

# **Petrogenesis of Ore Related Intrusions in the Jiangjunmu Cu–Au Deposit, East Kunlun: Evidence from Geochronology, Geochemistry and Sr-Nd-Pb-Hf Isotopes**

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**The newly discovered Jiangjunmu porphyry Cu-Au deposit in the East Kunlun Cu–Mo–Au–Ni metallogenic belt, this study report zircon U-Pb age, whole rock geochemistry and Sr-Nd-Pb-Hf isotope of the Jiangjunmu ore related intrusions. The deposit is associated with a granodiorite porphyry ( $217.4 \pm 1.3$  Ma), with many mafic magmatic enclaves (MMEs), and K-feldspar granite ( $228.7 \pm 1.8$ Ma), both of which intrude the K-feldspar granite porphyry ( $234.7 \pm 1$ Ma). Geochemical features show that the granodiorite porphyry and K-feldspar granite are characterized by high  $K_2O$ ,  $Al_2O_3$  and low  $MgO$ , and have similar REE patterns with LCC and granites formed by the partial melting of the lower continental crust(LCC) or by mixing of the LCC and mantle in local area. the Sr–Nd-Pb- Hf isotope data indicate that both rocks are origin from the amphibole-garnet source in thickened lower continental crust (TLCC) by partial melting in post-collisional orogenic extensional setting, there was a mount of mantle components contributed to the formation of granodiorite porphyry with relative low  $^{87}Sr/^{86}Sr$  ratios (0.70555-0.70913),  $T_{DM2}$  ( 1062 to 1214Ma) and high  $\epsilon_{Hf}(t)$  values(-1.7 to +1.01), which is the product of the Late Triassic crust-mantle interaction in East Kunlun and provides an important material basis and metallogenic theory guidance for the search of porphyry copper-gold or related hydrothermal deposits in the East Kunlun, whereas more upper continental crustal components contributed to the formation of the K-feldspar granite with relative high  $^{87}Sr/^{86}Sr$  ratios (0.70884-0.70944),  $T_{DM2}$  ( 1342 to 1582Ma)and low  $\epsilon_{Hf}(t)$  values(-8.18 to -3.83).**