

Application of electro-geochemical technique to volcanic-type uranium exploration in Jiangxi province,China

MEILAN WEN¹,XIONG JIAN²,XIANRONG LUO³

¹ Guilin University of
Technology,Guilin,541004,China,
meilanwen108@hotmail.com

² Guangxi Taihetongda mining development co.,
LTD,Nanning,530000,China,
466454388@qq.com

³ Guilin University of
Technology,Guilin,541004,China,
lxr811@glute.edu.cn

Abstract:Electro-geochemistry surveys were undertaken over known volcanic-type uranium deposits at Xiangshan basin and Shengyuan basin to assess the utility of the technique for identifying such deposits in the Huxi area, Jiangxi province, China. The method used in the research was the electro-geochemical technique which is capable of collecting larger volumes of mobilized metal ions on coated positive and negative electrodes placed in the two holes between 100cm at about 20-40cm depth in the soil , connected with 9V DC battery, poured the 15% concentrated nitric acid ,backfilled the soil and left for about 48h. The electrode units are unearthed; the absorbent coatings scaled out and digested for U, Th and Mo analysis by ICP-MS for comparison. The results show the clear electro-geochemical anomalies of U, Th and Mo were detected over the containing uranium veins at the two sites. The anomalous elements responsive to mineralization at the both known ore sections were found to be probably reflecting the concealed ore bodies. The formation mechanism of the recorded U, Th and Mo anomalies are uncertain, but the studies we carried out demonstrated that the electro-geochemical technique can be applied in search for concealed uranium deposits.

Key words: electro-geochemical
technique,volcanic-type uranium deposit
exploration,Xiangshan area