5.5.P22

Syn to post tectonic magmatism in Ossa Morena Zone: Preliminary geochemical data of Redondo and Reguengos de Monsaraz plutons, Portugal

M.M.V.G. SILVA

University of Coimbra, Portugal (mmvsilva@ci.uc.pt)

In the Ossa Morena Zone of southern Portugal, two granitoid plutons with different tectonic associations are found. The Redondo pluton is syntectonic, elongated in shape and concordant with NW-trending Hercynian structures. The Reguengos de Monsaraz pluton is late- to post-tectonic, discordant with the regional structures and shows no deformation. Both consist of tonalites/granodiorites with associated diorites and microgranular enclaves. The tonalites are calc-alkaline and contain quartz, oligoclase-labradorite, microcline, magnesio-horneblende, Mg-biotite, Fe-biotite, titanite, apatite, zircon, allanite and magnetite, as well as secondary chlorite, actinolite, white mica and epidote. SiO_2 and A/CNK vary from 57 to 68% and 0.87 to 1.05 in Redondo, and from 58 to 66% and 0.90 to 1.12 in Reguengos de Monsaraz, respectively. The diorites contain andesine-labradorite, magnesio-horneblende, edenite, Mg-biotite; their accessory minerals are similar to those of the tonalites. Geochemically, they are tholeiitic and show similar SiO_2 contents and A/CNK ratios in both plutons (in the 50-55% and 0.58-0.95 range, respectively), but the Redondo diorite shows higher Mg/Fe than that of Reguengos de Monsaraz. The enclaves and hybrid zones are compositionally intermediate between the tonalites and diorites. In the Redondo pluton, the tonalite has $(La/Yb)_n$ between 8.6 and 24.6, that of the diorite is 5.1, and the enclaves and hybrid rocks show a range from 1.2 to 12.8. This suggests that the Redondo tonalite was derived from a source more enriched in LREE than the diorite. In the Reguengos de Monsaraz pluton, $(La/Yb)_n$ varies from 5.8 to 8.1 in the tonalite and from 4.3 to 6.8 in the diorite, indicating a slightly more LREE enriched source for the tonalite magma.

Acknowledgements

This work was developed in the project POCTI/CTA/34366/99, financed by FCT. Thanks are due to Prof. B. J. Wood for REE determination at the Dept. of Earth Sciences, Univ. of Bristol.

5.5.P23

Zircons and petrogenesis of migmatites from the South Carpathians (Romania)

I.N. ROBU AND L. ROBU

Geological Instutute of Romania, Caransebes str. 1, sector1, 012271, Bucuresti, Romania
(inrobu@igr.ro; lrobu@igr.ro)

Migmatitic rocks are widespread in the crystalline formations of South Carpathians, occurring from western (Semenic Mountains), to central (Sebes-Lotru and Fagaras Mountains) and eastern parts (Iezer-Papusa Mountains).

They are enclosed in different metamorphic series or tectonic units, their genesis being considered in connection with different geological events and phenomena. Therefore, there is no agreement about their origin.

Zircon, through its characteristics, could help to elucidate some problems connected to the origin of surrounding country rocks, taking into account its well-known resistance to chemical and mechanical weathering.

Our study of zircons from migmatites of the South Carpathians focuses on their morphological and optical properties, and attempts to address the origin of these types of rocks.

Morphologically, the zircons occur as a single type (*S* type), but a large variety of subtypes, each of them with very specific concentrations, have been observed.

In the Northern part of the Sebes Mountains, *S* is the exclusive morphological type, but others, as *G* and *P* types, accompany migmatites from the rest of the South Carpathians.

The most widespread subtypes, found in the majority of investigated samples, are $S_{16} - S_{17}$.

The proportion of *S, G* and *P* types is variable from West to East, the *S* type decreasing from the Sebes Mountains to the Iezer-Papusa Mountains.

Similar variations are apparent in optical properties: the majority of zircon crystals are light-dark pink, with a good to very good transparency. Light-dark brown and translucent crystals are minor in the western part of South Carpathians, but increase toward the East, such that these kinds of crystals are much more abundant in the migmatic rocks from the Iezer-Papusa Mountains.

Zoned and/or overgrown crystals are minor, and they are absent in the North Sebes migmatites.

Petrogenetically, zircon properties correspond mainly to the *crustal type,* especially for zircons in the North Sebes migmatites, but this feature decreases from West to East, so that in the Iezer-Papusa migmatites, the *mantle or mainly mantle component* becomes predominant.