

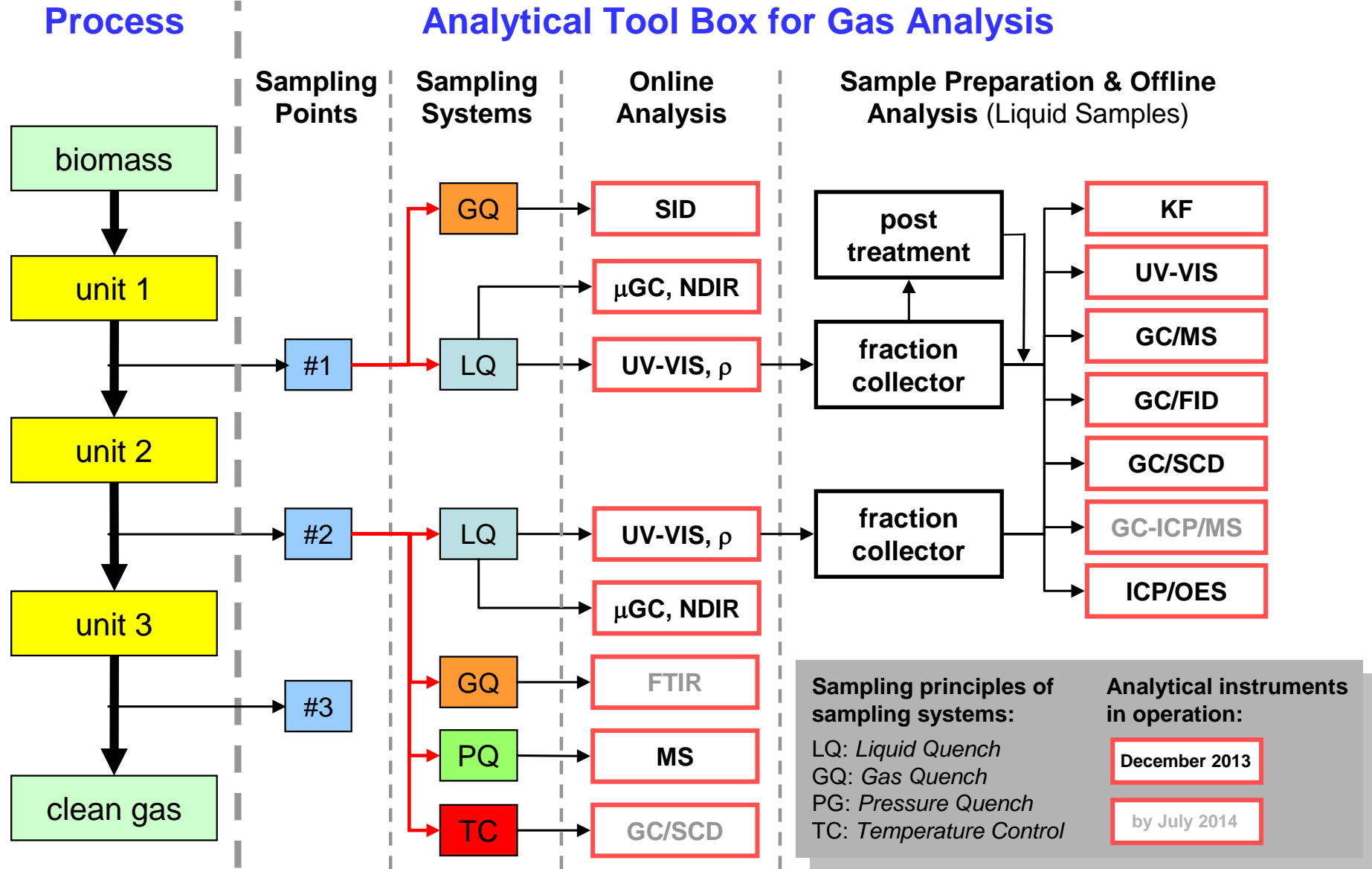


Wir schaffen Wissen – heute für morgen

Paul Scherrer Institut

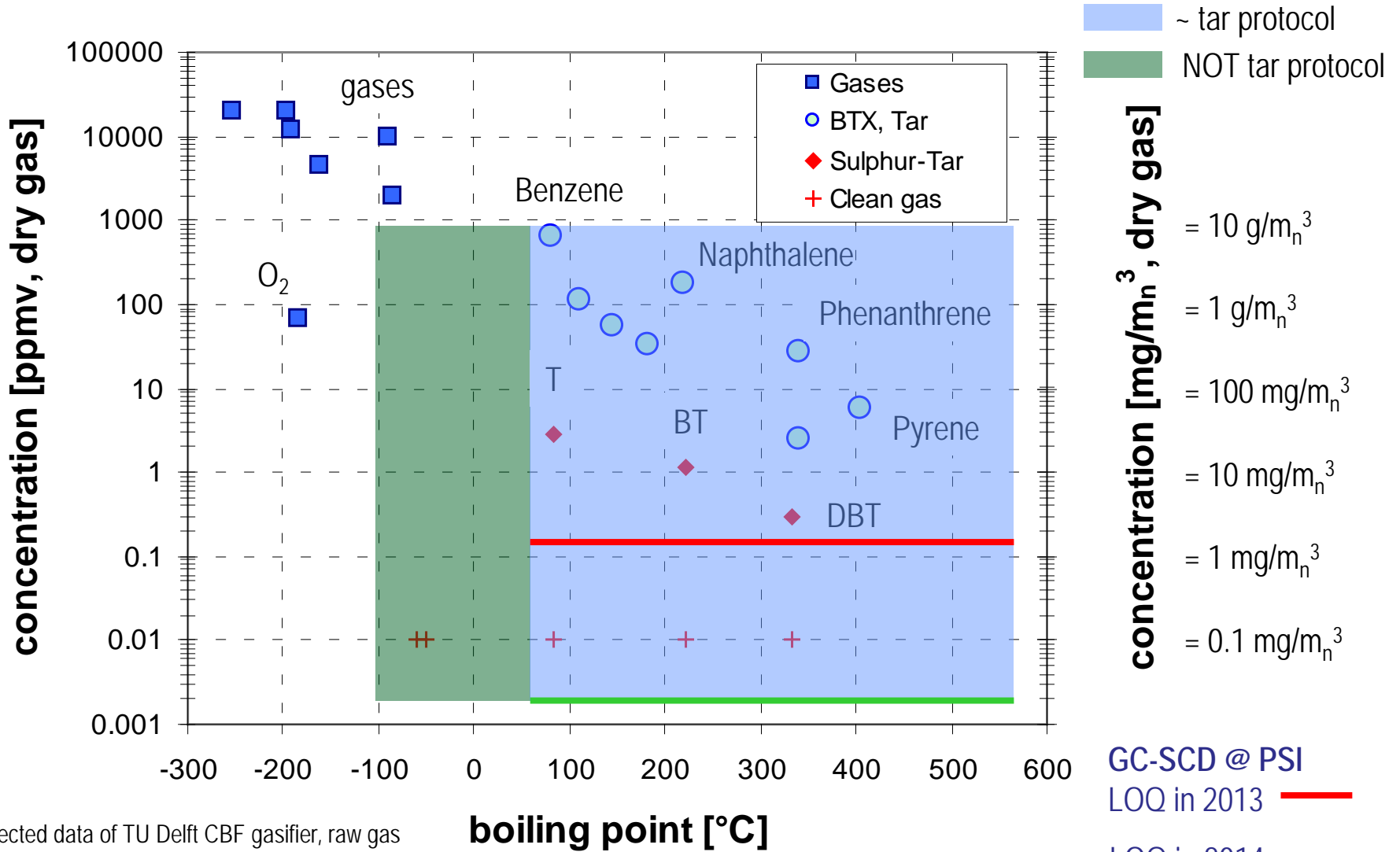
Serge Biollaz

**Sampling, sample treatment and