

## **Abstract**

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Name of Thesis: Preconcentration of hydride forming elements in quartz trap with ICP-MS detection

The aim of this thesis are pilot experiments employing quartz trap (QT) for preconcentration of hydride forming elements and their subsequent detection by inductively coupled plasma mass spectrometry (HG-QT-ICP-MS). Arsenic and antimony were chosen as model analytes. Preconcentration efficiency on quartz surface was studied in a trap, which was integrated into an interface between spray chamber and plasma torch.

We have identified a critical loss of analyte during transportation, instability of the plasma due to sudden change of gas composition, poor repeatability and very quick release of Sb from the trap resulting in difficult quantification of Sb signal.

Despite the efforts to resolve these experimental problems, so far we were unable to achieve improvements in analytical parameters compared to standard analytical methods.

Keywords:

Preconcentration, quartz trap, mass spectrometry with inductively coupled plasma, hydride generation, arsenic, antimony