1 Introduction

Tungsten is the most prevailing mineral resources in China. Large-scale tungsten mineralizations took place mostly in South China, especially in the Nanling Mountains and the Dahutang W-Cu-Mo Ore Field (New tungsten belt). The Dahutang W-Cu-Mo Ore Field (DWOF), where many granite are emplaced and related ore occurrences/deposits occur, is tectonically located in the Jiangnan massif and the southeastern margin of Yangtze paleoplate, which belong to The Qinhang belt (Mao et al, 2011). The Qinhang belt hosts numerous ore occurrences/deposits (W, Cu, Mo, Sn) that are spatially associated with granites. The calc-alkaline granite from the Dahutang W-Cu-Mo Ore Field of The Qinhang belt host important W-Cu-Mo occurrences. The most ore deposits in the belt are Mesozoicage although they occurred along the Precambrian suture.

2 Discussions and Conclusions

In this paper, we document Re–Os isotopic age data in molybdenites to determine the timing of the granitoid-hosted mineralizations in the DWOF. The Dahutang granite-hosted molybdenite in the Shimengshi is significantly higher (1.868–22.134 ppm) than molybdenites from the Dahutang (0.3368–8.256ppm) and Shiweidong (0.641–1.807 ppm). Six molybdenite samples from Shimengshi (Feng et al, 2012), Six molybdenite samples from Shiweidong (Feng et al, 2012) and five samples from Dahutang occurrences give Re–Os ages ranging from141.4±2.0 to 144.3±2.2 Ma, 138.8±1.9 to 140.8±2.1 and 136.6±2.1 to 138.4±2.0 Ma, respectively.

These ages are consistent with those of post-collisional granite and indicate close relationship between mineralization events and granitic magma differentiation–crystallization processes. The new Re–Os age data obtained from this study show that mineralization events developed earlier (141–144 Ma) in the Noth (Shimengshi) as compared with the Shiweidong (138–140 Ma), but the Later mineralization events is(136–138 Ma) (Dahutang) of central DWOF (fig.1). Moreover, those molybdenite sample from DWOF is close to the Yanshanian granitoids related W-Sn-Cu-Pb-Zn deposits which ages (150 and 160 Ma). Especially, According to these data, mineralization events had been occurring during the formation of the Yanshanian granitoids (156±3 to 135.3±1.3 Ma), which are the ore-forming mother rock and also the ore bearing rock. Therefore one possible explanation is that older molybdenite ages in Shimengshi probably represent the mineralization period related to crystallization–differentiation processes.

On the other hand, the younger molybdenite age in the Dahutang may represent prolongation of the life of magmatic–hydrothermal processes/cycles and/or the remobilization of molybdenum within the solidified granitic system by the intrusion of the basic magma. Nevertheless, the mineralization period may only related to prolongation of the life of magmatic–hydrothermal processes/cycles and/or the remobilization of molybdenum within the solidified granitic system by the intrusion of the basic magma.

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