



Isotope Sm-Nd dating and geochemical features for rocks of the Kanozero alkaline massif (N-E Baltic Shield)

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Archaean alkaline rocks are widespread in the world [1]. Alkaline rocks including carbonatites, alkaline granites and syenites, lamprophyre dikes and sanukitoids occurs in the N-E Baltic Shield. New U-Pb ages on zircon from alkaline Zapadnokeivy, Ponoy, Belaya Tundra granites and Sakharjok alkaline and nepheline syenites located in Keivy terrane (N-E Baltic Shield) gave interval of rocks forming from 2.75 to 2.61 Ga. The coevals U-Pb zircon-baddeleyite ages have been obtained for Siilinjärvi carbonatites (Finland): 2613 ± 18 Ma and 2611 ± 10 Ma.

Kanozero massif with total area 170 km^2 is situated in Belomorian domain of N-E Baltic Shield and earlier was Proterozoic age. Kanozero massif rocks include alkaline granites and pegmatites with amazonite; country rocks are represented by garnet amphibolites with TTG [2]. The aim of investigations was geology-geochronology studying for rocks and minerals of the Kanozero alkaline massif.

After thin-section petrological study from alkaline granite for Sm-Nd and U-Pb isotope investigations rock-forming and accessory minerals were separated. All chemical Sm-Nd procedures were according to [3]. Isotope measurements were carried on the mass-spectrometer Finnigan MAT-262 (RPQ); blank of Sm 200 pg and Nd 300 pg. Sm-Nd isochrone on biotite, titanite and WR has shown age 1921 ± 53 Ma (MSWD=0.59), which was interpreted as time of metamorphic Svecofennian event. Model Sm-Nd WR age of Kanozero alkaline granite is about 2.84 Ga and negative $\epsilon_{\text{Nd}} -3.5$ shows the similar features with alkaline granites of the Baltic Shield. Conventional U-Pb age on zircon from alkaline granite of Kanozero massif gave Archaean magmatic age 2667 ± 36 Ma [4].

All Archaean alkaline rocks of the Baltic Shield have common geochemical and isotopic characteristics: model Sm-Nd ages about 2.9-2.8 Ga, negative value ϵNd (from -1 to -4), increased light REE with Eu-minimum. On the diagram ϵNd - ϵSr alkaline rocks of the Baltic Shield falls in the field of enriched EM2 mantle source [5].

New model Sm-Nd WR (2.84 Ga), negative ϵNd (-3.5) and U-Pb zircon isotope data enlarged scale of the Archaean alkaline magmatism in the N-E Baltic Shield.

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