ON THE RESULTS OF PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES (GeoPT23/September2008)

Kubrakova I.V., Tyutyunnik O.A., ChkhetiaD.N., Krigman L.V. (GEOKHI RAS)
kubrakova@geokhi.ru

Key words: *proficiency testing programme, manganese nodule, pegmatite*

Every year International Association of Geochemists (IAG) conducts a round of proficiency testing programme for analytical geochemistry laboratories (GeoPT). The programme is designed to be part of the routine quality assurance scheme of analytical geochemistry laboratories. Dozens of laboratories take part in the programme anonymously. Data obtained are statistically treated, making possible to estimate metrological characteristics of the determination of each component and overall performance of the laboratories. Results and terms of testing programme are published on the site: *www.geoanalyst.org.*

On 2008, two samples prepared at the Open University, were distributed for the round: a pegmatite OU-9 and a manganese nodule FeMn-1. Corresponding analytical results obtained by the authors, are presented in the paper.

Determination of rock-forming components was carried out by spectrophotometric methods after sample fusion, of macro- and some microcomponents – by ICP-AES after acid digestion, of REEs - by ICP-AES after separation of matrix components with anion exchanger, of PGMs and Au – by slurry ETAAS after sorption preconcentraton. The scheme of analysis is given in Fig.1.

The samples of pegmatite OU-9 and manganese nodule FeMn-1 have been analyzed in 80 laboratories allover the world. Statistically significant results were obtained for 38 and 47 elements, correspondingly. We determined 33 and 44 elements. A range of elements and their concentration level are given on Fig. 2, 6. On Figs 3-5, 7-9 a comparison of our results with statistically treated data of all participants is shown. Easy to see a good correlation for most of macro- and microcomponents, that confirms an applicability of the techniques chosen for the analysis and a high quality of analytical work.

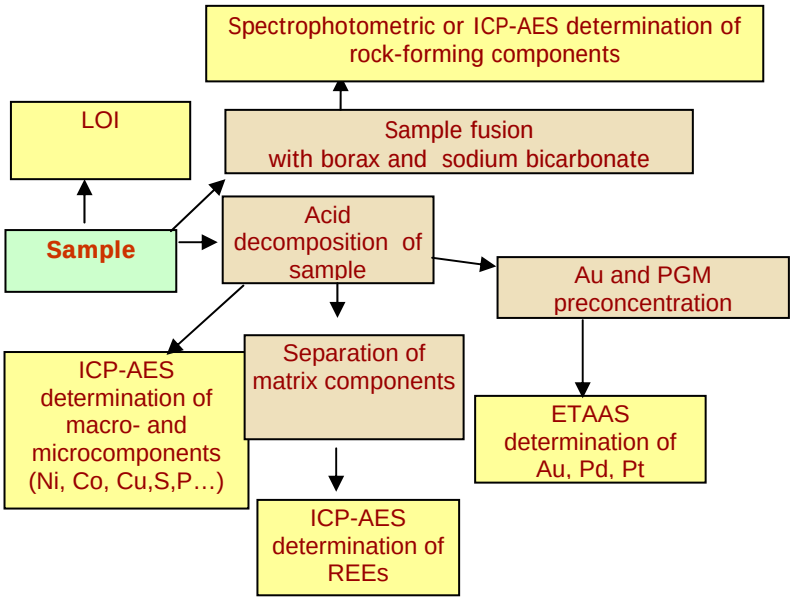


Fig.1. Analytical scheme

Fig.2. GEOPT 23 A Elements determined in a manganese nodule sample FeMn-1

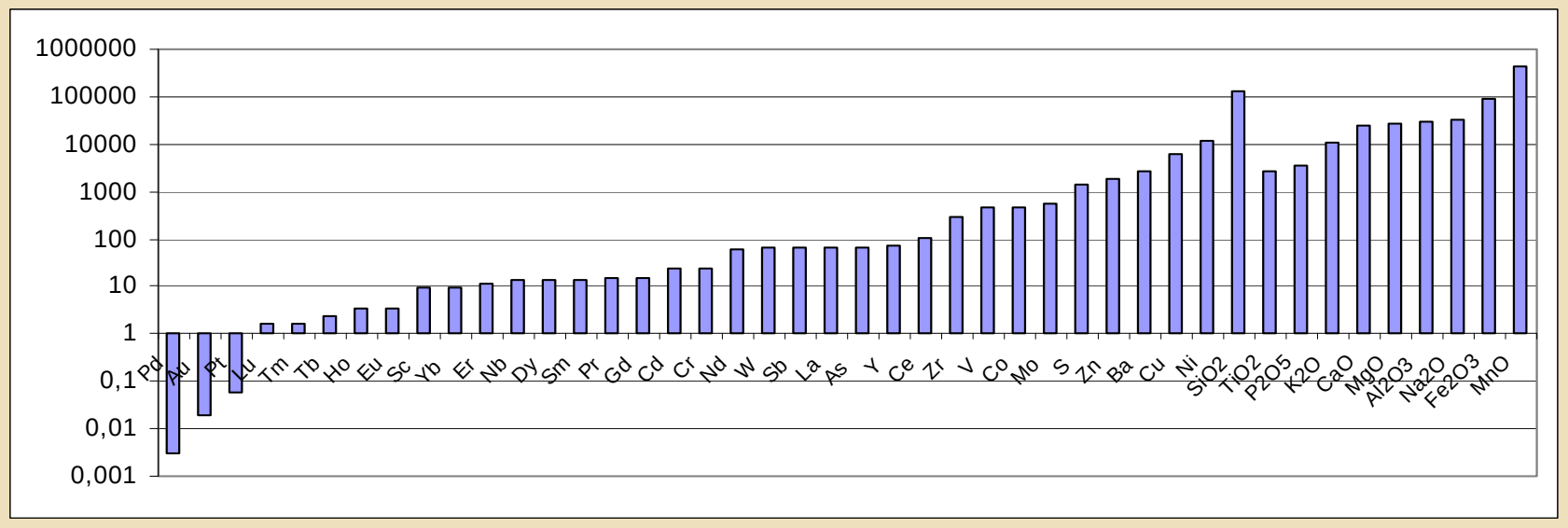


Fig.3. Macrocomponents

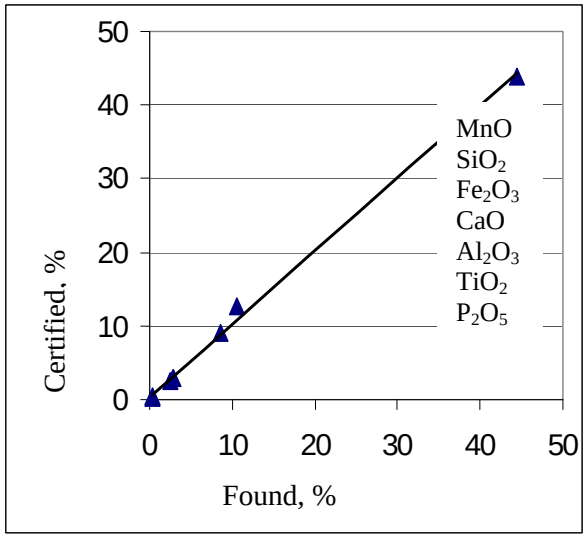


Fig.4. Microcomponents

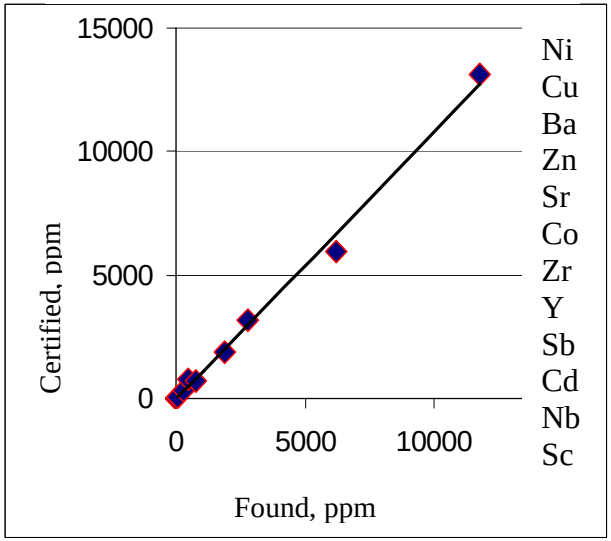


Fig.5. REEs normalized on shale NASC

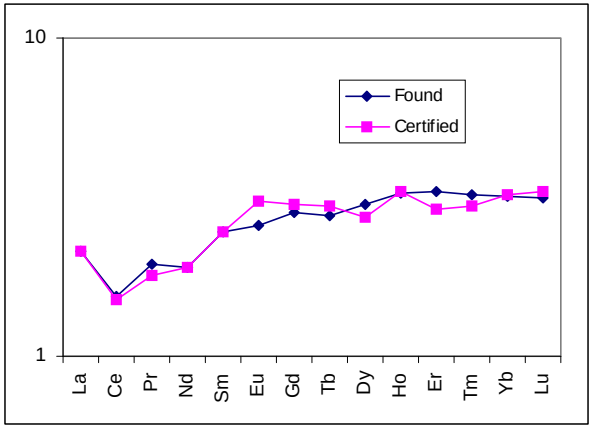


Fig.6. GEOPT 23. Elements determined in a pegmatite sample OU-9

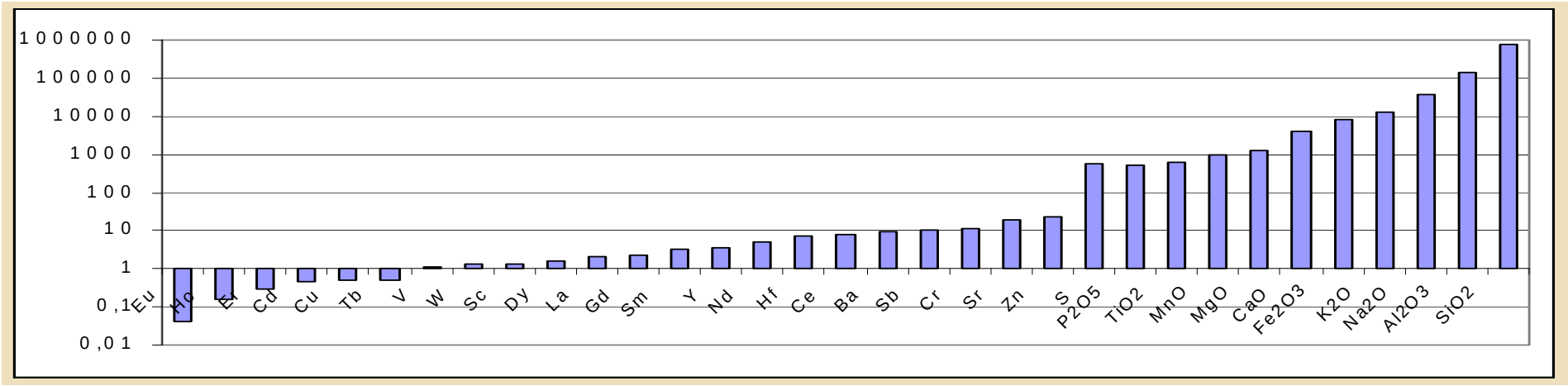


Fig.7. Macrocomponents

