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铜陵中酸性侵入岩成因及锆石SHRIMP定年

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摘要:

铜陵地区高钾钙碱性系列侵入岩包括辉长闪长岩+石英二长闪长岩+花岗闪长岩,橄榄安粗岩系列侵入岩包括辉石二长闪长岩+二长岩+石英二长岩。高钾钙碱性系列侵入岩中含有富云母包体和微粒闪长质包体以及镁铁质石英二长闪长质包体,与区内的铜(金)矿化关系密切;橄榄安粗岩系列岩体中含多种深源堆积岩包体,与金(铜)、银、铅、锌等矿化关系密切。锆石SHRIMP定年结果表明,石英二长闪长岩为140Ma左右,花岗闪长岩为142~146Ma,辉长闪长岩为143Ma,辉石二长闪长岩为138~142Ma,二长岩为143Ma,可见两个系列侵入岩的年龄既有一定的差别,也有一些重叠。岩石地球化学及包体岩石学研究表明,橄榄安粗岩系列岩石可能为幔源碱性玄武质岩浆分异后形成,高钾钙性系列岩石可能为分异的幔源岩浆与壳源岩浆混合后形成。

英文摘要:

The Mesozoic intermediate-acid intrusive rocks in Tongling area can be divided into two magmatic series, namely the shoshonitic series and the high-potassium (K) calc-alkaline series. The shoshonitic series is characterized by an association of pyroxene monzodiorites (PMD)+monzonites (Mz)+quartz monzonites (QM), and high Rittmann indices. This series has common association with gold deposits. This series is associated cumulate enclaves such as pyroxene cumulate, hornblende cumulate and hornblende gabbro. The high-potassium calc-alkaline series is an association of gabbro-diorite (GBD)+quartz monzodiorites (QMD)+granodiorites (GD). It has lower Rittmann indices and REEs than the shoshonitic series and is associated with copper deposits. This series contains three kinds of enclaves, mica-enriched enclaves, which appear to be melted pelitic rock, mafic quartz monzodiorite enclaves and micro-diorite enclaves. The two series overlap in age. Zircon U-Pb SHRIMP ages for the quartz monzodiorite are around 140Ma, for the granodiorite are 142~146Ma, for the gabbro-diorite is 143Ma, for pyroxene monzodiorites are 138~142Ma and monzonite is 143Ma. From the differences in chemistry between the two suites study and the different kinds of enclaves found in each, we conclude that the shoshonitic series magma is derived from the differentiation of the mantle-derived alkaline basic magma and the high-potassium (K) calc-alkaline series magma is mixture between the differentiated mantle magma and crustal magma.

关键词: [锆石SHRIMP定年](#) [高钾钙碱性和橄榄安粗岩系列](#) [侵入岩](#) [成因](#) [铜陵](#)

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