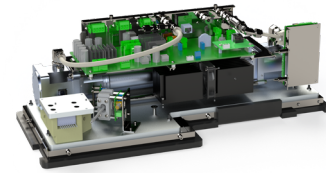


## **Quantum Cascade Laserspectroscopy for N<sub>2</sub>O trace gas analysis**



**for Automotive, Gas analysis**

### **Technology fields**

MCR technology, gas analysis, optical measurement technology

### **Project requirements**

The **project objective** was the development of a compact, well integrable analyzer module consisting of a long-range cell (Herriott) and a laser control electronics for trace gas analysis of N<sub>2</sub>O. Besides N<sub>2</sub>O, CO, CO<sub>2</sub> and O<sub>3</sub> should be determinable. A fast reaction time ( $t_{90}$ : 1-2 seconds), no cross sensitivity. The project was characterized by a low detection limit of < 10 ppbV and a high degree of compatibility with other gases.

### **Facts/Highlights**

- No consumables
- Low response times
- EURO VI requirements fully met
- No spancalibration required
- High selectivity and sensitivity
- No cross sensitivities
- Adaptation for various gases possible
- Electronics can be operated with various lasers (QCL, DFB, ICL etc.)

### **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**

- Gas analysis in research, development and quality assurance
- Environmental Technology
- Process monitoring
- Medical technology, breathing gas analysis
- Exhaust gas analysis

**Our projects in the field of gas analytics are constantly evolving.**  
You can find the latest information at [www.trace-gas.com](http://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.