analysis for tars
and sulphur tars measurement (BTX, PAH, PASH)**



PAH: Polycyclic aromatic hydrocarbons

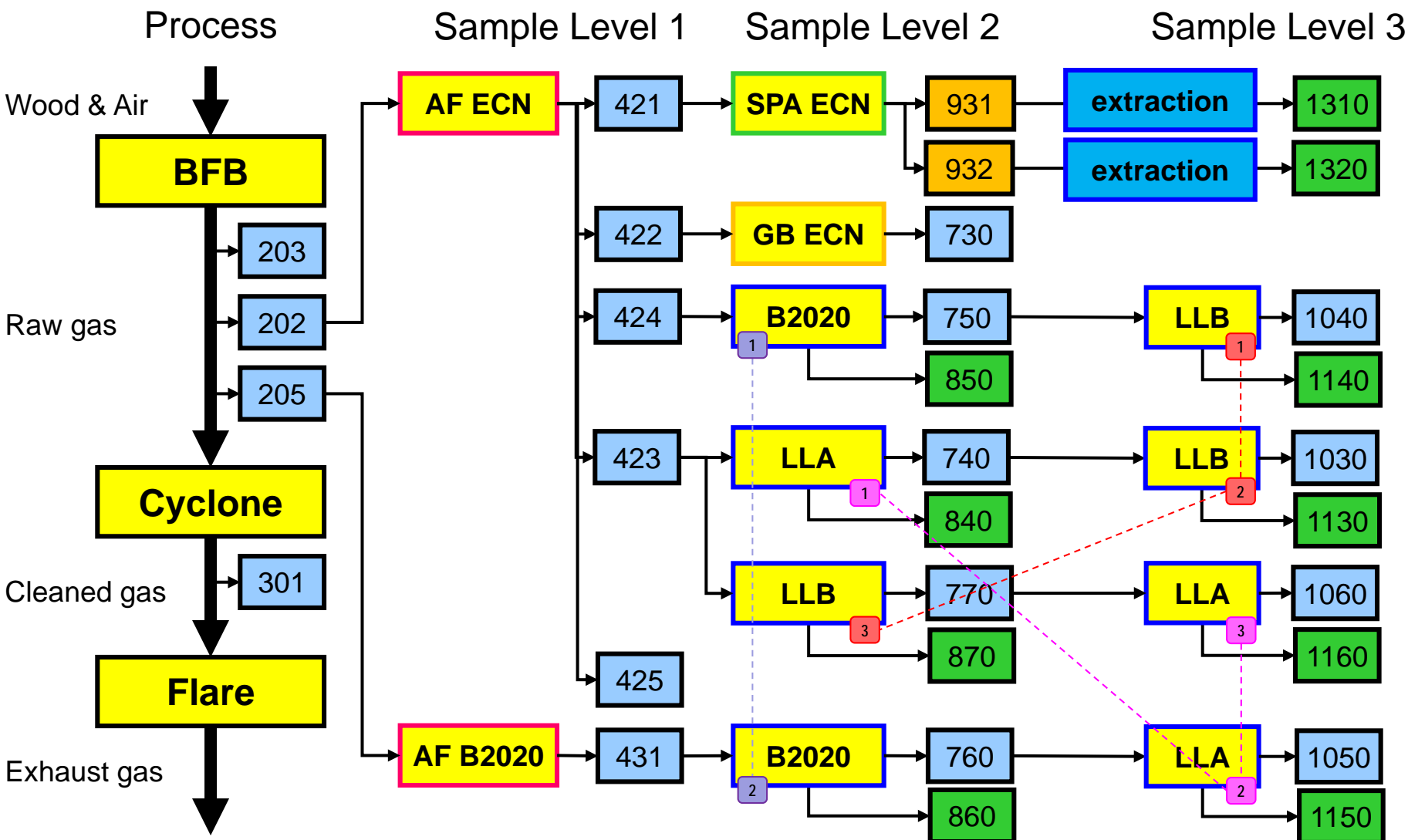
PASH: Polycyclic Aromatic Sulphur Heterocycles

