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Project details: Quantum cascade laser spectroscopy for N₂O trace gas analysis

Industries

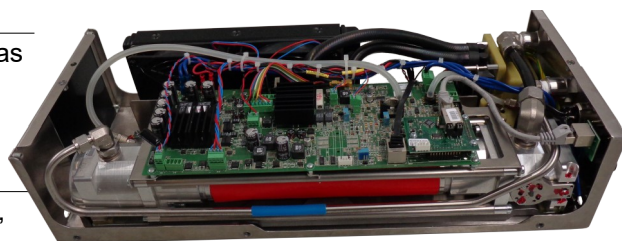
- Gas Analysis, Medical Technology

Technology fields

- Bus Systems and Radio, CAE, Software Development, Gas Analysis, Optical Measuring Systems; Measurement, Control and Regulation Technology

Project requirements

- The aim of the project was the development of a compact, well-integrable analyzer module consisting of a long way cell (Herriott) and an electronic control for trace gas analysis of N₂O. Beside N₂O, the gases CO, CO₂ and O₃ shall be determinable. A fast response time (T₉₀: 1-2 seconds), no cross-sensitivities to other gases, and a low detection limit of <10 ppbV are the characteristic conditions that were set on this project.



Facts / Highlights

- No LN₂ necessary, detector is cooling with ambient air
- Simple calibration, even without N₂O-span gases, possible
- Completely fulfills EURO VI requirements
- Compatible through compact construction
- High selectivity and sensitivity
- No cross-sensitivities
- Adjustment for various gases is possible
- Electronics with a variety of lasers operable (QCL, DFB, ICL, ...)

Services of KNESTEL

- Potential analysis, target price estimate, project management; development of software, hardware and optics; support with the mechanical construction, EMC testing, serial production

Possible applications

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