

**Desorption Mass Spectrometry:
A Powerful Tool for Analysis of Molecules and Elements**

Jan Preisler

Masaryk University, Faculty of Science, Department of Chemistry

Mass spectrometry is an essential analytical technique for protein research and the study of biomolecules in general. Driven by the need to identify, characterize, and quantify analytes at ever increasing sensitivity and speed, a range of new mass spectrometry-based analytical platforms and experimental strategies has emerged.

In this lecture, an approach based on laser desorption ionization and time-of-flight (TOF) mass spectrometry will be revealed. Presented applications, coupling with column separation techniques and mass spectrometry imaging, benefit from high sample throughput achieved due to efficient exploitation of the TOF mass analyzer speed. The TOF analyzers are naturally combined with matrix-assisted laser desorption/ionization (MALDI), which is applied for analysis of both large and small molecules. Moreover, the samples prepared for MALDI are ready for elemental analysis using a variation of laser ablation inductively-coupled plasma mass spectrometry.