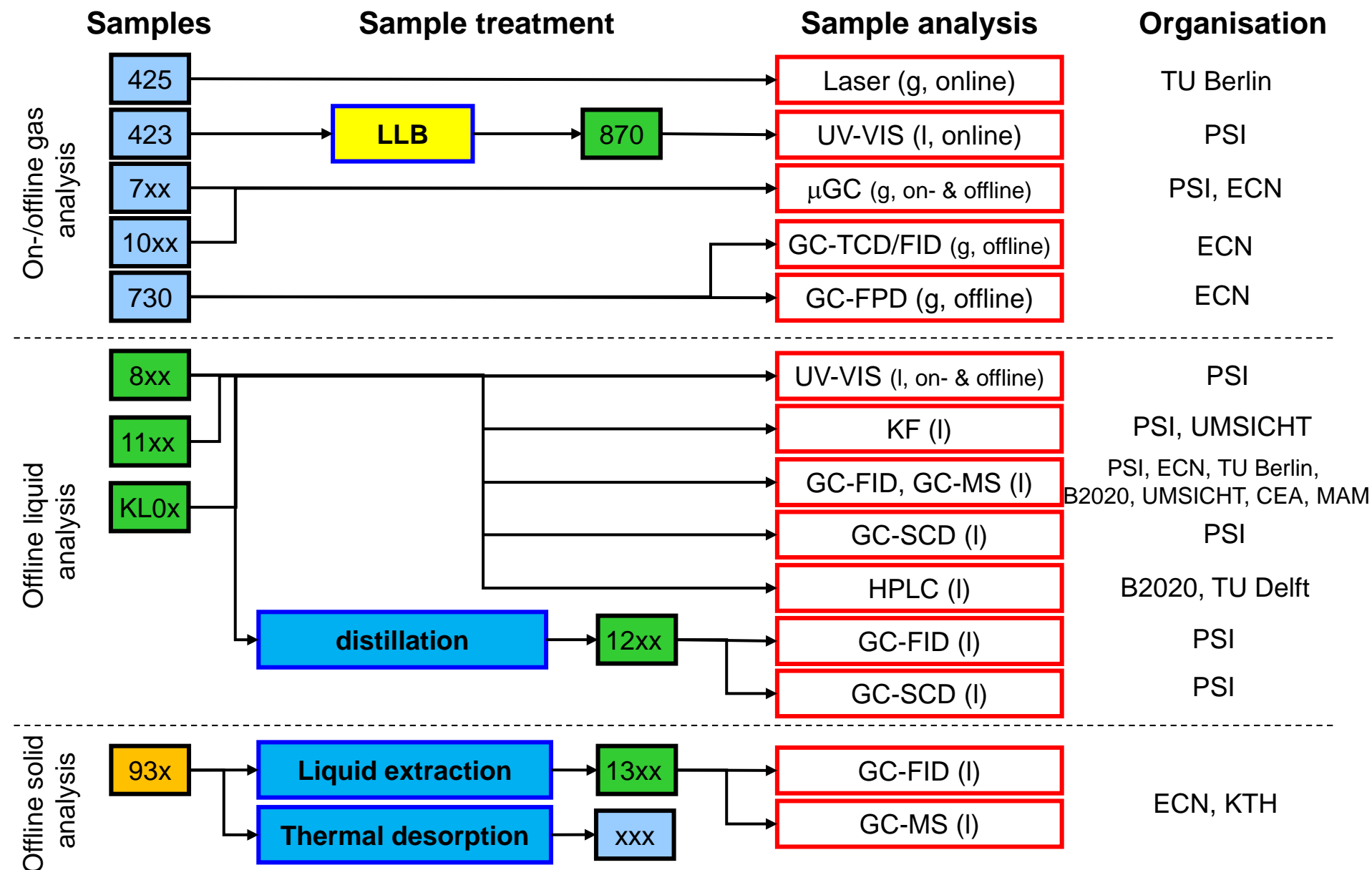




Configuration for round robin test Nov. 2013 @ PSI

Process step
 Sampling system
