

Age constraints of felsic intrusions, metamorphism, deformation and gold mineralization in the paleoproterozoic Rio Itapicuru greenstone belt, NE Bahia State, Brazil

^{1,2}MELLO, E.F.; ¹XAVIER, R.P.; ³McNAUGHTON, N.J.; ³FLETCHER, I.; ³HAGEMANN, S.; ³LACERDA, C.M.M.; and ¹OLIVEIRA, E. P.¹IG-Unicamp, Campinas, Brazil. ²IGEO-UFRJ, Rio de Janeiro, Brazil. ³ University of Western Australia, WA, Australia.

SHRIMP U-Pb ages have been obtained from a set of granitoids of the Rio Itapicuru greenstone belt (RIGB). The oldest granitoid that intruded the supracrustals is a small undeformed granodiorite body in the mid-western portion of the RIGB; it yielded a zircon age of 2155 ± 9 Ma and monazite age of 2152 ± 6 Ma. In the southern sector of the RIGB, age of 2130 ± 7 Ma were obtained for the deformed Teofilândia tonalite dome. The latter intrusion show structures related to regional sinistral shear zones, which was synchronous to the emplacement sintectonic granitoids within the RIGB. Samples of the sintectonic Ambrósio dome, yielded zircon ages of 2077 ± 22 Ma, 2063 ± 55 Ma and xenotime age of 2080 ± 2 Ma, respectively. The latter represents the best crystallization age for its emplacement and probably marks the end of felsic magmatism. This age shows a good agreement with 2076 ± 10 Ma obtained at the rim of detrital zircons of a quartzite near Monte Santo town, which is interpreted as the age of metamorphism. At the Fazenda Brasileiro mine gold-related muscovite and biotite of the hydrothermal alteration halo constrained the gold mineralizing event between 2110 ± 30 Ma and 2124 ± 37 Ma, on the basis of K-Ar, and 2083 ± 4 Ma and 2031 ± 4 Ma, on the basis of available Ar-Ar. These results suggest that part of the gold mineralizing process may be closely related to the latest stages of the felsic magmatism.