

On-line Tar Analysis with GC and Electron- / Laser-Ionization Mass Spectrometer

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1. Application of Laser ionization (LI)

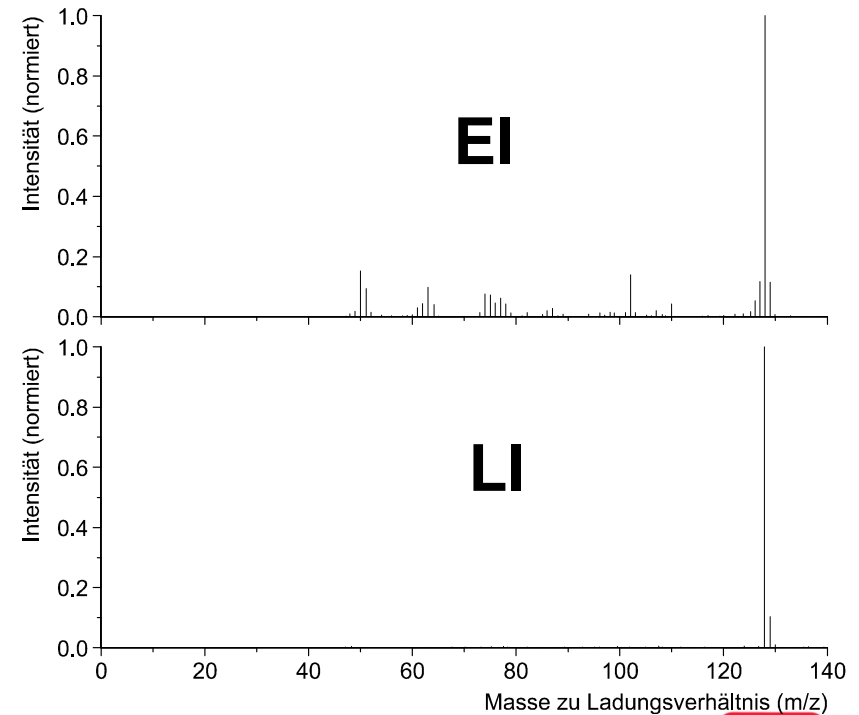
- Acceleration of measurement by shortening GC-separation
- Molecule ion peaks with very little or no fragmentation – „soft“-ionization