 Gas sample
 Liquid sample
 Solid sample





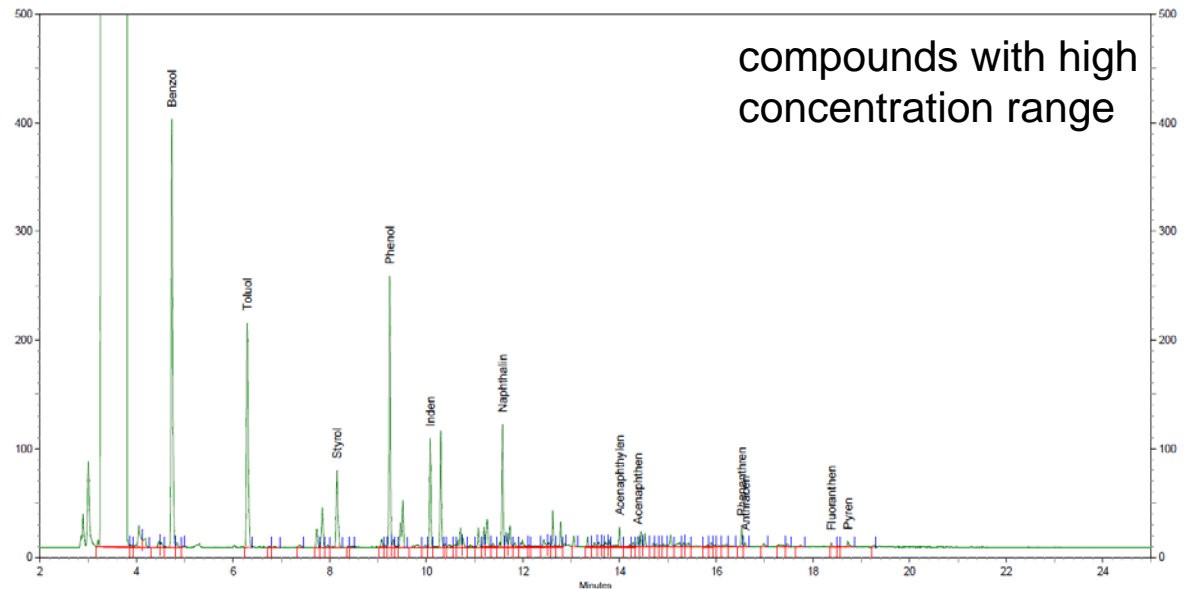
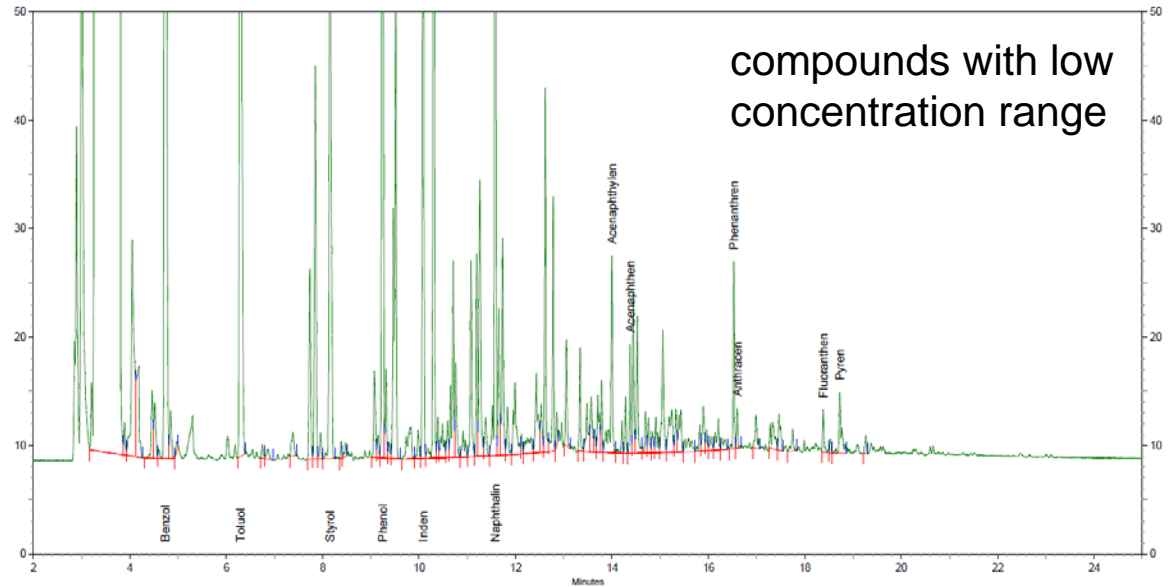


