Ree geochemistry of Lignites in the Lincang germanium deposit, Western Yunnan Province, China

QI HUAWEN HU RUIZHONG SU WENCHAO

Institute of geochemistry , Chinese Academy of Sciences, Guiyang 550002, P. R. China(qihuawen@sohu.com)

Introduction

The Lincang germanium deposit is located in Lin-cang county, western Yunnan Province. There are three coal-bearing cycles $N_{1b}^{2}N_{1b}^{4}$ and N_{1b}^{6} in the basin. Germanium mainly occurs in the lignite of the first coal cycle (N_{1b}^{2}), which is close to the basement granites. REE geochemistry of lignites and its relation with germanium mineralization was discussed.

Results and discuss

Results indicate that Ge-rich lignites contain 3.862 °´2522.906×10^{-6} GeΔREE varies from 5.070×10^{-6} to 148.225×10^{-6} while non-germanium lignites contain less than 0.781×10^{-6} Ge and °ΔREE varies from 32.186×10^{-6} to 46.803×10^{-6}. Both the Ge-rich ligintes and non-Ge lignites have distinct ne-gative Eu anomaly and weak positive Ce anomaly. The American shale-normalized REE patterns of Non-Ge lignite and Ge-poor lignite are plain¨similar to the basemental granites. But Ge-rich lignites' NAS-norm-alized REE patterns are varia-ble, HREE concen-trated with the increasement of Ge. Their NAS-normalized REE patterns are similar to siliceous rocks¨which formed under hydro-thermal environ-ment.

Conclusion

The germanium content of non-germanium lignite is very low indicate that under ordinary sedimentary environment the abnormal enrichment of germanium in lignite is not controlled by the continental source materials or the coal-forming plants. The distribution of Ge-rich lignite is consistent with siliceous rocks siliceous rocks contain 78.374×10^{-6} germanium in average their REE and trace element compositional feature are similar suggest most germanium in lignite was mainly brought by hydrothermal water.

References

Qi huawen Hu Ruizhong,¨Su Wenchao, *et a*l 2002, Geochimica 31, 3-9

Petrologic and mineralogical study of enclaves in plutons in the typical mining districts of Tongling , Anhui Province and its bearing on the process of magmatism - metallogeny

X. QIN, Y. DU, W. ZHOU AND H. ZHANG

Department of Earth Sciences, China University of Geosciences, Beijing 100083, P. R. China (ysdu@cugb.edu.cn)

Two types of enclaves occur in magmatic plutons in Tongling, Anhui Province. The first type is residuals of metamorphic rocks of high amphibole facies, and the other one is magmatic rocks with monzonic to dioritic compositions. A combined petrologic and mineralogical study has been carried out on the two types of enclaves in order to estimate their forming conditions and analyse their relations to hosts, which provides new insights into material source of magmatic rocks and associated mineral deposits and gives a clue to better understanding machanism – metallogeny. This leads to propose a new metallogenic model for a stratabound skarn type of ore deposits associated with a syntactic type of magmatic rocks. The new model can be simply summarized as partial melting of old metamorphic basement rocks in depth and accumulating, differentiating and positioning of magmas to form deep-level and shallow-level magma chambers, followed by mixing of different composition magmas associated with their crypto-explosion, migrating of gas-bearing ore fluids and precipitating of metals in the fluids within the magmas.