



INVITATION

for a

VERA - SEMINAR

with

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Element analysis with PIXE/PIGE nowadays

By exploiting specific phenomena from interaction of an accelerated ion particle with material in question, a variety of information can be obtained. The IBA (Ion Beam Analytical) techniques most frequently used are Particle-Induced X-ray Emission (PIXE) and Particle-Induced Gamma-ray Emission (PIGE). The ability to probe elemental compositions within any material has particular significance for research in biology, archaeology, material science, medicine, food science, pharmacy, forensics etc. Most importantly, it is not necessary to make samples electrically conductive, as is the case with some other methods, for example EDS (Energy Dispersive Spectroscopy) with the electron beam. IBA's great advantage is the ability to probe for heavy elements, in which many other comparable methods fail. Since the damage induced on the samples by PIXE/PIGE is manageable, it is therefore very suited for the analysis of sensitive samples where trace element concentrations down to 1 $\mu\text{g/g}$ are expected.

Recently, the majority of research utilizing the PIXE technique is in the domain of biology and biomedical research where IBA techniques are integrated into a nuclear microprobe. There, the techniques are combined with beam focusing and scanning manipulation hardware. The major use of PIGE technique recently is in combination with PIXE in the cultural heritage field, where in-air PIXE is the most appropriate technique for probing the elemental concentrations in various works of art.

Thursday, 5. December 2024, 16:30 o'clock

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Victor-Franz-Hess Hörsaal**