

Characterization of Mobile water mass-spectrometer for direct analysis metals in water samples

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The results of testing of portable magnet mass spectrometer designed for direct determination of metals in water samples is considered. Sample introduction, compound extraction and measuring processes are carried out automatically in the instrument. The ion source construction was designed to supply high electron impact ionization efficiency for the molecules, which were desorbed from the inlet system extractor. Desorption temperature ($20^{\circ}\text{C}\div 1500^{\circ}\text{C}$) of the extractor surface is held according to the types of compounds measured. To supply reliability of the identification process and to increase the mass spectrometer sensitivity, the same mass spectrum sub ranges were scanned at different desorption temperatures. The results of testing of the instrument with Zn, Cu, Fe, Cd, As in a water sample are presented. The correlation between the pH variation of a sample and instrument sensitivity are discussed.