

## Workshop Report

IEA Bioenergy: Task 33: 06 2019

# Gas cleaning, experiences, new developments, analytics and diagnostics

KIT Campus North, June 6<sup>th</sup>

**Authors:** Mark Eberhard (KIT), Berend Vreugdenhil (ECN.TNO)

**Edited by:** ...

### INTRODUCTION

Gasification is a technology widely applied for the production of heat and power or syngas for chemical synthesis. Two trends can be observed, the first that the feedstock base is broadening to more difficult feedstocks and the second that the end use of the gas is also requiring more advanced gas cleaning techniques. These developments can only be made possible with advanced analytics and diagnostics. This workshop is organized to bring together the various companies and research organisation active in the field of gas cleaning and gas analysis.

### CONFIRMED SPEAKERS

HANS LEIBOLD – KIT  
BEREND VREUGDENHIL – ECN.TNO  
TIM BENSTEAD – Rath Filtration  
SERGE BIOLLAZ – Paul Scherrer Institut  
YORK NEUBAUER – TCKON Engineering Services  
ALEXANDER FATEEV – DTU  
MAX SCHMID – Uni Stuttgart  
PATRICK NAU – DLR

### GOAL

The goal of the workshop is to share new knowledge and ideas about improvements for gas cleaning and the new developments in gas analytics. The organising committee suggest reading the thorough report on gas analysis guidelines from IEA Bioenergy Task 33 when joining the workshop

<http://task33.ieabioenergy.com/content/Task%2033%20Projects>

The workshop will be complemented with a nice after-work-dinner and interesting discussions.

## IEA Bioenergy, Task 33: Thermal Gasification of Biomass and Waste

### Workshop “Gas cleaning, experiences, new developments, analytics and diagnostics”

**Thursday, June 6<sup>th</sup>**

**Meeting location:** KIT Campus North, Eggenstein-Leopoldshafen, ITC– Geb. 430

Bus transport: Departure at Hotel ACHAT 08:30 am

09:00 – 09:05 Welcome (Berend Vreugdenhil/Thomas Kolb)

09:05 – 09:20 Welcome address (NN, KIT)

#### **Topic: Gas cleaning, experiences, new developments**

09:20 – 09:45 Hot gas cleaning – Experiences and improvements at the bioliq pilot plant

**HANS LEIBOLD**, KIT

09:45 – 10:15 MILENA gasification as platform towards heat&power and sustainable fuels & chemicals

**BEREND VREUGDENHIL**, ECN part of TNO

10:15 – 10:45 Latest Developments in Ceramic Filter-based Hot Gas Filtration.

**TIM BENSTEAD**, Rath Filtration

10:45 – 11:15 *Coffee and tea break*

#### **Topic: analytics and diagnostics**

11:15 – 11:45 Gas Analysis Working Group (GAW): Status and perspective 2019

**SERGE BIOLLAZ**, Paul Scherrer Institut

11:45 – 12:15 Continuous On-line Tar Monitoring and Tar Analysis with UV-Fluorescence

**YORK NEUBAUER**, TCKON Engineering Services

12:15 – 12:45 Online UV/IR measurement of tars and other gas compounds

**ALEXANDER FATEEV**, DTU

12:45 – 14:15 *Lunch*

14:15 – 14:45 Tar and impurity measurement and monitoring for biogenic residue gasification

**MAX SCHMID**, University Stuttgart

14:45 – 15:15 tbd

15:15 – 15:45 *Coffee and tea break*

15:45 – 16:15 Tunable diode laser absorption spectroscopy (TDLAS) for gas analysis in gasifiers

**PATRICK NAU**, DLR

16:15 – 16:45 TDLAS-based in situ measurements of potassium in entrained flow gasifiers

**FLORIAN SCHMIDT**, Umeå University

17:00 – 19:00 Site visit bioliq

19:30 Dinner

## Site Visit

**Friday, June 7<sup>th</sup>**

**Meeting location:** BASF, Ludwigshafen

Bus transport: Departure at Hotel ACHAT **08:30 am**

- 08:30 – 10:00 Bus transfer from KIT to Ludwigshafen
- 10:00 – 13:00 Site visit and Lunch
- 13:00- 16:30 Bus transfer from Ludwigshafen to Karlsruhe Main Station via Mannheim Main Station (direct train to Frankfurt)

### Local Contact:

Mark Eberhard

E-mail: [mark.eberhard@kit.edu](mailto:mark.eberhard@kit.edu)

Phone: +49 721 608 22979

Pia Bengert

E-mail: [pia.bengert@kit.edu](mailto:pia.bengert@kit.edu)

Phone: +49 721 608 28514



IEA Bioenergy, also known as the Technology Collaboration Programme (TCP) for a Programme of Research, Development and Demonstration on Bioenergy, functions within a Framework created by the International Energy Agency (IEA). Views, findings and publications of IEA Bioenergy do not necessarily represent the views or policies of the IEA Secretariat or of its individual Member countries.