VSB TECHNICAL UNIVERSITY OF OSTRAVA | CENTRE FOR ENERGY AND ENVIRONMENTAL TECHNOLOGIES | NANOTECHNOLOGY CENTRE

Gas Chromatograph with Mass Spectrometer Flame Ionization Detector (FID), and Headspace Sampler

This analytical platform is designed for the detailed characterization of volatile and semi-volatile organic compounds in liquid samples and sample headspace. The technique separates complex mixtures in the gas phase and combines this separation with spectrometric identification and quantitative signal evaluation. The system supports both compound identification and concentration determination using chromatographic retention behavior, together with spectral library matching. A flame ionization detector complements the mass-selective detector and provides a robust quantitative response for organic species. Automated headspace sampling enables efficient analysis of volatile components released from complex matrices while minimizing sample preparation steps.

Key Features

- GC–MS analysis of volatile and semi-volatile organic compounds
- Dual detection using mass spectrometry and a flame ionization detector
- Automated headspace sampling for volatile fractions
- Library-supported compound identification and calibrated quantification
- Suitable for VOCs, fuels, flavors, pesticides, and derivatized analytes

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