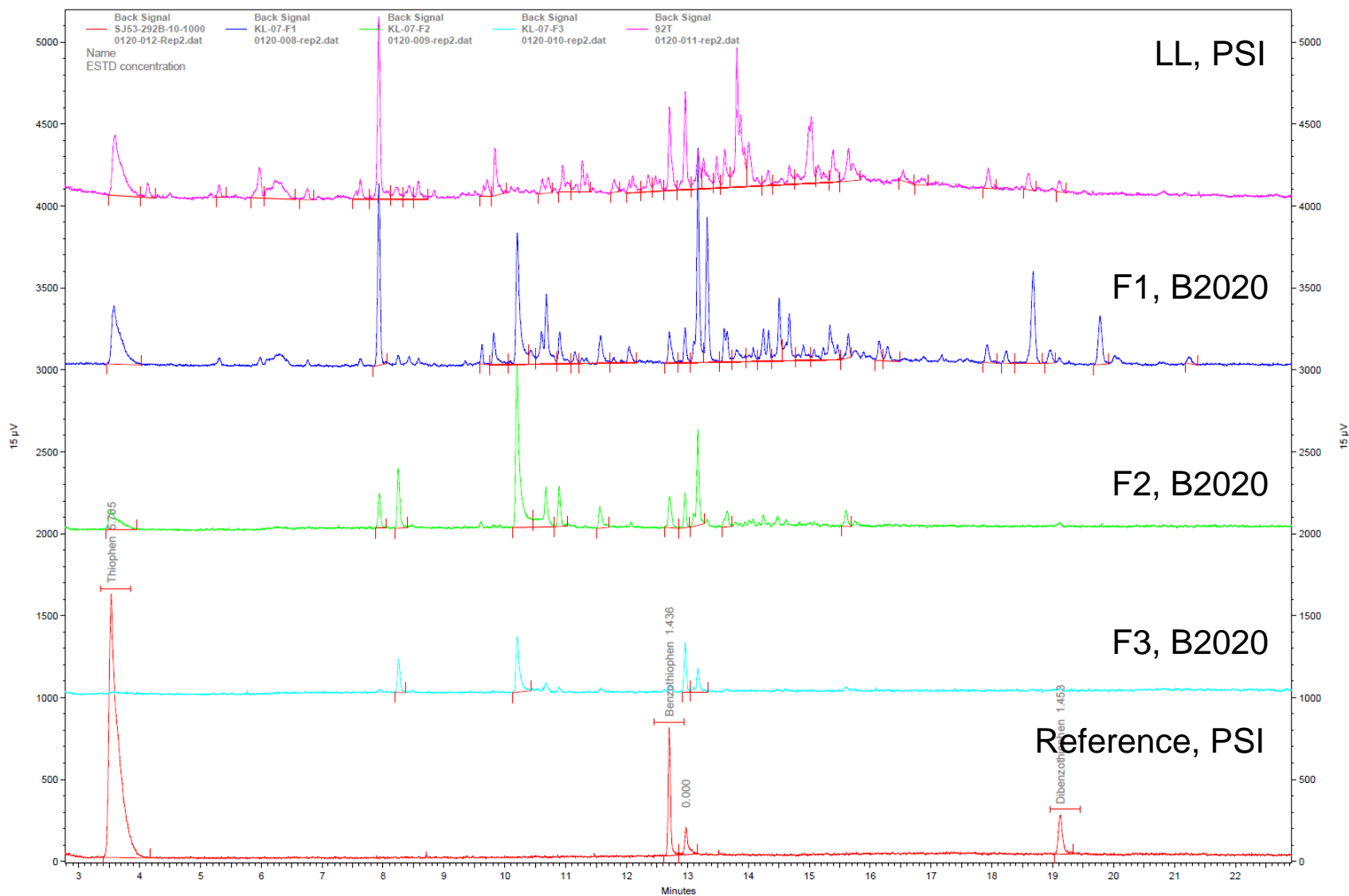
GC-FID: Analysis of samples from LL sampling system

