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1 Instrumental neutron activation analysis of extraterrestrial materials

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Extraterrestrial materials are mostly samples of lunar rocks, stony and iron meteorites, and ultra-refractory inclusions of carbonaceous chondrites. The determination of their chemical and mineralogical composition and, particular, the determination of trace elements provide difficulties, because these samples usually contain a small mass and dimensions. Applied methods of analysis should meet stringent quality criteria. Instrumental Neutron Activation Analysis (INAA) is one such method*. A procedure of optimization of INAA was therefore developed for analysis of samples of cosmic origin. This procedure based on data of the preliminary simulation of gamma-spectra of samples of the specified composition. The approach was justified by comparing the results obtained with the published data.

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*G.M. Kolesov. Neutron activation analysis of environmental materials. Analyst, May 1995, Vol., 120, P. 1457.