

# **Infrared Fluid inclusion microthermometry on coexisting wolframite and quartz from Dajishan tungsten deposit, Jiangxi province, China**

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## **Introduction**

Jiangxi province, south China, is a well-known tungsten production area. There are a lot world class tungsten deposits there. Dajishan tungsten deposit is among them, which is located in south part of Jiangxi province and composed of a number of tungsten-bearing quartz veins. These veins occurred mainly in precambrian lower grade metamorphic rocks and lessly in adjacent granites of Mesozoic age. Most of previous research works have been done on the features and evolution of Mesozoic granite and its relation to tungsten mineralization. Few works involved the properties of ore-forming fluid by study the quartz which associated with wolframite. This work for the first time make the comparative fluid inclusion study on both wolframite and coexisting quartz, try to get better understanding of the property of tungsten-forming fluid and fluid evolution process during the tungsten-bearing quartz veins formation.

## **Fluid inclusion type**

Fluid inclusion observation and microthermometry work was done under the IR Microscopy

One primary fluid inclusion type was recognised in wolframite, which is H<sub>2</sub>O-NaCl type fluid inclusion. It distributed isolatedly or along the crystal growth zone.

Two primary fluid inclusion types were recognized in coexisting quartz, which are H<sub>2</sub>O-NaCl type and CO<sub>2</sub>-H<sub>2</sub>O type respectively. These inclusions distributed randomly in quartz.

## **Conclusion**

1. Ore-forming fluid of Dajishan wolframite have a relatively narrow salinity range and higher temperature range
2. Fluid inclusions trapped in quartz show relatively lower temperature and variable salinities.
3. Volatile component, such as CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub> etc can only be found in the fluid inclusions in quartz.
4. Quartz have a more complicated fluid evolution history than that in coexisting wolframite.

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