

# **Granitoids marking the end of the Brasiliano (Pan - African) Orogeny within the Central Tectonic Domain of the Borborema Province**

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Six syenogranite and granodiorite intrusions, including rare mafic enclaves, were studied in the Pajeú-Paraíba Terrane, Central Tectonic Domain of the Borborema Province. They are emplaced in Paleoproterozoic to Archean gneisses and have U-Pb zircon age of ca. 570Ma. These granitoids form a S-type belt in relation to Patos and Pernambuco Lineaments. They are divided into two groups: group **A** clinopyroxene biotite leuco-syenogranites of the Solidão Complex; part of the Teixeira Complex and Queimadas Granitoids; group **B** biotite leuco-sienogranites from the Serra Branca Complex and granodiorites of the later dykes from the Itapetim Complex. Granitoids of both groups show geochemical data transitional between shoshonitic and alkaline series. The spidergram patterns are characterized by deep troughs at Nb, Sr, P and Ti and high LILE/HFSE ratios. The  $\epsilon_{\text{Nd}}$  (0.6 Ga) values are extremely negative (-11 to -16) and Nd model ages ( $T_{\text{DM}}$ ) range from 2.0 Ga to 2.5 Ga, except for the later dykes of the Itapetim Complex, which show higher  $\epsilon_{\text{Nd}}$  (0.6 Ga) values ( $\sim -2.8$ ) and  $T_{\text{DM}} \sim 1.4$  Ga.

The biotites of the studied granitoids are Fe-rich and show Fe/(Fe+Mg) ratios ranging from 0.65 to 0.80. Biotites analyzed from older granitoids (640 Ma-580 Ma) from the Pajeú - Paraíba Terrane, show Fe/(Fe+Mg) ratios < 0.60. The petrographic, isotopic and geochemical data suggest that the studied granitoids were originated from a granulitic crust (Paleoproterozoic and Mesoproterozoic ages) and emplaced in an extensional environment, during the final stage of the Brasiliano Orogeny in the Central Tectonic Domain of the Borborema Province.