

Untraditional Ore Rocks – the Main Future Resources or Platinum Group Metals

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The rising demand for platinum and other PGE by modern technologies may not be satisfied within the nearest decades due to the ores stocks in the explored deposits .

The study we have conducted indicates all PGE being highly mobile within the varied crust processes resulting in the formation of the local concentrations of individual platinoids and their groups. Studying differently aged ore formations in Kazakhstan, Uzbekistan, Russia (Kolski region, Caucasus, Yakut) and Ukraine have made it possible to identify platinoid ore concentrations within different geological environments that were not considered platinum-containing before. The data received as a result of analysing over 20,000 samples allow us to develop a geological-and-genetic classification of PGE deposits.

Two types of concentration are seen as most promising in search of new types of PGE ore:

1. Those related to the metasomatic ores of rare metals, gold, uranium, from which PGE may be extracted in line with the basic components (their contents being a total of 0.1-1 ppm);
2. Those localising in organic shale rocks-containing and alewife river delta sediments and continental slopes, the sections of which now display initial PGE marks. In the ore deposits of one such continental slope site, the contents of gold, platinum, palladium and rhodium in modern silt amounts to a total of 3 to 40 ppm. Higher PGE concentrations are also typical for some continental clayish pan that have taken shape due to slow washout and weathering in a humic environment.