

河南三门峡市曲里石英闪长斑岩锆石SHRIMP U-Pb定年及其地质意义

杨德彬 许文良 王冬艳 王清海 裴福萍

(吉林大学地球科学学院, 吉林 长春 130061)

摘要: 河南省三门峡市曲里石英闪长斑岩中锆石的阴极发光图像显示其具有两种类型, 即具有细微震荡环带的自形锆石和具有继承核与生长边的浑圆状锆石。具有细微震荡环带岩浆锆石的SHRIMP U-Pb年龄(117.7 ± 1.6 Ma)显示该石英闪长斑岩体的形成时间为早白垩世; 浑圆状锆石核部SHRIMP U-Pb谐和年龄为620 Ma和219 Ma, 这表明该石英闪长斑岩的母岩浆可能起源于经历了超高压变质作用改造的华南地块基底物质的部分熔融。

关键词: 石英闪长斑岩; SHRIMP U-Pb定年; 锆石; 地质意义; 河南曲里

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SHRIMP zircon U-Pb dating of the Quli quartz diorite porphyry,
Sanmenxia City, Henan, and its geological significance

YANG De-bin, XU Wen-liang, WANG Dong-yan, WANG Qing-hai, PEI Fu-ping
(College of Earth Sciences, Jilin University, Changchun 130061, Jilin, China)

Abstract: Cathodoluminescence (CL) images show that there are two types of zircon in the Quli quartz diorite porphyry, Sanmenxia City, Henan Province, i.e. euhedral zircon with fine oscillatory zoning and rounded zircons with an inherited core and growth rims. SHRIMP U-Pb dating of the zircons with fine oscillatory zoning of magmatic origin indicates that quartz diorite porphyry was formed at 117.7 ± 1.6 Ma (Early Cretaceous). SHRIMP U-Pb concordia ages of the cores of rounded zircons are 620 and 219 Ma, suggesting that the parental magma for the quartz diorite porphyry may have been derived from partial melting of basement materials of the South China block that had been modified by ultrahigh-pressure metamorphism.

Key words: quartz diorite porphyry; SHRIMP U-Pb dating; zircon; geological significance; Quli, Henan