

**Baddeleyite, zircon and sulfide from  
Paleoproterozoic layered PGE intrusions  
with Cu-Ni and Pt-Pd reefs: LA-ICP-MS  
data (Arctic region, Baltic Shield)**

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A new methods for determination in situ concentrations and distributions of REE, Y, Hf, U, and Th in zircon, baddeleyite and sulfides by LA-ICP-MS technique (ELAN 9000 DRC-e, 266 MACRO laser) are set up in order to study genesis of PGE deposits. At the first time were measured a large number of elements in zircon, baddeleyite and sulfides from key rocks of the Baltic shield Arctic region.

Single grains of baddeleyite, zircon and sulfides were separated from gabbronorites, anorthosites and dykes complexes on low sulfides Monchegorsk (2.5 Ga), Fedorovo-Pansky (2.5-2.45 Ga) and Pechenga (1.98Ga) ore regions with Pt-Pd and Cu-Ni reefs. New LA-ICP-MS investigations of REE and Ti concentrations in zircon (less than 900<sup>0</sup>C) and baddeleyite (more than 1000<sup>0</sup>C) grains are reflected U-Pb closure temperatures [Watson, 2006] and crystallization accessory minerals from Cu-Ni reefs (Table 1). New measurements of REE concentrations and distributions by laser ablation techniques in chalcopyrite of Pechenga Cu-Ni reefs are verity from 1.45 to 15.3 ppm and nevertheless content of LREE and HREE are equals.

Sample	Content in grain, ppm					
	Hf, %	Ti	Th	U	Y	ΣREE
1	<u>0.30</u>	<u>469</u>	<u>2.8</u>	<u>68.2</u>	<u>230</u>	<u>239</u>
	0,75	1212	73,8	213	849	772
2	<u>0.14</u>	<u>260</u>	<u>12.6</u>	<u>58.2</u>	<u>109</u>	<u>144</u>
	0,56	879	32,9	114	336	291
3	<u>0.30</u>	<u>940</u>	<u>2.8</u>	<u>136</u>	<u>20.4</u>	<u>18.1</u>
	1,79	6015	27,6	1057	133	150

**Table 1:** Estimated concentrations of REE and other elements in grains of baddeleyite from Pt-Pd and Cu-Ni reefs of the Monchegorsk ore area (min/max).

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