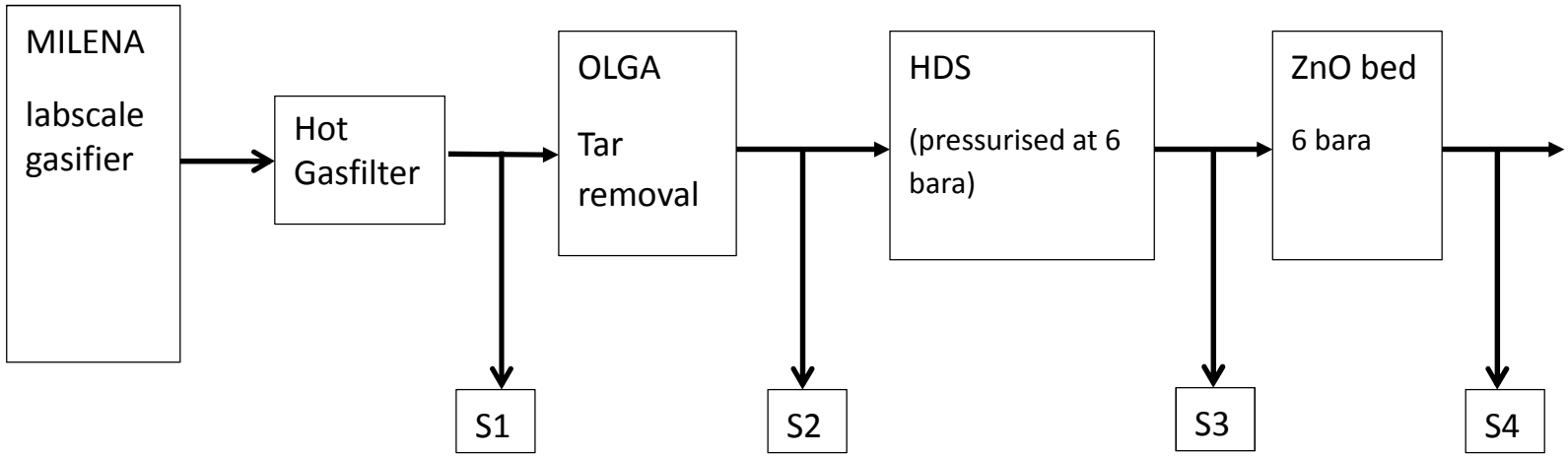
ECN test facility offer

ECN offer for Round Robin exchanges :
MILENA lab gasifier - OLGA tar removal –
HDS reactor - ZnO reactor

