Contribution ID: **127** Type: **Poster**

In-beam neutron activation analysis at FRM II, Garching

Monday, 12 May 2014 17:15 (1h 30m)

The thermal equivalent neutron flux at the prompt gamma activation analysis (PGAA) facility at the Forschungsneutronenquelle (FRM II) at Garching, Germany is 6x1010 cm–2 s–1 which is the highest beam flux reported. This beam intensity is already strong enough to activate samples for the purpose of neutron activation analysis (NAA), too. This option has been used together with PGAA simply performing decay counting after switching off the beam using the same spectrometer used for the in-beam measurement, and proved to be useful in the case of a handful of elements, like Na, Mn etc. The main advantage of in-beam activation is that the beam contains no epithermal or fast neutrons, thus realizing activation in its purest form. Many elements, like Al, Sb, or Ge could not be analyzed in this way, because they appear in the spectral background. Recently, a low-background counting chamber has been installed a few meters away from the PGAA instrument using a 30-% HPGe detector equipped with a mechanical cooler and covered with 10 cm of lead, boron and lithium-containing sheets against neutrons and tin to attenuate lead x-rays. The background conditions are much better for this spectrometer, at the same time the counting efficiency is also higher. This enables us to analyze a larger number of elements off-line. The first results will be presented at the conference.

Primary author: Dr KLESZCZ, Krzysztof (Technische Universität München, Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II))

Co-authors: Dr KUDEJOVA, Petra (Technische Universität München, Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II)); Dr REVAY, Zsolt (Technische Universität München, Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II))

Presenter: Dr KLESZCZ, Krzysztof (Technische Universität München, Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II))

Session Classification: Poster Session - Nuclear Analytical Methods

Track Classification: Nuclear Analytical Methods