

## **GEOCHEMISTRY OF IRON ORE DEPOSITS OF TIRTHAMALAI AREA, DHARMAPURI DISTRICT, TAMILNADU, INDIA - IMPLICATION ON THE GENESIS**

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### **Abstract**

The geochemistry of Banded Magnetite Quartzite (BMQ) deposits of Tirthamalai area of part of Tamil Nadu state, India. The study area has been affected by high-grade metamorphism, complex structural deformation and show metamorphic reaction between the oxides and quartz to form metamorphic iron-rich silicates. Chemical data of 40 samples of BMQ from different locations of Tirthamalai region occurred in the Pre-cambrian granulite terrain of Tamil Nadu are presented. All these have quartz-magnetite-silicates as the principal minerals assemblages rich in iron oxide. The presence of high amount of  $TiO_2$  and  $Al_2O_3$  suggests that the formations have clastic contamination. The average abundances of ferromagnesian trace element are also high, similar to data of other BIF's of the world. The values fall in the normal range of averages and similar characteristics to Pre-Cambrian BIFs. The geochemical studies show that the iron formations and associated granulites area of different origin namely meta-sedimentary and meta-volcanic respectively.

*Keywords:* Geochemistry, Iron formation, Tirthamalai, Pre-cambrian, Tamil Nadu.