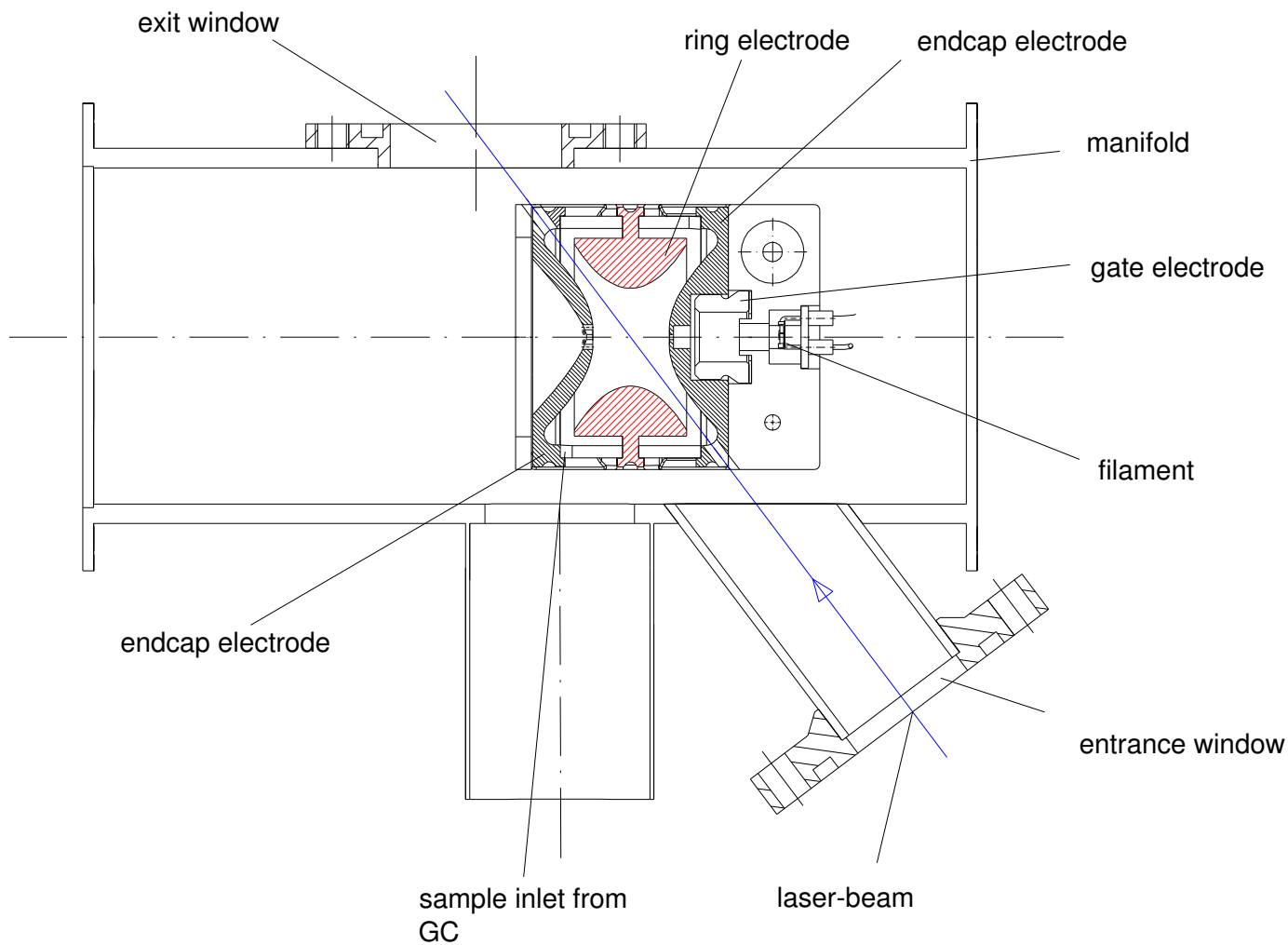
2. Online connection of GC/MS with EI/LI to gasifier

- Real online measurements
- Comparison of EI and LI with real gas

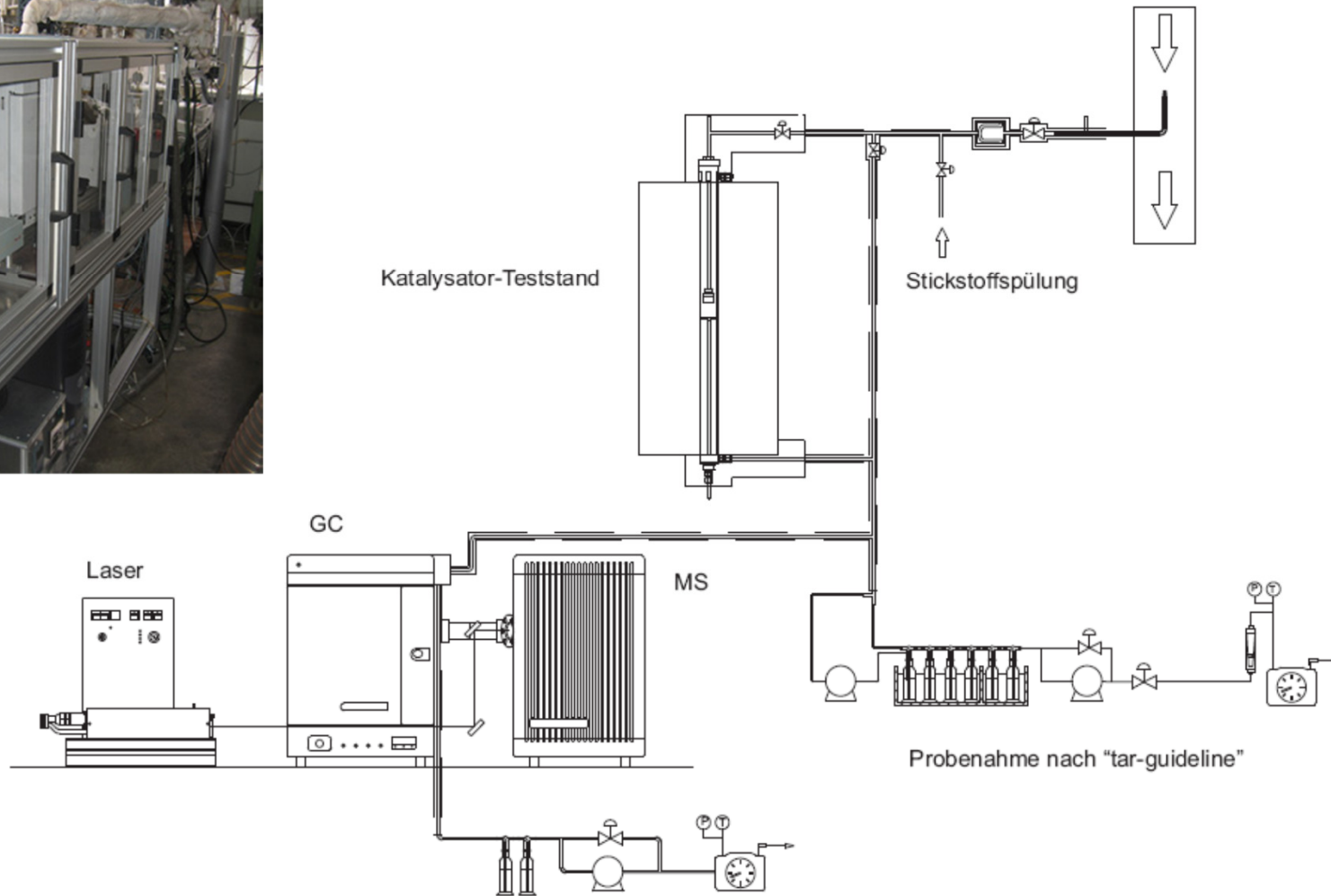
3. „transportable“ system for field measurements

