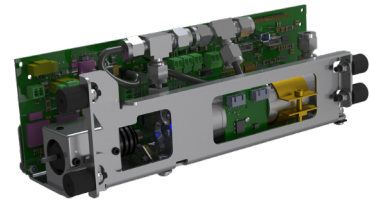


PAS sensor module for trace gas analysis



for gas analysis

Technology fields

MCR technology, gas analysis, optical measurement technology

Project requirements

The **project objective** was the development of a photoacoustic sensor for the measurement of NO₂-concentrations in exhaust gases with a detection limit of < 50 ppb using the photoacoustic principle. A particular challenge was to perform the measurement independently of ambient or flow noise. Another project goal was to operate the cell in acoustic resonance, for which procedures for stabilization had to be developed (resonance tracking). This allows continuous measurement under gas flow, independent of changes in temperature or gas concentration.

Facts/Highlights

- Detection limit NO₂ in the lower ppb range
- Laser source heated
- Online resonance tracking parallel to concentration measurement
- Continuous measurement possible
- Can be combined with laser spectroscope, e.g. LUGGI
- small sample volume and small cell size
- low drift
- temperature stable cuvette

Services of KNESTEL

Potential analysis, target price estimation, project management, specifications, project planning, development of software and hardware, electrical and mechanical design, EMC test, prototyping, series production

Possible applications

- Trace gas analysis in the automotive sector, environmental technology, maturity monitoring or medical technology
- Measuring principle applicable for all IR/UV active gases by adapting the light source

Our projects in the field of gas analytics are constantly evolving.
You can find the latest information at www.trace-gas.com

About KNESTEL: Knestel has been developing and producing customized electronic and mechatronic special solutions in the fields of motor and machine control, frequency converters, image processing, MCR technology, software development, radio, bus systems and gas analysis for 40 years. We support our customers from the idea to the finished implementation. Individual solutions and concepts - technically up to date. Our production - electronics manufacturing, device and switch cabinet construction, Production of subassemblies, assembly and mechanical processing - is equipped with the latest technology.

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