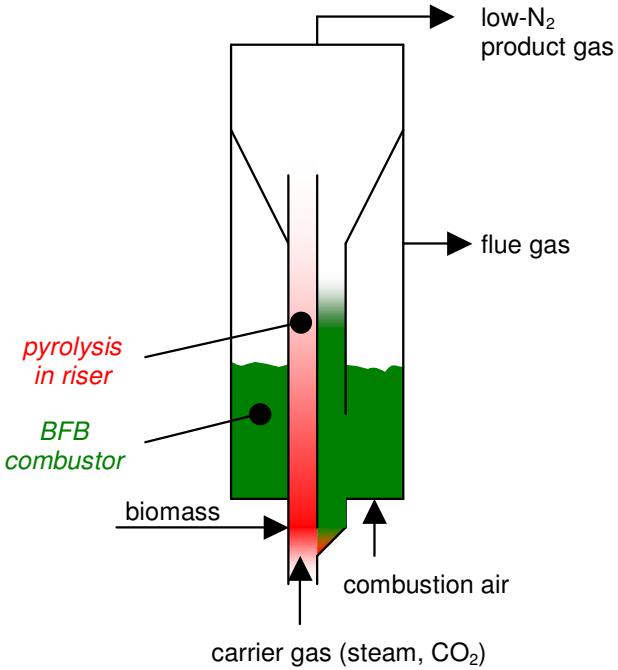
Copenhagen; BRISK TOTeM 38
6 June 2013

www.ecn.nl

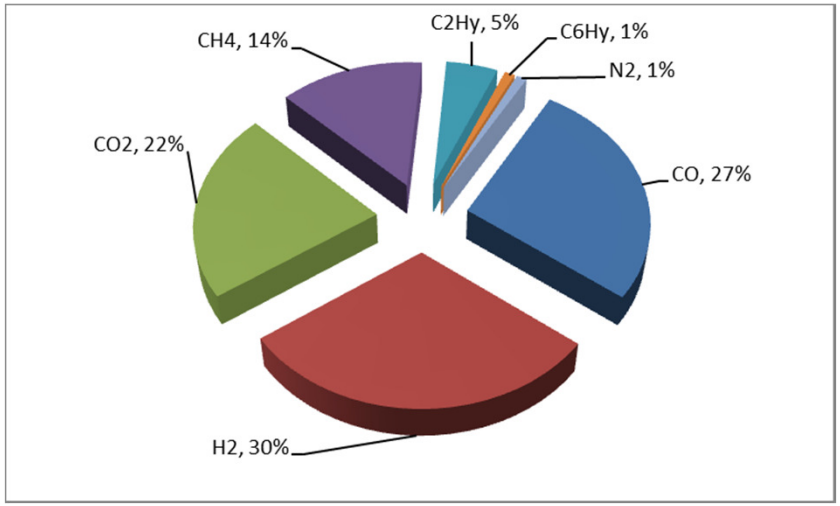
Overview part of ECN lab test facility.



MILENA gasifier



Product gas composition main components (vol% dry)



MILENA gasfier - OLGA inlet: S1

Raw producergas MILENA:

- Sampling point S1 (downstream hot gasfilter)
- Pressure: +20 mbar
- Temperature: 350°C
- Water: 30 vol%

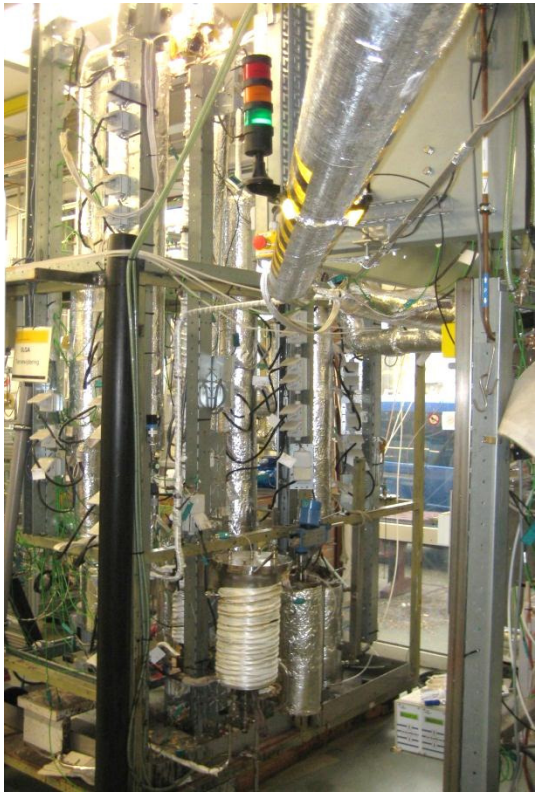
Tar: 30 gr/m_n^3

H_2S: 150 ppm

COS: 5-10 ppm

Thiophene and (di)benzo thiophenes at ppm level

OLGA outlet: S2



Producergas downstream OLGA:

- Sampling point S2
- Pressure: +5 mbar
- Temperature: 90°C
- Water: 30 vol%

Tar: < 100 mg/m_n^3; no tars > anthracene

H_2S: 150 ppm

COS: 5-10 ppm

Thiophene at ppm level

HDS outlet: S3

Producergas outlet HDS:

- Sampling point S3
- Pressure: + 6 bara (direct connection, or ~10 mbar downstream pressure reducer)
- Temperature: 350°C (~100°C downstream pressure reducer)
- Water: 1-20 vol%

H_2S: 150 ppm

COS, Thiophene and (di)benzo thiophenes at ppb level

Outlet ZnO reactor: S4

Producergas outlet ZnO reactor:

- Sampling point S4
- Pressure: + 6 bara (direct connection, or ~10 mbar downstream pressure reducer)
- Temperature: 150°C
- Water: 1-20 vol%

H_2S/COS/Thiophenes below detection limit.

ECN - Tar and Sulfur measurements

- Tar sampling and analysis:

  A. SPA; analysis with GC-FID/MS
  B. CEN/TS tar guideline; analysis with GC-FID/MS

- Sulfurcomponents sampling and analysis:

  A. Micro-GC for H2S/COS (ppm)
  B. Gas sampling bags; analysis with GC-FPD
  C. SPA; analysis with GC-MS.

Thank you for your attention..

Questions ?

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