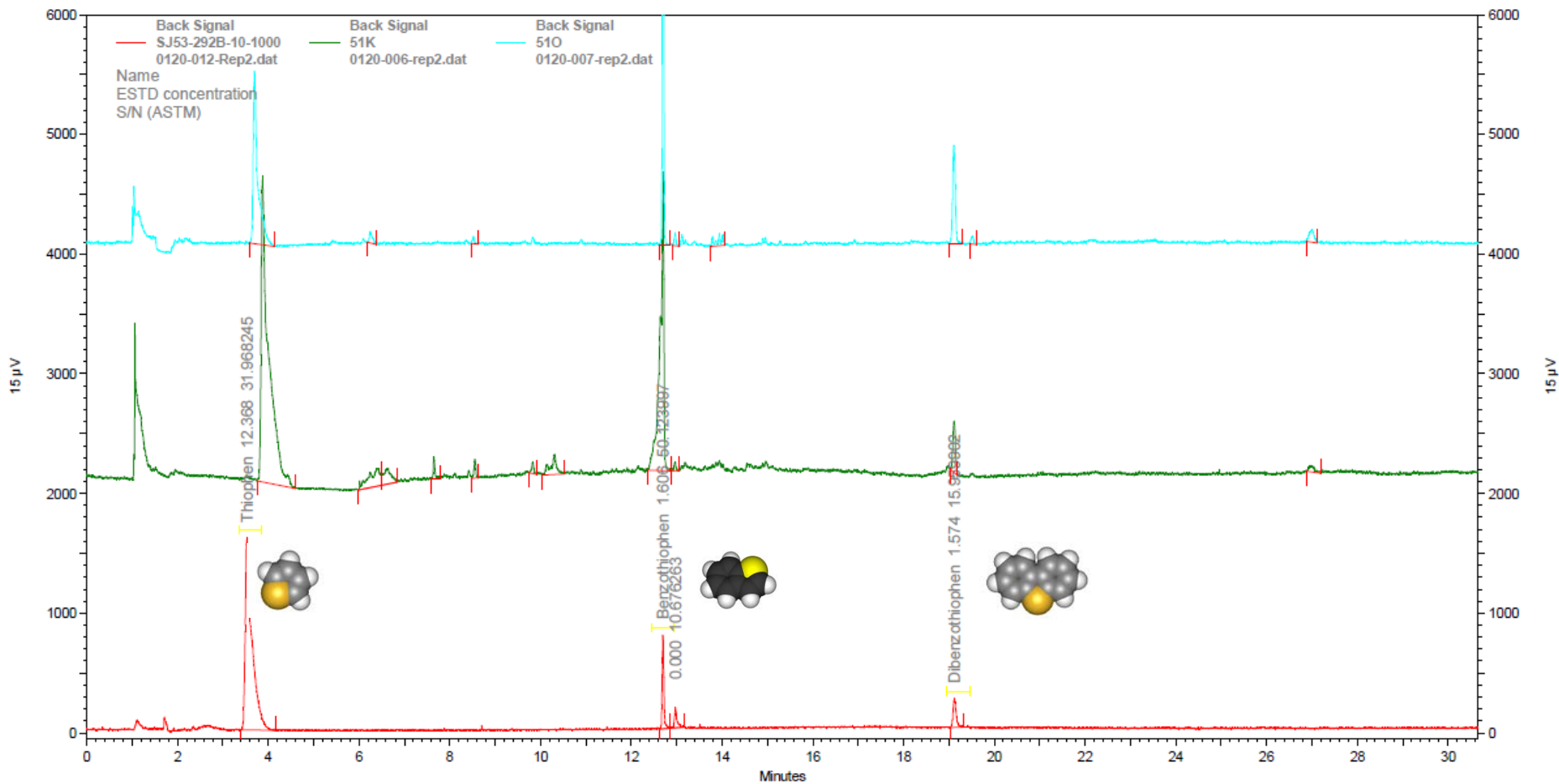
Example of GC/FID chromatogram of sample 291T, without further treatment, measured at PSI

