



**GEOCHEMISTRY AND Nd ISOTOPIC EVIDENCE OF THE
PENSAMIENTO GRANITOID COMPLEX, RONDONIAN-SAN IGNACIO
PROVINCE, EASTERN PRECAMBRIAN SHIELD OF BOLIVIA:
PETROGENETIC CONSTRAINTS FOR A PLUTONIC ARC**

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ABSTRACT

The Pensamiento Granitoid Complex of the Rondonian-San Ignacio Province comprises plutonic granites and subvolcanic terms. They have been distinguished as syn- to late-kinematic and late- to post- kinematic granitoids. Thirteen whole rock analysis for major, trace and REE of the PGC correspond to the subalkaline series, in the AFM diagram they are calc-alkaline. The syn- to late-kinematics La Junta and San Martin granites present REE patterns with a slightly negative Eu anomaly and steep patterns of LILE contents. SHRIMP U-Pb yielded ages of $1.373 \text{ Ma} \pm 20 \text{ Ma}$ and $1.347 \text{ Ma} \pm 21 \text{ Ma}$ respectively. Sm-Nd yielded T_{DM} model ages between 1,87 Ga to 2,04 Ga, and $\epsilon_{Nd(1330)}$ values ranging from +1,8 to -4,3. The late- to post-kinematic Porvenir, San Cristobal, Diamantina and Piso Firme granitoids are plotted between metaluminous to peraluminous composition. The Piso Firme Granophyre, San Cristobal and Porvenir granites show low LREE fractionation, and subhorizontal tendency of HREE with negative Eu anomaly. Sm-Nd T_{DM} model ages of 1,58 Ga to 1,74 Ga, and the $\epsilon_{Nd(1330)}$ values of +2,7 to +1,5. The Diamantina Granite displays REE patterns with two different signatures: first, steep patterns of LREE and depletion in HREE with negative europium anomaly. Second, "gull wing" pattern with enriched HREE. They show negative peaks of Sr, P, and Ti. The Diamantina Granite yielded SHRIMP U-Pb ages of $1.340 \text{ Ma} \pm 20 \text{ Ma}$. Sm-Nd data displays T_{DM} model ages of 1,65 Ga to 1,92 Ga and $\epsilon_{Nd(1330)}$ values from +0,4 to -1,25. Coupled litogeochemistry and Sm-Nd isotopic data indicate that the PGC rocks exhibit plutonic arc setting.

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