



Status & perspectives of Gas Analysis Working Group (GAW)

Serge Biollaz¹, York Neubauer² and Markus Kleinhapp³

¹ General Energy Department, Paul Scherrer Institut, Villigen PSI, CH-5232, Switzerland

² Institut für Energietechnik, TU Berlin, Berlin, D-10623, Germany

³ Associated at Department Energy and Chemical engineering, University of Mining and Materials, Leoben, A-8700, Austria

<http://www.gas-analysis-webinars.org>

<http://wiki.gas-analysis.info>

Bioenergy processes of interest for GAW

An international working group on gas analysis in the field of bioenergy (GAW) was formed in the course of the past few years. Today GAW is expanding from biomass gasification to further bioenergy technologies such as biogas processes, Power-to-Gas cases and combustion processes.

Modern home furnaces



Agriculture biogas

Automated woodchip combustion



Waste water treatment plant



Waste-to-energy plant

Picture source: SFOE 2016

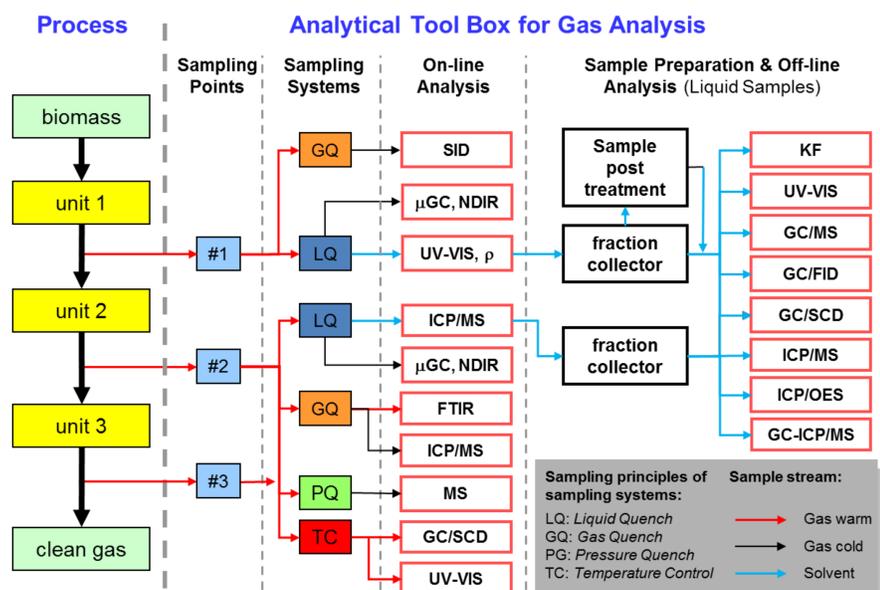
The diverse technological fields have common issues related to gas analysis such as use of analytical instruments and on sampling systems/techniques.

Versatile diagnostic toolboxes

Versatile diagnostic toolboxes are needed for the characterisation of new technologies and materials (catalyst, sorption material, feedstock, etc.).

Multiple workshop and webinars were organised for in depth presentation and discussions of selected results on analytical instruments and sampling systems: e.g. application of different diagnostic toolboxes for complex sampling tasks, detailed methods in sampling inorganic compounds such as sulphur compounds, systematic measures for quality measures, etc.

Based on the outcome of these workshops and webinars round robin test are performed for comparative applications of different new sampling and measurements methods for the same gas analysis case.



A selection of sampling systems and on- & off-line analytical instruments.

Participation organisation

Members of the actual GAW are primarily from academia (universities, national labs), less from industry. About 30 R&D organisations and roughly 200 experts are in contact via this network working in the field of gas analysis for a variety of bioenergy processes on multiple issues.



People make the difference

One strong element of GAW is the participation of research managers, technicians and PhD students across the participating R&D organisations. This allows increasing the quality of the work considerably and implementing best practice.



Outlook

GAW members have formed multiple sub working groups with a small number of committed individuals to work on specific diagnostic topics for a defined timeframe. Efforts are covered by in-kind contributions from the involved partners resp. in the frame of multiple ongoing funded projects.

There are diverse issues on sampling systems and on-/offline analytical instruments. Due to the organisational design of GAW, it is possible to make considerable progress within multiple distributed teams and address also overarching topics of all teams such as ELN, safety procedures, etc.

Participants of BIOSWEET conference are invited to look for potential topics and partners within the GAW network in order to team up in existing working groups or to initiate new working groups.

Financial support is Acknowledged which allowed organising multiple workshops