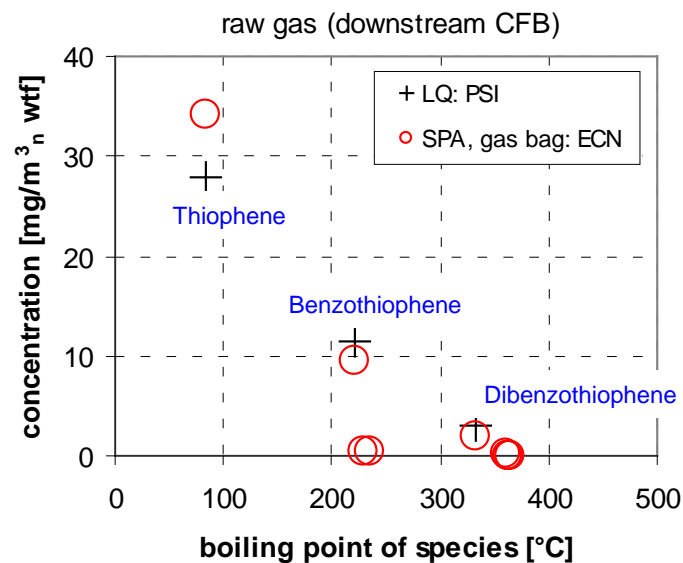
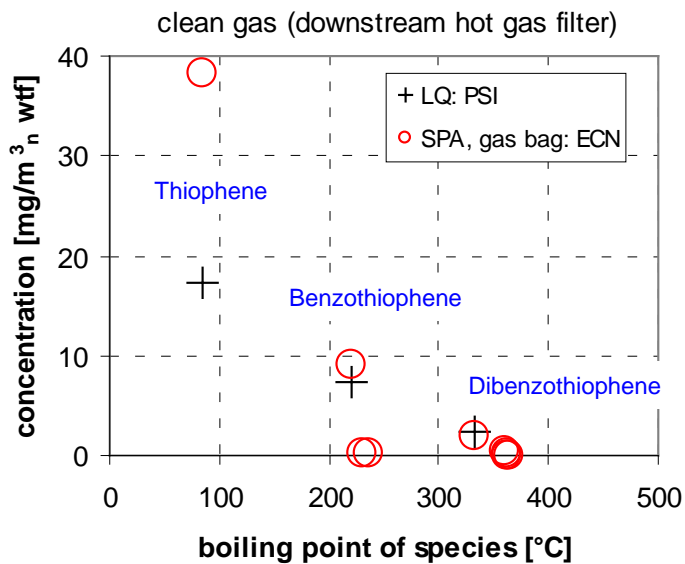
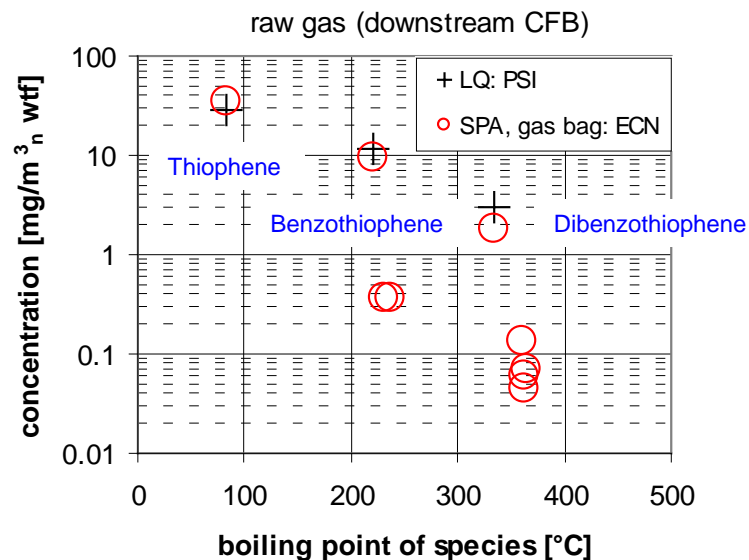
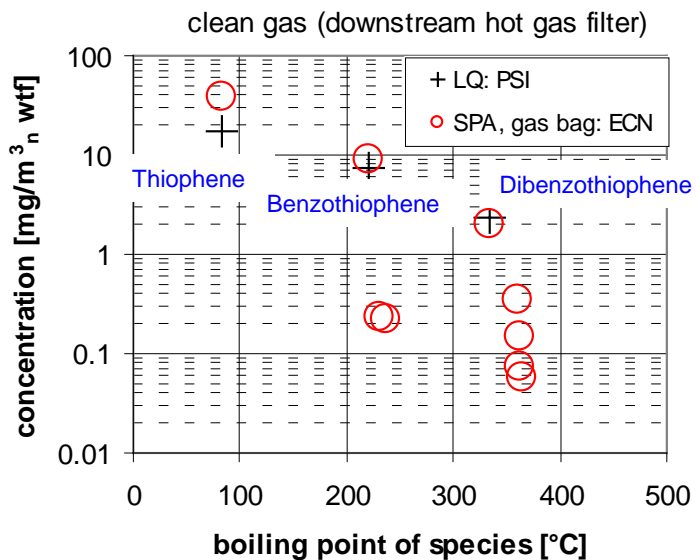
Sampling time:
17:00 – 17:30 h

