology* 2020; **123**(1):75-94.
- CLEMENS JD, PHILLIPS N. Granite suites: a problematic concept?. *AUSTRALIAN JOURNAL OF EARTH SCIENCES* 2020; **67**(4):509-523.
- CLEMENS JD, STEVENS G, BRYAN SE. Conditions during the formation of granitic magmas by crustal melting ? hot or cold; drenched, damp or dry?. *EARTH-SCIENCE REVIEWS* 2020; **200**:102982 21 pages.
- CLEMENS JD, STEVENS G, LE ROUX SG, WALLIS GL. Mafic schlieren, crystal accumulation and differentiation in granitic magmas: an integrated case study. *Contributions to Mineralogy and Petrology* 2020; **175**:51 21 pages.
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- COETZEE A, KISTERS AFM. Spatial variations of sills and implications for magma dispersal across the Karoo basin. *South African Journal of Geology* 2020; **123**(4):511-530.
- CORNELL DH, HARRIS C, MAPANI B, MALOBELA T, FREI D, KRISTOFFERSON M, LEHMAN FRANCKO K, HANSON R. Dating of Guperas Formation rhyolites changes the stratigraphy of the Mesoproterozoic Sinclair Supergroup of Namibia. *South African Journal of Geology* 2020; **123**(4):633-648.
- DUNN SC, VON DER HEYDEN BP, BRACCIALI L, STPIERRE B. Geology and U - Pb geochronology of the Amani Region, southwestern Tanzania. *Journal of African Earth Sciences* 2020; **162**:103729, 18 pages.
- FARINA F, MAYNE MJ, STEVENS G, SOORAJLAL R, FREI D, GERDES A. Phase equilibria constraints on fractional crystallization: insights into the petrogenesis of the normally zoned Buddusò Pluton in north-central Sardinia. *Geological Society Special Publication* 2020; **491**(1):243-265.
- FIETZ S, HO SL, HUGUET C. Archaeal membrane lipid-based paleothermometry for applications in polar oceans. *OCEANOGRAPHY* 2020; **33**(2):104-114.
- GLYNN SM, MASTER S, FREI D, WIEDENBECK M. U-Pb zircon geochronology of the Dete-Kamativi Inlier, NW Zimbabwe, with implications for the western margin of the Archaean Zimbabwe Craton. *Precambrian Research* 2020; **346**:105824 12 pages.
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Doctoral completed

- BAM L. *Developing protocols for XCT scanning of dense mineral ore samples with applications to geology and minerals processing*. PhD, 2020. 98 pp.
- CHISAMBI JJ. *GOLD MINERALISATION IN THE KIRK RANGE AREA, SOUTHERN MALAWI*. PhD, 2020. 163 pp.

CLOETE R. *On the distribution and biogeochemical cycling of bioactive trace metals in the Southern Ocean*. PhD, 2020. 177 pp.

COETZEE A. *Geometry and emplacement controls of dolerite sill complexes in the Karoo basin*. PhD, 2020. 100 pp.

SMART S. *Modern-ocean ground-truthing of planktic foraminifer nitrogen isotopes : a proxy for surface ocean nutrient conditions*. PhD, 2020. 186 pp.

Masters completed

AGYARE-DWOMOH YN. *The application of Radon-222 in constraining zones of recent groundwater recharge in the Table Mountain Group aquifer in the City of Cape Town and its surrounding areas*. MSc, 2020. 95 pp.

COMUSO C. *Fluid inclusion and $\delta^{18}O$ isotope properties of fluids responsible for mineralization in the Hope Reef and Main Reef Complex of the Fairview Mine, Barberton, South Africa*. MSc, 2020. 94 pp.

HARILALL ZM. *Noble gas and radiocarbon constraints on the residence times of groundwater in and around the City of Cape Town*. MSc, 2020. 134 pp.

JORDAAN Z. *Testing potential drivers of carbon isotopic signature of particulate organic carbon in the Southern Ocean*. MSc, 2020. 119 pp.

STAVREVA R. *Constraining the suitability of barium as an indicator of paleoproductivity in different aquatic environments*. MSc, 2020. 84 pp.

STOCH B. *Implicit geological modelling of key platiniferous reefs of the main chamber of the Bushveld complex : implications for the complex structural history*. MSc, 2020. 68 pp.

STROEBEL GB. *A geometallurgical study of the quartz dominant ore varieties in a polymetallic base metal sulphide deposit, Northern Cape, South Africa*. MSc, 2020. 79 pp.

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