

**Industry: Ceramic Industry**

## **HF measurement: is there an easier way?**

**Waldkirch Tour Stop No 29 2010 - Roof tiles, floor tiles: In ceramics production hydrogen fluoride is measured to reduce environmental pollution. Solution? Pick SICK.**

**Challenge: Monitoring and process control**

Whether round or rectangular, big or small, whatever the color or the purpose, ceramic products are usually turned from dried molds into hard, water-resistant products in continuous furnaces. The raw material, clay with different additives, contains fluoride-laden minerals. During the incineration process, hydrofluoric acid is set free. According to emission guideline 2008/1/EG, this poisonous waste gas has to be cleaned with the best technology available and with the goal of reducing emissions. In a packed bed filter with a sorbent from limestone and/or slaked lime the poisonous hydrofluoric acid and if necessary even sulfur dioxide is filtered. The emission limit is legally determined. Up to now plant emissions were determined by monthly comparative measurements with manual samples. But is there an easier way? SICK offers the solution.

**Customer Solution: In-situ measurement: contact-free and continuous**

Hydrogen fluoride is a colorless, foul-smelling and reactive gas which has strong acid effects on skin and mucous membranes. Extractive measurement with measuring gas conditioning would require special steps. The In-situ analyzers of the GM700 series offer new possibilities to measure difficult measuring components like HF, HCl or NH<sub>3</sub> with selectivity so far un-reached – without using test gases. The use of the direct laser spectroscopy with an adapted spectral line provides a high resolution measurement without cross sensitivity influence, drift- and adjustment-free. For this measurement the GM700 cross-duct model is used behind the absorber. The whole duct section provides optimal sensitivity and representative measuring



results. This controls the absorber efficiency and promotes economical operation of the waste gas facility.

**Benefit: Reliability, precision and very short response times**

- **Accurate measurement results using In-situ measurement directly in the process**
- **Registration of quick and short-term process fluctuations**
- **Precise and drift-free through direct spectroscopy –adjustment with problematic test gases unnecessary which means a considerable reduction of costs**
- **High reliability during operation**
- **Also applicable in rough surrounding conditions at the measuring site**
- **No moving parts results in lower maintenance requirements and longer intervals between maintenances**