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Implementation and application of a method of separation of rare earth elements by ion exchange and subsequent determination by ICP-AES and ICP-MS

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The great interest in rare earth elements (ETR) is due to the many and valuable applications that these elements have in the science and economy of many countries. On the other hand highly sensitive methods are generally required for the determination of these elements in many of the matrices of interest such as geological samples. An alternative is to apply chemical separation procedures, prior to analysis.
In the present work, model experiments were performed to study the ETR separation performance of Cr, Fe, Ni and some elements of the alkaline earth and platinum groups by cation exchange in HCl medium. The final determination in the eluates was carried out by Inductively Coupled Plasma Atomic Emission Spectrometry (EEA-ICP). The elaborated method was used in the ETR analysis in 100 geological samples supplied by the Institute of Geology and Paleontology of MINEM. In the latter case, the determination of ETR was performed by Inductively Coupled Plasma Mass Spectrometry (ICP-MS). An analysis of the obtained results is presented in the work

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