

Residue of the most ancient Fe-Mn crust in Pacific ocean - geochemistry of the trace elements.

ALEX ASAVIN¹, MICHAEL MELNIKOV²,
 MARIA ANOSOVA¹, VALERY SENIN¹, SERGEY PLETNEV³
 AND VLADIMIR IVANOV²

¹Vernadsky Institute of Geochemistry RAN, Moscow, Russia,
 aalex06@inbox.ru

²GNTs FGUGP Yuzhmorgeologiya, ul. Krymskaya 20,
 Gelendzhik, 353461 Russia, melnikov@ymg.ru

³Far Eastern Branch, RAS, pletnev@poi.dvo.ru

History of the Fe-Mn crusts on the Pacific ocean seamounts gets to maximum about 100 million years. One of the most ancient samples were discovered from the drillhole on the guyot Butakova. Paleontological analysis of plankton foraminifera showed age - senoman, 99.6 mln. (species – Rotalipora, Praeglobobotruncana, Whiteinella, Dicarinella, Hedbergella, Globigerinelloides, trace Planomalina, Clavhedbergella, Schackoia).

We have carried out electron microprobe and laser ablation ICP-MS analyses Fe-Mn crust in cross section of microlayers. The variation of composition is insignificantly. The result demonstrated on Figure: upper – concentration normalised on chondrite (Sun 1980) and down – normalised on Australian Archey shale (PAAS Taylor & McLennan 1985).

Our results show that major and trace element compositions of substance is very specific. Uniform shape level REE spectra, high P₂O₅ and Ba concentration, Th/U ratio about 1-2. This is the evidence of the strong difference between start conditions to form Fe-MN crust and situation in the ocean during Cenozoic.

The project has been sponsored by RSF grant No. 14-17-00200.

