

## **INDIUM ANOMALY IN PALEO- TO MESO-PROTEROZOIC RIFT-RELATED ACID MAGMATISM IN CENTRAL BRAZIL: RELATIONS WITH TIN DEPOSITS AND ECONOMIC SIGNIFICANCE.**

1BOTELHO,N.F., 2ROSSI, P., 1MOURA, M.A., 1OGA, D.P. and 1FREITAS, M.E.1Instituto de Geociências, Universidade de Brasília, Brasília, Brazil; 2Bureau de Recherches Géologiques et Minières - BRGM, Orléans, France.

Indium-bearing ore deposits are almost always related to acid magmatism and tin concentrations. However, unlike tin, indium studies dealt with mineralogy or contents in the ores, and there is not enough study on the indium distribution in the tin-bearing granitic rocks. Indium occurs in anomalous concentrations in paleo- to meso-proterozoic rift-related acid magmatism (ca. 1.77 - 1.6 Ga) in central Brazil, distributed in Goiás, Tocantins and Bahia states together with sediments of the Araí and Espinhaço groups. In Goiás, this magmatism yielded important indium-bearing tin deposits hosted in A-type granites. Indium contents range from 0.2 ppm in early biotite granite, rhyodacite and rhyolite to 4 ppm in late Li-mica - topaz granite. Indium concentration in hydrothermalised granites and greisens reaches thousands of ppm, mainly in cassiterite - sulfide - greisen association. In, Sn, Ta and Nb show a positive correlation in evolved and mineralised rocks, whereas there is a lack of correlation in early granites. In mineralised rocks indium minerals are roquesite, dzhalindite and yanomamite. Other indium-carriers are sphalerite, stannite scorodite and cassiterite (0.2-0.4 wt% In), the most important because of its volume. Indium is also found (up to 2 wt%) in wood-tin from minor occurrences in rhyolites. The high indium content in tin ores from Goiás indicates that the metal might be recoverable as by-product of tin. The economic significance of Brazilian indium occurrences is enhanced by the preliminary data in granites and cassiterite from the most important Brazilian tin mines, Bom Futuro and Pitinga, indicating anomalous indium concentration