

## Geological Characteristics and Trend Prediction Effect of Qiliping F60-I Gold and Silver Orebody in Xiongershan Area

WANG Yang<sup>1,2,3</sup>, TIE Jiankang<sup>1,2</sup>, NIU Shuyin<sup>4</sup>, FENG Shaoping<sup>1,2,3</sup>, WANG Jianghe<sup>1,2</sup>

1. The First Geological Survey Institute of Henan Geological Exploration and Exploitation Bureau Luoyang 471023 Henan China ;

2. Key Laboratory of Gold and Silver Polymetallic Metallogenic Series and Deep Prediction of Henan Province , Luoyang 471023 Henan China ;

3. College of Earth Sciences and Resources ,China University of Geosciences (Beijing) Beijing 100083 ,China ;

4. College of Resources ,Shijiazhuang University of Economics Shijiazhuang 050031 Hebei China

**Abstract:** According to the obtained results of mine deep exploration ,the systematic collection of geological exploration as well as scientific research achievements in the study area ,in the process of project implementation for the old mine deep prospecting nationwide ,it was found that gold grade of the deep gold-silver vein exhibited a rising trend at the Qiliping F60-I gold and silver orebody. Through study on occurrence of state of the known orebody ,regularities of distribution and ore-forming characteristics ,deep tectonic mineralization ,pre-controlling characteristics and metallogenic elements were analyzed. Additionally based on MapGIS DTM spatial data analysis ,the weight contour was applied for predicting space extending trend of the ore body ,moreover ,the state of the three-dimensional space of the ore bodies was likewise systematically studied. Reference for ore body engineering validation effect ,the orebody spatial prediction scheme and validation project were adjusted and a good prediction effect was obtained. Meanwhile ,we achieved the old mine deep ready exploration prospecting breakthrough ,which had the very good guidance significance and demonstration effect deep prospecting engineering deployment for the deep prospecting in Xiaoqinling area ,and it can effectively promote the deep geological prospecting work of the implementation and exploration engineering in the study area.

**Key words:** mineralization ,pre-controlling structure ,deep prediction ,DTM spatial analysis ;Xiongershan area ; Henan Province

### 上海应物所在金纳米团簇的结构和催化研究方面取得进展

中国科学院上海应用物理研究所水科学与技术研究室许文武和研究员高巍与美国内布拉斯加林肯大学教授曾晓成合作,在金纳米团簇的结构和催化研究方面取得进展。相关结果发表在日前出版的 *Science* 最新子刊 *Science Advances* (*Sci. Adv.* 2015) 上。该团簇结构配以 *Probing the structure of gold nanoparticle* 为题作为焦点展示在 *Science Advances* 的主页上。

近年来,由于自身独特的物理化学性质和在催化、纳米及磁性材料等领域广泛的应用前景,巯基保护的团簇结构和性质得到研究者的广泛关

注。美国斯坦福大学教授、2005年诺贝尔化学奖得主 Kornberg 研究组利用单粒子透射电镜方法实现技术突破,确定了巯基保护的团簇 Au<sub>68</sub>(SH)<sub>32</sub> 中金原子的坐标 (*Science*, 2014), 而团簇中硫原子的坐标却无法给出。上海和美国的研究小组通过理论计算表明团簇的稳定结构与实验结果内核相一致,而表面的金原子却存在差异。这可以归因于单粒子透射电镜的电子束改变了表面部分金原子位置,进而对团簇性质造成影响。进一步的理论研究表明,该团簇可以作为良好的纳米催化剂。该工作展示了理论能够为实验观测提供支持,并更准确地解释实验现象。

(来源:中国科学院上海应用物理研究所)