

## **Research on Enrichment regularity and geochemical Characteristics of Coal-Ge Deposit in Wulantuga (Inner Mongolia ,China)**

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In recent years, domestic and foreign scholars have done more and more research on trace elements in coal, the most common research is about rich germanium(Ge) in coal mine. The geological survey confirmed that the average grade of Wulantuga germanium deposit in Shengli coalfield is 244g/t, germanium reserves amounted to 1600t. The deposit not only has a large scale and high grade, but also has the advantages of simple geological condition, shallow buried and easy to open pit mining. The genesis and metallogenic model of the oversize coal-germanium deposit in Mesozoic of Inner Mongolia are different from other coal-germanium deposit, it has its own particularity and typicality. The abstract mainly take the Ge enrichment zone Wulantuga coal germanium deposit as the object, the deposit located in Shengli Coalfield, Erlian basin in Inner Mongolia. It discussed on the occurrence state of germanium in coal and the metallogenic environment of Ge deposit. Specific content as follows:

From the view of plane, the thickness of Ge coal mining area in Inner Mongolia is gradually thickening from basin edge to the basin center, but the grade of germanium is from high to low, it shows clear direction gradual change. The content of Ge in the north and south of the mining area is high, in the east and west part is relatively low, and the Ge grade in the mining area is above  $200 \times 10^{-6}$ .

Ge mainly deposit in the top, middle and bottom of the coal seam, on the other side the grade of roof and floor is very low. Different from other Ge coal deposit, Ge was generally enriched in the roof and floor of coal seam, Wulantuga coal germanium deposit has its unique metallogenic model, caused by sedimentary environment and geological background.

The relationship among the grade, ash content, volatile matter and total sulfur quantity of Ge in the coal seam has been studied through the test results, namely Ge content and the correlation of coal industry analysis element indicate that: in general, coal sample ash index are negatively related with Ge content, while the coal sample volatile related with Ge content in general were positively correlated. The grade and volatile into proportional shows that Ge mainly riched as organic state occurrence in coal mining area. The total sulfur content of the coal sample in the borehole is positively related to the Ge content, it shows Ge-coal formed in the strong reduction environment.