Laser-Ablation Microanalysis
Advanced Analytical Technologies (Lab 502)

As a result of fungal surface growth wooden façades in the process of outdoor weathering may quickly lose their aesthetic appearance. Development of an effective environmentally friendly surface treatment based on a laccase-catalyzed wood iodination is the aim of an applied research project.

To gain more information regarding the localization and concentrations of the treatment agents, different analytical tools are necessary. In the past this task was covered by Microprobe elemental mappings (SEM-WDX). Since the region of interest has to be limited and the measurement is fairly costly and time consuming, other analysis techniques are needed.

Laccase-catalysed iodide oxidation in the presence of lignocellulose leads to a non-leachable antimicrobial wood surface which is highly resistant against colonization by different classes of heterotrophic microorganisms. As preliminary test cross-section of potassium iodide impregnated spruce samples with three concentrations were measured with LA-ICP-MS & LIBS. Secondly the sample was measured by depth profiling with LA-ICP-MS. To compare the reduction of the different impregnation concentration by the leaching effect a third measurement was performed.

**References**
