

## Neuartiges Verfahren zur selektiven Gasdetektion mittels Lambdasonden

Verfasser: Dipl.-Ing. Sabine Fischer

### Zusammenfassung

In the scope of this diploma thesis, a measurement approach to obtain increased differentiation of exhaust gas components using a standard zirconia-based potentiometric lambda probe was investigated. The self-discharge characteristic after different voltage pulses applied to the sensor is used as a measured parameter which depends on gas type and concentration. The detection of NO in the lower ppm range is demonstrated. In addition, this approach allows to improve the response and selectivity to NO significantly compared to other investigated gases as NO<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub> and a mixture of hydrocarbons.

This technique seems to be capable to enable NO sensing in exhaust gas with standard lambda probes. Details of the experiment can be obtained from the Figures (from [1]).

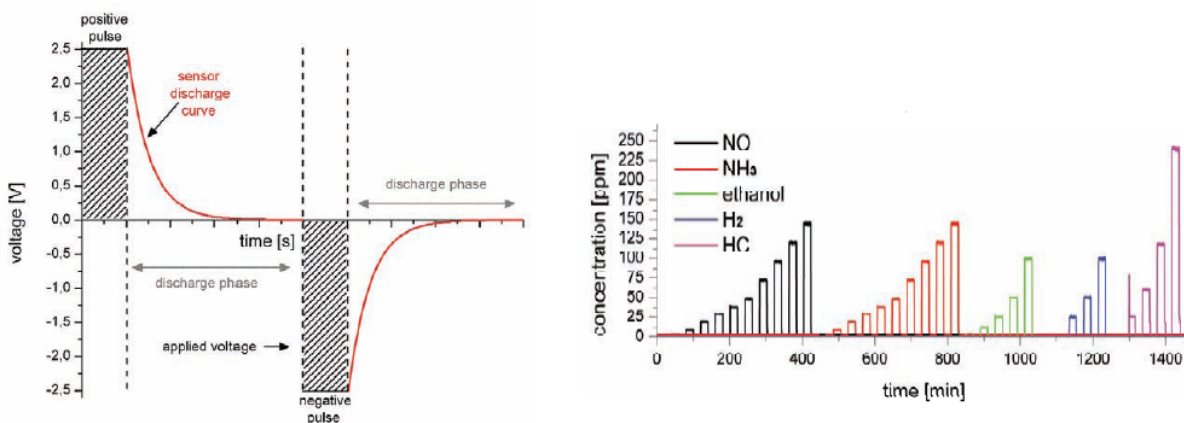
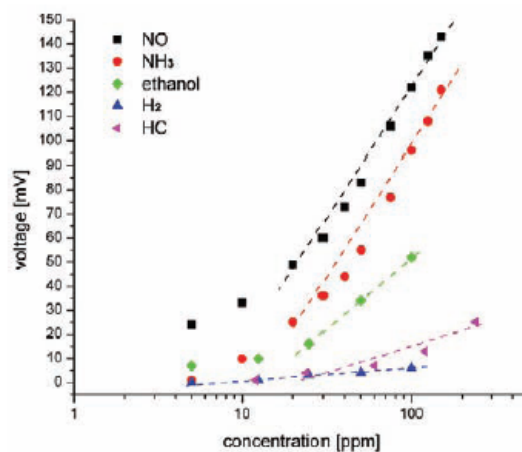


Fig. 1(a): Schematic depiction of the measurement approach; (b) gas concentration profile used in the multi-gas tests.



(a) positive discharge

- [1] S. Fischer, R. Pohle, M. Fleischer, R. Moos: Method for reliable detection of different exhaust gas components by pulsed discharge measurements using standard zirconia based sensors. Proceedings Eurosensors XXIII, Lausanne, 6.-9.9.2009. In Procedia Chemistry, 1, 585–588 (2009)

### Kontakt

E-Mail: Ralf.Moos@Uni-Bayreuth.de  
Telefon: +49 921 55 7400