

International Conference on Geology

June 22-23, 2015 Florida, USA

The kibaran tin and columbite-tantalite province in eastern D.R. Congo: Structural control, Cassiterite shrimp vs K-Ar geochronology and implications to rodinia and gondwana tectonic

Joseph Kokonyangi

Environmental and Natural Resources Commission, D R Congo

The Mesoproterozoic Kibaran Orogenic System of central Africa developed between 1.4 and 0.95 Ga (from rifting to post collisional stage). It hosts one of the world's largest and valuable quartz and pegmatite veins mined for cassiterite, tungsten, columbite-tantalite, monazite, ilmenite, gold and REE since the 19s. The origin and time of emplacement of the mineralization is poorly constrained partly because, attempts to date the mineralization through their host rock and or associated silicates accessory minerals such as micas and feldspar have been hampered by uncertainties and disturbances of isotopic systems. An alternative approach is to date the ore themselves directly. In this paper, Pb-Pb SHRIMP geochronology was directly applied for the first time on the cassiterite occurring within quartz and pegmatite veins and those disseminated in associated peraluminous, two micas granitoids in the Kalima and Mitwaba areas of eastern Congo. K-Ar ages obtained on muscovite occurring together with the dated cassiterite in greisen are matched to the Pb/Pb SHRIMP data and the significances of individual dates are interpreted in the frame of the metallogeny of central Africa. Finally, the implication of these geochronological data to the understanding the blocking temperature of cassiterite is assessed. Geochronological data coupled with structural observations are finally used to discuss the Rodinia and Gondwana tectonics between 1000 and 550 Ma in central Africa.

Biography

Joseph Kokonyangi has completed his Ph.D. studies in 2005 at the Osaka City University in Japan and his Postdoctoral researches at Yokohama National University in Japan. From 2007 to 2010, he has worked as Professor and Director of the Tokyo Chapter of the Gondwana Institute for Geology and Geochronology. In 2011, he was elected as the member of lower house of the parliament of the democratic republic of congo in central Africa.

kokonyangi@gmail.com

Notes: