



Comparison of two Microwave assisted Decomposition Procedures and two Separation Procedures for Determination of Lanthanides in Sediments by EDXRF Method

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In order to analyze lanthanides in sediments the following two microwave decomposition procedures were applied: a) treatment of the sample with concentrated HNO_3 (solid/liquid 1:10) and b) treatment of the sample with aqua regia (solid/liquid 1:10). Obtained solutions were subjected to chemical separation from the major matrix elements in order to avoid overlapping of the characteristic L X-ray lines of the lanthanides present in sediments in relatively low concentrations with respective K X-ray lines of more abundant elements like Ti, V, Cr, Mn, Fe. A standard separation procedure on DOWEX 50W-X8 resin was compared with the new one based on the usage of TRU spec resin (EiCrhom). Percentages of recovery of each lanthanide after separation on these two resins were compared. Separated lanthanides were pre-concentrated with ammonium pyrrolidine dithiocarbamate (APDC) chelating agent at pH 8 and analyzed by EDXRF method as thin targets over their characteristic $L\alpha$ X-ray lines.