version 1.0
8 Oct 2013

Gasmet™ FTIR application note
Continuous emissions monitoring in cement kilns

KEY WORDS

- Continuous emissions monitoring (CEM)
- Cement kiln
- Fourier Transform Infrared (FTIR)

PRODUCTS

- CX4000 For continuous emissions monitoring
- GASMET CEM II FTIR Continuous Emissions Monitoring system

OVERVIEW

Various pollutants are generated in cement manufacturing process especially when alternative fuels and waste derived fuels are used. In cement kilns with these fuels there typically is a requrement to monitor Hydrogen Chloride (HCl). **Gasmet**™ CEMS is EN 15267-3 approved for HCl measurement in 0 … 15 mg/Nm^3 range.

High dust concentrations are also typical for cement industry emissions: **Gasmet**™ CEMS have double filtering system; one filter at the sampling probe and a back-up filter inside the sampling unit, which eliminate dust problems. In extremely high dust concentrations it is also possible to use a pre-filter & a back-flush with instrument air at the probes, which further help to eliminate all potential dust related problems.

Gasmet™ CEMS –system:

CX4000 FTIR gas analyzer; Gasmet sampling unit; Gasmet Industrial Computer; Analog outputs or ModBus;

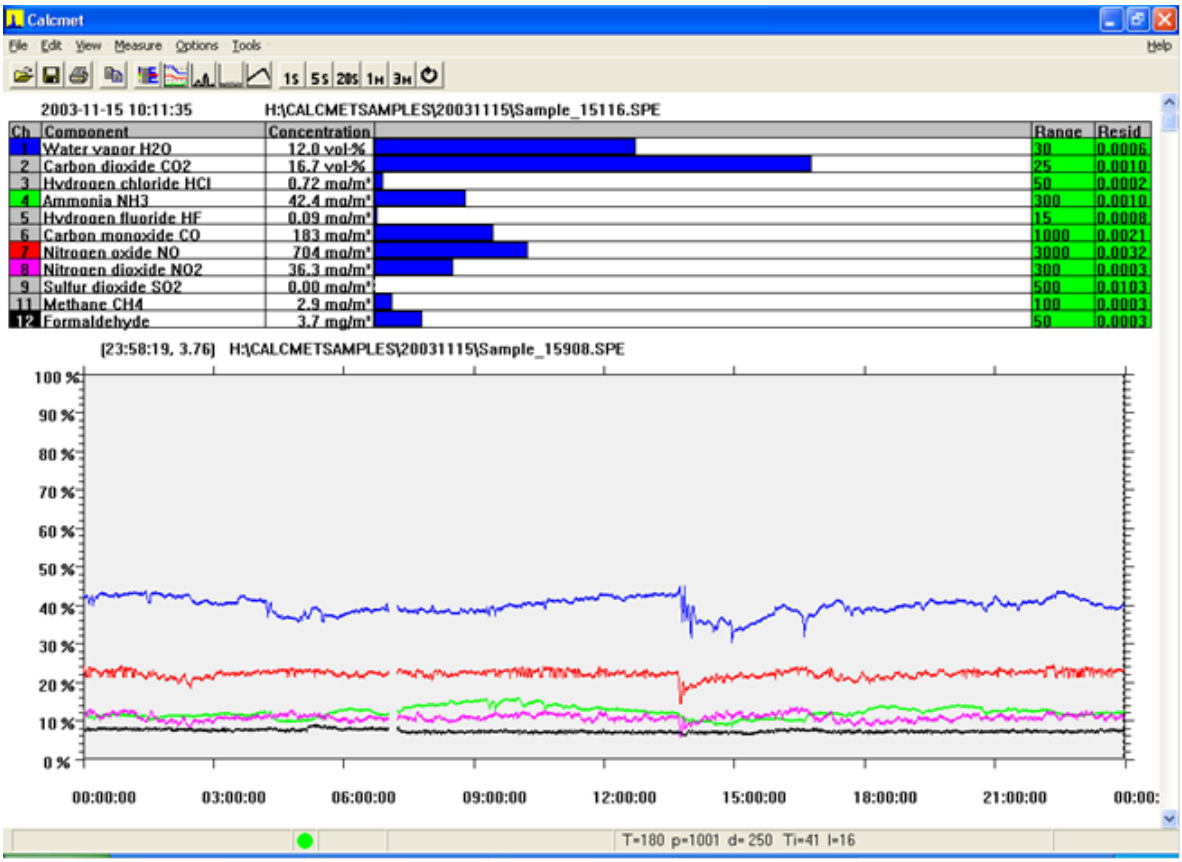
Heated sample probe; Heated sample lines; Optional oxygen analyzer

TYPICAL APPLICATION

Compound name	Range	Unit
Water	0 – 30	vol-%
Carbon Dioxide	0 – 25	vol-%
Carbon Monoxide	0 – 75	mg/Nm^3
Nitrogen Monoxide	0 – 800	mg/Nm^3
Nitrogen Dioxide	0 – 200	mg/Nm^3
Nitrous Oxide	0 – 100	mg/Nm^3
Sulfur Dioxide	0 – 75	mg/Nm^3
Ammonia	0 – 15	mg/Nm^3
Methane	0 – 100	mg/Nm^3
Hydrogen Chloride	0 – 15	mg/Nm^3
Hydrogen Fluoride	0 – 15	mg/Nm^3

Application Data: Cement Kilns emissions

The data below shows trend of concentrations over 24 hours period. **Gasmet**™ CEM - system produces continuous data the only downtime being daily zero calibration (< 10 minutes).



The results show very high NOx concentrations. As an interesting detail, there is also formaldehyde (CH_2O) present in the process emission. **Gasmet**™ CEMS can also reveal such unexpected components from the sample gas.

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