

IN-BEAM NEUTRON ACTIVATION ANALYSIS AT MLZ

Tuesday, 16 June 2015 11:40 (20 minutes)

Prompt gamma activation analysis (PGAA) at MLZ has been successfully applied for the analyses of a large variety of samples even with masses less than a milligram, as well as for the investigation of low-cross-section nuclides and radioactive targets. Recently, a low-background counting chamber has been installed next to the PGAA instrument thus enabling the counting of induced radioactivity. Since the flux is almost as high as that in smaller reactors ($6 \times 10^{10} \text{ cm}^{-2} \text{ s}^{-1}$), it can efficiently be used for traditional neutron activation analysis. PGAA and NAA complement each other, the first one provides the matrix composition, while the second one the trace elements, however their common potential has just partly been explored.

Liquid-scintillation counting of nuclides emitting charged particles induced by cold neutrons has been tested, too. The objective of this development is to increase the sensitivity of in-beam analysis for lithium, boron, and nitrogen.

Primary author: REVAY, Zsolt

Co-authors: Dr KLESZCZ, Krzysztof (TUM, FRM2); KUDEJOVA, Petra

Presenter: REVAY, Zsolt

Session Classification: Material Science

Track Classification: Material Science