Department of Applied Chemistry
2026/2027. I. semester

Dr Nagy Lajos

(Chemical Engineering BSc)

Mass spectrometric study of low molecular weight and biologically active compounds, 2 person

During the work fragmentations of several molecules with low molecular weight are studied under soft ionization conditions. The typical fragmentation pathways are determined based on the MS/MS spectra obtained, furthermore the characteristic collision energies are calculated. The product ions detected in the MS/MS spectra are identified and based on the results fragmentation mechanism is suggested.

(Chemical Engineering BSc)

Mass spectrometric analysis of polymers and their kinetic studies, 2 person

During the work studies of several industrially important polymers were studied by mass spectrometry. The number and weight average molecular weights and end groups of polymers are calculated and identified, moreover, the optimal ionization conditions are determined. The kinetic studies of polymers with reactive functional groups (such as -OH, $-NH_2$) are also achieved in the presence of isocyanates (for instance MDI) which are significant in the polyurethane chemistry.

Dr. Kuki Ákos

(Chemical Engineering BSc)

Application of free chemical engineering software

Free calculators and process simulators allow chemical engineering students and chemical engineers to better understand the behavior of their chemical systems by using rigorous thermodynamic and unit operations' models with no cost at all.