

## Measurement of Tar and Particles in Biomass Gasification Product Gas

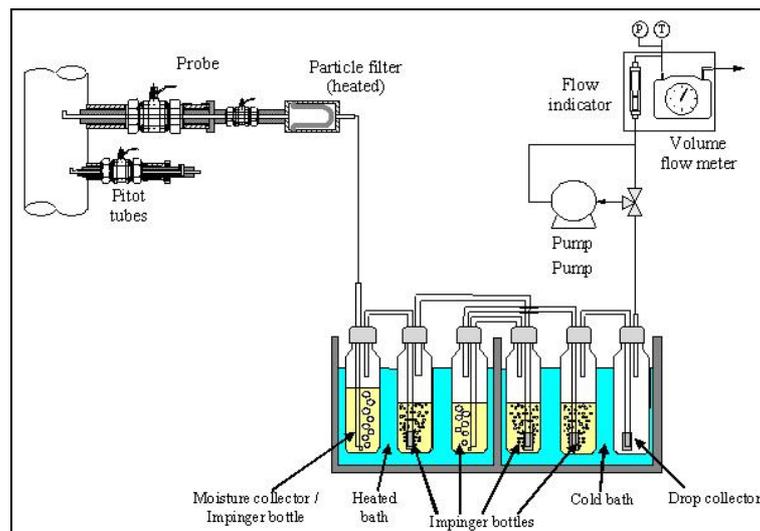
### Background

The work on a measurement method for tars and particles in biomass gasification product gas has a history dating back to a joint meeting in Brussels in 1998 by members of IEA Bioenergy Agreement, Task 33: Thermal Gasification of Biomass, US DOE/NREL, and DGXVII of the European Commission. This meeting led to the development of two draft Protocols for tar measurement, which were presented at the 10<sup>th</sup> European biomass conference in Würzburg, Germany in 1998.

It was recognised that these Protocols should be developed further. This was done in two subsequent EU projects (projects ERK6-CT-1999-20002 and ENK5-CT-2002-80648, more info can be found on [www.cordis.lu](http://www.cordis.lu)). The first project resulted in a method called “Guideline”, which was transferred into a European CEN standard during the second project.

### The method

The method is based on the dissolution of tar in an organic solvent. Particles are trapped in a heated ceramic filter. Tars are analysed gravimetrically and/or by gas chromatography.



Important choices that were made during the development of the method have been summarised in a background document:

[Rationale for setup](#)

A second background document contains construction details:

[Technical Report](#)

The analytical procedures as well as the overall method have been verified by:

Round Robin tests of gas chromatographic and gravimetric methods, where synthetic and real tar samples were distributed for comparative analysis and validation in different laboratories.

Parallel testing was conducted where different organizations and laboratories carried out simultaneous tar measurements, once again for comparison and validation.

### **Current status of the method**

In July 2005, the method was sent to CEN (European Standardisation Institute) for formal voting. In case the 28 CEN countries agree with a majority of votes, the method will become an official CEN Technical Specification.

The current version of the document is presently not available via CEN. For more information, contact the chairman of the group that developed the method: John Neeft at SenterNovem ([j.neeft@senternovem.nl](mailto:j.neeft@senternovem.nl)). For technical aspects contact the co-ordinator of the development programme: Willem van de Kamp ([vandekamp@ecm.nl](mailto:vandekamp@ecm.nl)). Once the method has become a formal CEN TS document, it can officially be obtained through national standardisation institutes of the CEN countries. Access to this information will then be made available on this website.

In North America, the same method will be submitted to ASTM for standardisation. For details contact Steve Deutch at US DOE/NREL ([Steve\\_Deutch@nrel.gov](mailto:Steve_Deutch@nrel.gov)).

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