- hard to achieve with this system (it has wheels!)

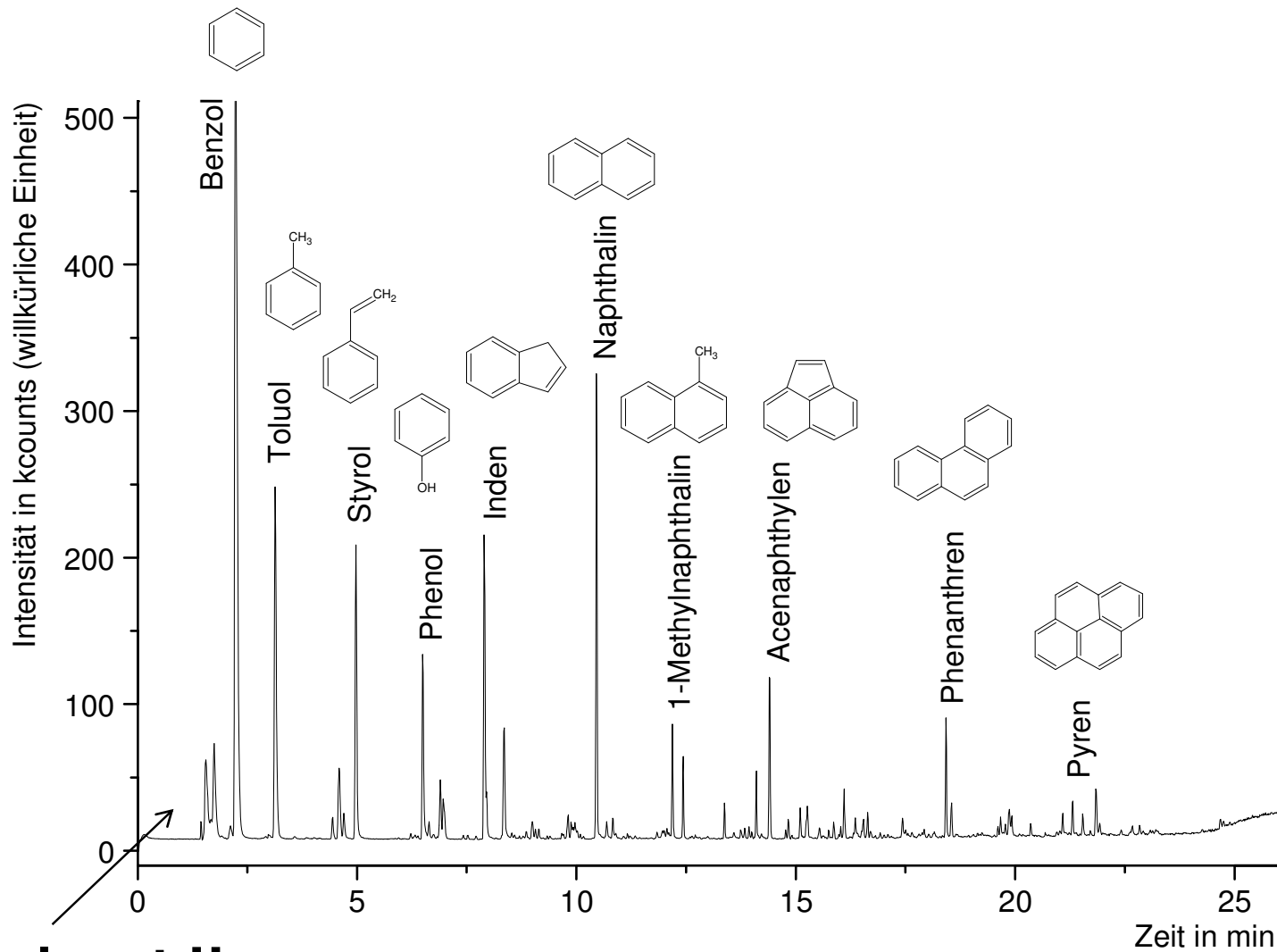