870



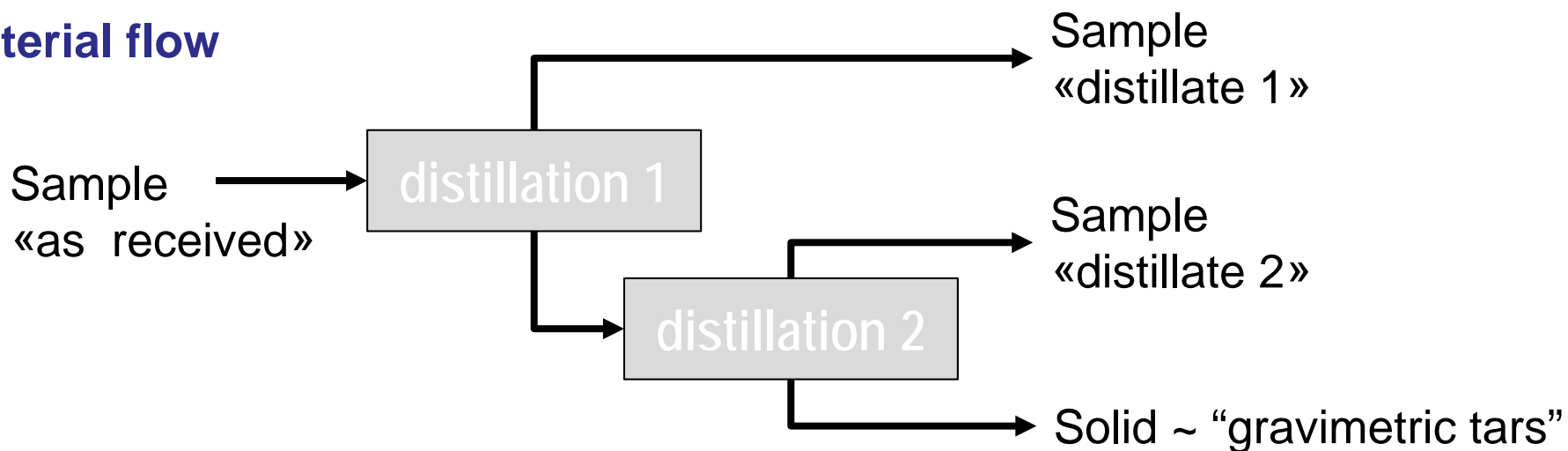








Material flow

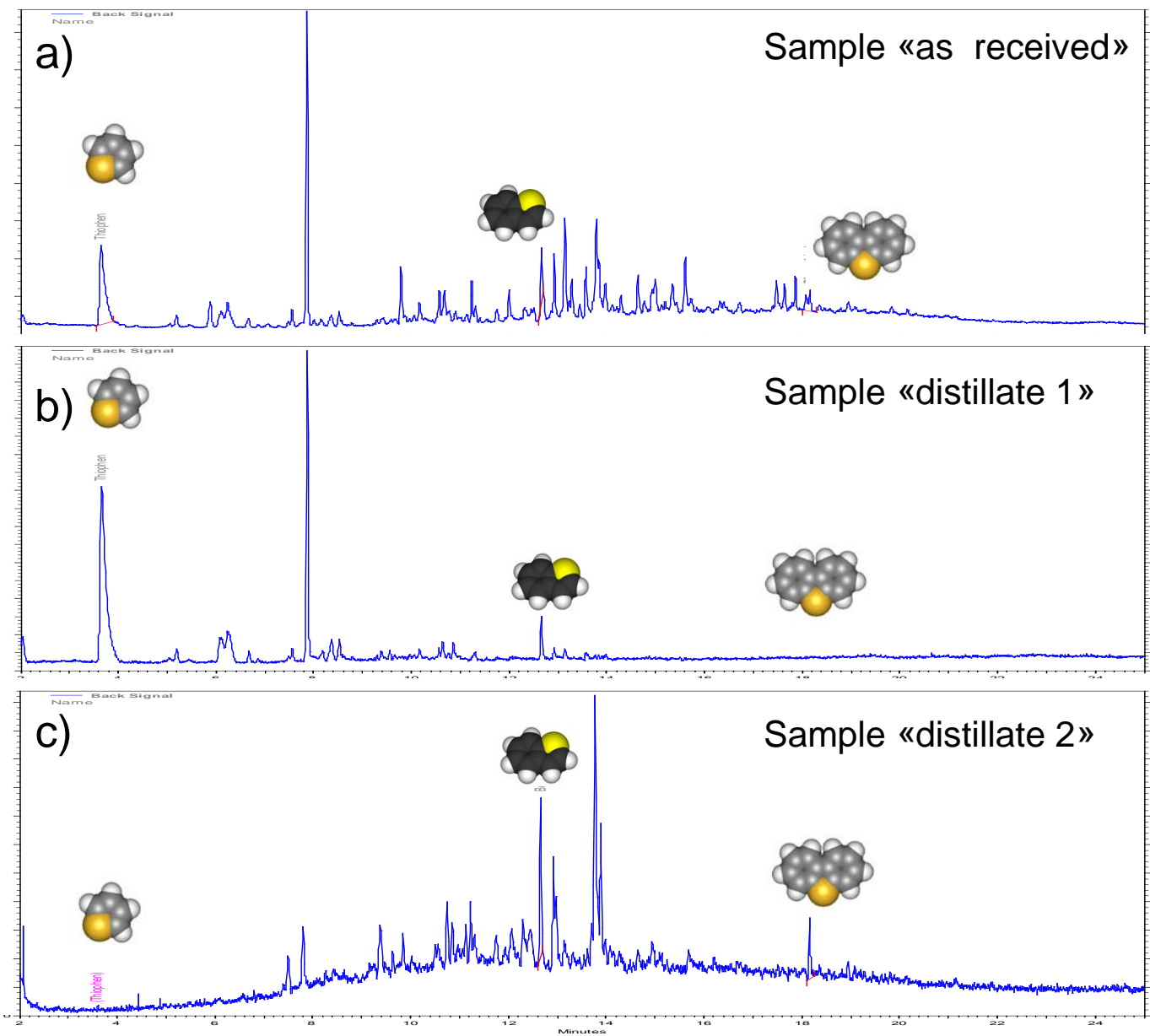


Set up



Kugelrohr (German for "ball tube") is a short-path vacuum distillation apparatus

- 1 Heating cage
- 2 Bulb containing item to be distilled
- 3 Cooling bath containing ice
- 4 Vacuum outlet and electric motor (to rotate ball-string)





- How to proceed to identify and quantify most relevant PAH and PASH compounds?
- What are the “lead”-compounds and how should they be measured for the most relevant applications?
- On which round robin tests should we focus in the near term in order to be able to evaluate different measurement approaches for BTX, PAH and PASH measurement?
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