
Tuesday, 17.02.: Stephaniensaal

Plenary Lectures

Chair: Detlef Guenther

- 09:00 Hann S, Koellensperger G
Recent applications of ICPMS in environmental and biological research
- 09:30 Koch J, Waelle M, Heiroth S, Lippert T, Guenther D
Fascinating and frustrating aspects of femtosecond laser ablation inductively coupled plasma mass spectrometry - a progress report

Session Laser Ablation I

Chair: Detlef Guenther

- 10:00 van Elteren J T, Triglav J, Šelih V S , Živin M
Modeling of the LA-ICPMS surface rastering procedure to optimize elemental imaging
- 10:15 Hola M, Mikuska P, Konecna V, Kaiser J, Hanzlikova R, Kanicky V
Properties of aerosol particles generated during 213 nm laser ablation: A study of compact and powdered tungsten carbides as materials with a two-component matrix

Coffee Break (kindly sponsored by Lactan)

Session Laser Ablation II

Chair: Detlef Guenther

- 11:00 Resano M, Garcia-Ruiz E, Aramendia M, Vanhaecke F
LA-ICPMS in archaeometric research
- 11:15 Prohaska T
Friedrich Schiller: Forensic investigation of a cold case by LA-MC-ICPMS
- 11:30 Hubova I, Hola M, Vaculovic T, Pinkas J, Prokes L, Steffan I, Kanicky V
Laser ablation inductively coupled plasma mass spectrometry analysis of agricultural soils using the sol-gel technique of pellet preparation
- 11:45 Šelih V S, van Elteren J T, Tennent N H , Orsega E F
Multi-element quantification of ancient glasses by LA-ICPMS using sum normalization calibration

Lunch / Guided City Tour

Laser ablation inductively coupled plasma mass spectrometry analysis of agricultural soils using the sol-gel technique of pellet preparation

Hubova I, Hola M, Vaculovic T, Pinkas J, Prokes L, Steffan I, Kanicky V

Masaryk University, Faculty of Science, Department of Chemistry, Laboratory of Atomic Spectrochemistry, Brno, Czech Republic

Monitoring of metals in agricultural soils is gaining importance as they are accumulated by plants. A LA-ICPQMS method with Nd:YAG 213 nm laser has been developed for determination of Cr, Ni, Cu, Zn and Pb in soil pellets prepared by the sol-gel technique. LA-ICPMS analysis of archive samples was verified by XRF of wax-soil pellets and ICPMS with nebulization of solutions obtained by total soil decomposition and by analysis of reference materials. Sequektion extraction was used for fractionation analysis.

Multi-element quantification of ancient glasses by LA-ICPMS using sum normalization calibration

Šelih V S, van Elteren J T, Tennent N H, Orsega E F

National Institute of Chemistry, Analytical Chemistry Laboratory, Slovenia

LA-ICPMS for the quantitative analysis of ancient glasses is subject to calibration issues which have been addressed in this work. We will demonstrate that complementary analysis for internal standardization is unnecessary by applying a so-called sum normalization calibration technique by simultaneously measuring 54 elemental oxides and normalizing them to 100% w/w. Crucial to this approach to assume a random internal standard concentration (e.g. $[\text{SiO}_2]$), and to let the normalization algorithm find the internal standard concentration and all other oxide concentrations, based on external calibration with several glass standards replicating historic compositions. Data regarding evaluation and application will be shown.

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