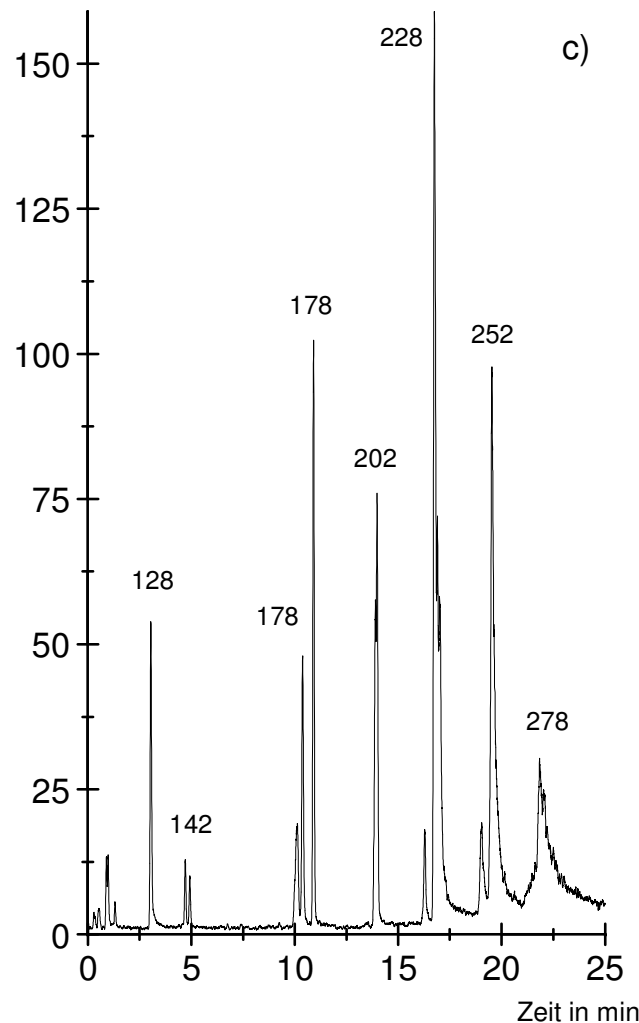
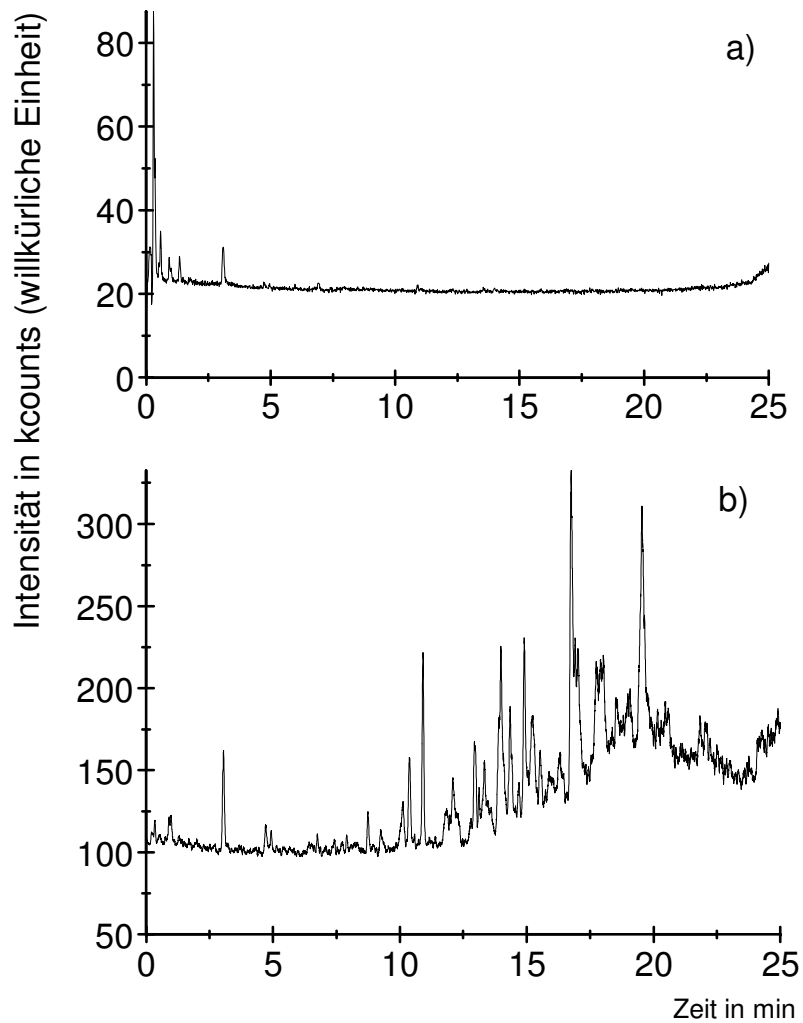
EVUR Online GC/MS with Laser ionization



