

## **Cassiterita Trondhjemite: Origin From The Melting of a Paleoproterozoic Oceanic Crust.**

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Cassiterita Trondhjemite is located in the southernmost São Francisco Craton and inserted in the context of the Paleoproterozoic Mineiro Belt. This body is elongated according the NEE-SWW direction with an exposed area of 100 Km<sup>2</sup>. It is characterized by the presence of hornblende and plagioclase and vary from tonalite to granodiorite. The geological evolution of Cassiterita Trondhjemite is quite complex, with a overlap of igneous, metamorphic and metassomatic features that propitiated the development of biotite on the amphibole and microcline and myrmekite on the plagioclase.

These rocks have normative corundum, peraluminous character, calc-alkaline filiation and they follow a trondhjemitic trend (Na<sub>2</sub>O/K<sub>2</sub>O range from 3.15 to 4.43). They present insignificant negative Eu anomaly and shows REE's pattern typified by the depletion in heavy-REE with the enrichment in SiO<sub>2</sub>. It can be correlated to the high-Al<sub>2</sub>O<sub>3</sub> trondhjemites formed in a continental volcanic margin. It was obtained an age of 2160 ± 10 Ma (<sup>207</sup>Pb/<sup>206</sup>Pb zircon evaporation) and Sm-Nd model age (T<sub>DM</sub>) of 2.37 Ga for Cassiterita Trondhjemite.

As a possible model for the evolution of the area is suggested the formation of an oceanic crust starting from the ascent of a basaltic mantelic plume with an age close to 2.37 Ga. These basaltic rocks were subducted and partially melted, generating a trondhjemitic liquid, that crystallized from a hornblende and plagioclase fractioning.