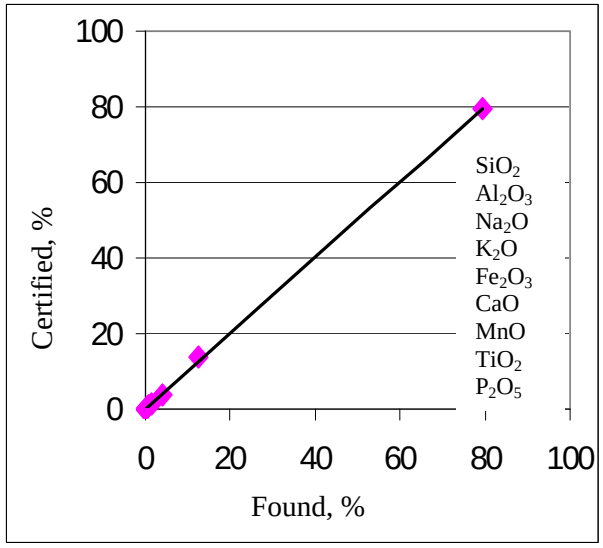


Fig.8. Microcomponents

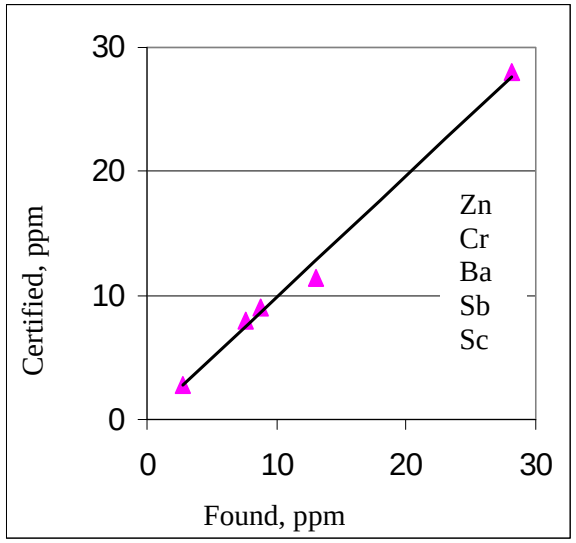
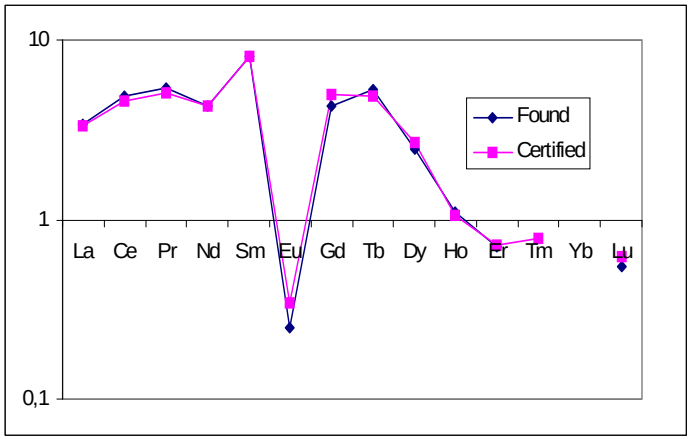


Fig.9. REEs normalized on chondrite



Electronic Scientific Information Journal "Vestnik Otdelenia nauk o Zemle RAN" № 1(27)'2009
ISSN 1819 – 6586
Informational Bulletin of the Annual Seminar of Experimental Mineralogy, Petrology and Geochemistry – 2009
URL: http://www.scgis.ru/russian/cp1251/h_dgggms/1-2009/informbul-1_2009/elaborate-3e.pdf

Published on July, 1, 2009