EVUR Principle results (EI) – online measurement

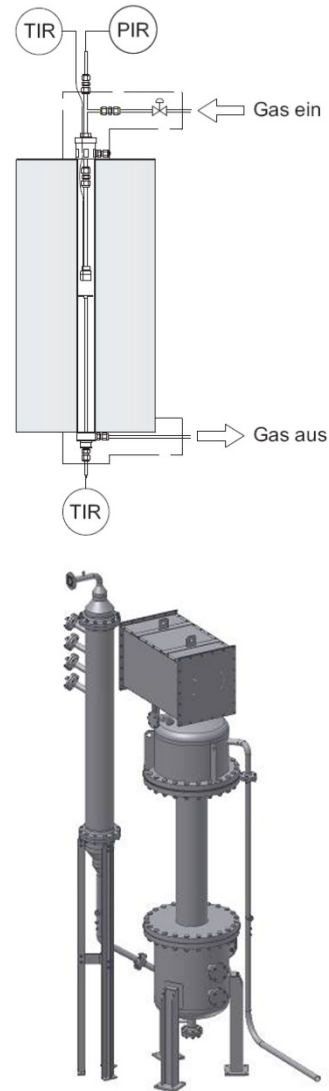
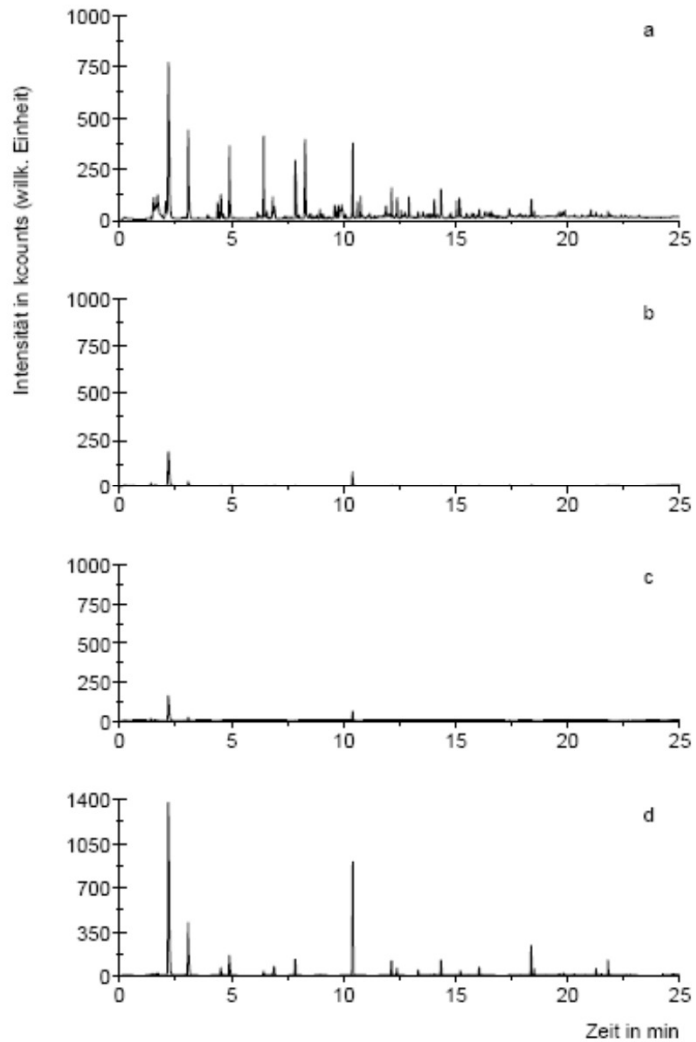


