

Mineralogical Characteristics of Skarns from Dulong Sn-Zn Polymetallic Deposit in Yunnan Province and Their Geological Significances

LI Pi-you¹, YAN Yong-feng^{1*}, YANG Guang-shu¹, JIA Fu-ju¹, TIAN Zhen-dong^{2,3}, CUI Dong-hao¹,
TIAN Zheng-wei¹, KANG Ming-min¹

(1. Faculty of Land Resource Engineering, Kunming University of Science and Technology Kunming 650093, China;

2. State Key Laboratory of Ore Deposit Geochemistry, Institute of Geochemistry Chinese Academy of Sciences, Guiyang 550081, China;

3. University of Chinese Academy of Sciences, Beijing 100049, China)

Abstract: The Dulong Sn-Zn deposit, located in Maguan County of Yunnan Province, is the third largest tin polymetallic deposit in China. Voluminous previous researches have reached there exist three kinds of views on the metallogenesis of the deposit, including magmatic hydrothermal, sedimentary exhalative, and the SEDEX ore source bed superimposed with regional metamorphism and magmatic hydrothermal activity. To carry out some relevant works on the skarn which is of the most important host rocks of the deposit is significantly important for solving the existed controversies on the metallogenesis. On the basis of the detailed microscopy work, chemical compositions of garnet, pyroxene, and amphibole of skarns have been analyzed by using electron microprobe (EPMA) in this paper. Results show that the garnet belongs to the andradite-grossular series, the pyroxene belongs to diopside-hedenbergite series, and the amphibole is mainly actinolite and ferroactinolite with minor ferrohornblende. Combining with previous published data of geochronology, fluid inclusions, sulfur, lead and carbon isotopes, we proposed that the Dulong Sn-Zn polymetallic deposit is of a magmatic hydrothermal skarn type.

Keywords: Dulong Sn-Zn deposit; mineralogical characteristics; skarn; genesis of deposit