

Ti-Zr- AND REE-MINERALIZATION ASSOCIATED WITH DOLOMITE-CALCITE CARBONATITES (THE MIDDLE URAL, RUSSIA)

BELKOVSKY, A. I., NESTEROV, A. R. (Institute of Mineralogy, Miass, Russia)
E-mail: bag@ilmeny.ac.ru

The high-pressure zone of the Ufaley metamorphic block (the Central Urals Rise, Middle Urals) is represented by mantle-crust eclogite-schistic melange. In the melange, mantle productions – “green” garnet clinopyroxenites and ore olivinites – have been altered into antigorite serpentinites. In the latter, bodies of magnetite-titanclinohumite-clinocllore rocks have been observed. From periphery to centre, the following zones were established: antigorite-titanclinohumite-chlorite. Central parts of the bodies are represented by Mn-picroilmenite-magnetite ore. In titanclinohumite, xenomorphic (10-150 μm) inclusions of baddeleyite, favas-baddeleyite, apobaddeleyitic zircon and perovskite were detected.

Baddeleyite, calzirtite, zirkelite, perovskite, zircon and previously unknown in carbonatites monazite-(Ce) and xenotime-(Y) have been found in the Mn-picroilmenite-magnetite ores. Superimposed on ultramafites, an exotic REE-mineralization was developed due to carbonatite-forming processes of dolomite-calcite facies. Titanclinohumite and Mn-picroilmenite-magnetitic rocks with zircon and rare-earth mineralization should be considered as mantle apoultrabasite fenites. The chemical composition of calzirtite, zirkelite and perovskite is closed to the stoichiometric; this feature distinguishes the investigated association from Nb-Ti-Zr-oxides camaforites of central type alkaline-ultrabasitic intrusions.