

## Nd-Sr-Pb isotopic and elemental geochemistry of silicalites from the sulphide ore deposit in the Guangdong region, China

WANG YINXI<sup>1</sup>, LI HUIMING<sup>1</sup>, WANG YUANYUAN<sup>2</sup>, CHEN YIJUN<sup>1</sup>, ZHANG MENGQUN<sup>1</sup> AND WANG HENIAN<sup>2</sup>

<sup>1</sup>Center of Modern Analysis, Nanjing University, Nanjing 210093, China

<sup>2</sup>Nanjing Institute of Geology and Palaeontology, Academy of Sciences, Nanjing 210008, China.

<sup>3</sup>Dept. of Earth Science, Nanjing University, 210093, China

Silicalite is well developed and is present as layers, thin layer or siliceous band in the banded ores. The Dajiangping pyrite deposits lie on the Yunfu County of Guangdong region, China. is a super-large pyrite ore deposit.

The silicalite is mainly composed of microlitic and cryptocrystalline quartz. SiO<sub>2</sub> is the essential chemical composed of the silicalite, ranging from 81.50% to 94.32%, together with Al<sub>2</sub>O<sub>3</sub> content between 0.45% and 9.44%, CaO < 0.12% and MgO < 0.36%. The contents of FeO, MnO, K<sub>2</sub>O and Na<sub>2</sub>O are commonly low. The isotopic characters of the Dajiang pyrite orebody are:  $\epsilon_{\text{Nd}}(t) = -12 \sim -13$ ,  $(^{87}\text{Sr}/^{86}\text{Sr})_I = 0.73085 \sim 0.73104$ ,  $(^{206}\text{Pb}/^{204}\text{Pb})_I = 18.467 \sim 18.485$ ,  $(^{207}\text{Pb}/^{204}\text{Pb})_I = 16.239 \sim 16.384$  and  $(^{208}\text{Pb}/^{204}\text{Pb})_I = 39.805 \sim 39.873$ . Because of the isotopic characteristic of Sr-Nd-Pb in the whole rock, these evidences reflect the character of crust source but not that of magmatic source region.

The determination of Dajiangping pyrite deposit indicates that the Precambrian continental rift massive sulphide ore deposit is also an important kind of deposit in South China basins. Evidently, the above-mentioned Sr-Nd-Pb isotopic geochemistry reflects the crust source of the Dajiang pyrite deposits.

This work is granted by the National Natural Science Foundation of China (No. 40872028) and by the Analysis Testing Foundation of Nanjing University

[1] Wang Henian et al. (1997). *Chinese Science Bulletin*, Vol. 42, 23:1983-1985

## Rb-Sr and Sm-Nd isotopic ages of Sulphide deposits in the Guangdong region, China

WANG YINXI<sup>1</sup>, LI HUIMING<sup>1</sup>, WANG YUANYUAN<sup>2</sup>, HU XIN<sup>1</sup>, LIU DI<sup>1</sup>, TAO XIANCONG<sup>1</sup> AND WANG HENIAN<sup>3</sup>

<sup>1</sup>Center of Modern Analysis, Nanjing University, Nanjing 210093, China (\*correspondence: yxwang@nju.edu.cn)

<sup>2</sup>Nanjing Institute of Geology and Palaeontology, Academy of Sciences, Nanjing 210008, China.

<sup>3</sup>Dept. of Earth Science, Nanjing University, 210093, China

The Dajiangping pyrite deposits lie on the Yunfu County of Guangdong region, China. is a super-large pyrite ore deposit.

Rb-Sr and Sm-Nd isotope ages were measured by using VG354 mass spectrometer at Modern Analysis Centre, Nanjing University and the analytical procedures were discussed and given in detail by Wang<sup>(1)</sup>

The Rb-Sr and Sm-Nd dating of the orebody give the ages of  $630.1 \pm 7.3\text{Ma}$  and  $637.5 \pm 6.9\text{Ma}$ , respectively. The ages slightly approximate the age inferred from the occurrence of the later Proterozoic algae. This may be related to the subsequent geological effect on the Rb-Sr and Sm-Nd isotope system of the Dajiangping pyrite orebody. Because of the good linearity of Rb-Sr and Sm-Nd internal isochron between the whole rock, these evidences reflect the character of well-distributed source. Evidently, the above-mentioned Rb-Sr and Sm-Nd isotopic ages reflect the ages of the Dajiang pyrite deposits.

The silicalite ages of deposits in this are  $630.1 \pm 7.3\text{Ma}$  and  $637.5 \pm 6.9\text{Ma}$ , belonging to the later Proterozoic epoch. The determination of Dajiangping pyrite deposit indicates that the Precambrian continental rift massive sulphide ore deposit is also an important kind of deposit in South China basins. The Dajiangping pyrite deposit is similar to the famous Proterozoic super-large deposits in the world. The age determination of Dajiangping pyrite deposit bed plays an important role in confirming the ages of the Yunkai Group.

This work is granted by the National Natural Science Foundation of China (No. 40872028) and by the Analysis Testing Foundation of Nanjing University

[1] Wang Yinxi et al. (1992). *Chinese Science Bulletin* 37, 36-39