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铜陵地区燕山期侵入岩成因与三端元岩浆混合作用 [点此下载全文](#)

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摘要:

本文从岩石学、矿物学、岩石化学、同位素地球化学方面探讨了铜陵地区岩浆演化的制约因素。显微镜下发现了岩浆混合结构。研究表明岩浆混合作用属较均一的化学混合。高钾钙碱性-钾玄岩系列岩石组合表明燕山早期为加厚的陆壳或具有山根的造山带, 岩浆形成于55km以下。Izanagi 板块俯冲及大陆岩石圈拆沉减薄诱发软流圈物质上涌, 减压熔融产生玄武岩岩浆, 底侵并加热下地壳物质部分熔融产生正长岩岩浆。参与岩浆混合的是进化的玄武岩岩浆。铜陵地区侵入岩主要是三端元岩浆——玄武岩岩浆、正长岩岩浆和花岗岩岩浆混合的产物。

关键词: [岩浆混合作用](#) [玄武岩](#) [正长岩](#) [花岗岩](#) [岩浆](#) [高钾钙碱性-钾玄岩系列](#) [燕山期](#) [铜陵地区](#)

Genesis of the Intrusive Rocks from the Tongling Area during the Yanshanian and Mixing of Three-end-member Magma [Download Fulltext](#)

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Abstract:

The Tongling area is one of the largest copper—gold mineralized areas in China. The genesis of the intrusive rocks in this area is still controversial. The intrusive magmatism in this area has been discussed in terms of petrology, mineralogy, petrochemistry and isotopic geochemistry. Mixing textures of the magma were first discovered in the intrusive rocks from the Tongling area. The intrusive rocks contain a few mafic microgranular enclaves. These features suggest that the magma mixes homogeneously, belonging primarily to chemical mixing. The Sr—Nd isotopic characteristics also reflect the magma mixing. The high—K calc—alkaline—shoshonite rock associations indicate that this area had a thickened continental crust or was an orogenic belt with a mountain root in the early Yanshanian period, and that the magma should be generated as deep as 55 km or below. The magmatism is related to the subduction of the Izanagi plate under Eurasia and lithospheric delamination. The delamination of continental lithospheric mantle resulted in adiabatic upwelling of hot asthenosphere and generation of basalt magma by decompressional melting. The basalt magma underplated and heated directly the lower crust to produce syenite magma. The basic magma involved in the magma mixing is evolved basalt magma. Simulation of magma mixing has demonstrated that the intrusive rocks are primarily a product of mixing of three kinds of end-member magmas—basalt magma, syenite magma and granite magma. Mixing of basalt and syenite magmas in magma chambers of the lower crust can produce gabbro—syenite associations (monzogabbro, pyroxene diorite, pyroxene monzodiorite and monzonite). Diorite—monzonite magma formed in the lower crust ascends to the middle crust and high temperature of the diorite—monzonite magma can make the metamorphic rocks in the middle crust melt partially and generate granite magma. Similarly, mixing of diorite—monzonite and granite magma can produce monzodiorite—granodiorite associations (monzodiorite, monzonite, quartz monzonite, granodiorite).

Keywords: [magmic mixing](#) [basaltic magma](#) [syenitic magma](#) [granitic magma](#) [high-K calc-alkalineshoshonite](#) [Yanshanian period](#) [Tongling area](#)

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