No solvent !!

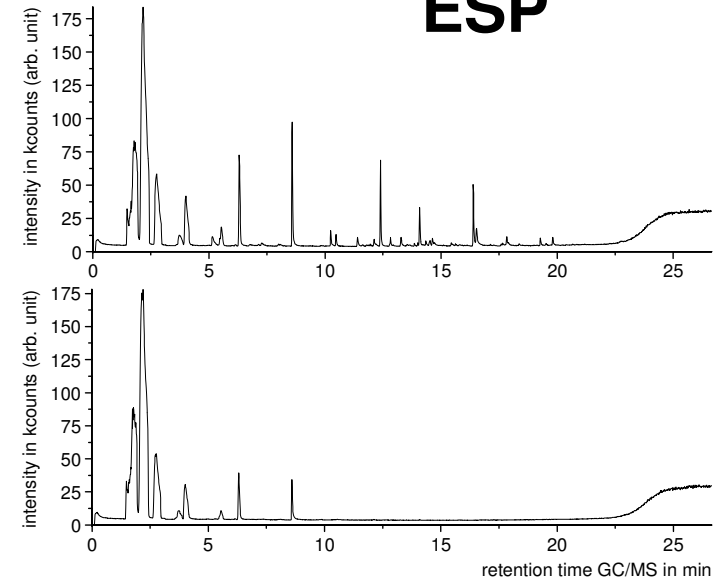


- a) RIC EI
- b) RIC LI
- c) Ion track LI

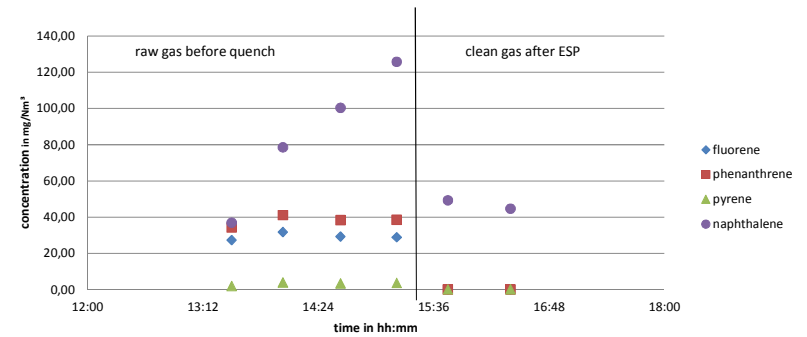
Catalyst behavior



ESP



Concentrations of selected tar species before and after Quench/ESP



1. Current usage

- acquisition of detailed tar composition every 30 minutes; (EI) for complete tar spektrum
- Validation tool for fluorescence measurements
- Online tar analysis for catalyst examination
- Online tar analysis before and after gas cleaning devices

4. Future work (system is at final useable state, Laser could be exchanged)

- Monitoring of selected species with GC / LAMS at higher sampling rate and comparison with CON-TAR
- Comparison to reference methods in more detail

**Thank you for your interest
and your attention !**