

## Highly dynamic identification of various gases at trace levels with the UST Triplesensor<sup>®</sup>

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The main objective of this lecture is the presentation of the patented UST Triplesensor<sup>®</sup> by discussing selected application examples for the quick identification of gases and the quantitative measurement.

The UST Triplesensor<sup>®</sup> gas sensor module consists of a ceramic semi-conductor gas sensor element with 3 different gas sensitive layers for reducible, highly and hardly oxidable gases within a 4-PIN-TO39 housing as well as an electronic module for the control of the sensor element, the storage of calibration data, signal pre-processing and data communication. An application-specific control of the sensor element and signal processing allows for the high sensitive detection of specific gases or gas mixtures in a range from only a few ppm up to several Vol% and, afterwards, its external classification and quantitative analysis. By means of the hardware and software modularity and variability in combination with the wide range of selectivity and sensitivity, the UST Triplesensor<sup>®</sup> provides a technological platform for the realisation of cost-efficient, application-specific gas sensor systems scalable from small batch to high volume series. Typical fields of application exist in the process industry, building automation, power and environmental engineering, in the automotive industry and in safety and medical engineering. Particular applications are, for instance, the detection of selected VOC markers and refrigerants, the gas leak detection at natural gas connections, the measurement of the air quality as well as the early detection of smouldering fires.

Selected applications of the qualitative detection of CH<sub>4</sub> at changing background concentrations as well as the detection of environment interfering gases like CO, NO<sub>2</sub> and NH<sub>3</sub> are used for the presentation and discussion of specific functionalities and performance parameters of the sensor module.

The lecture concludes with an outlook on possibilities for future developments of application-oriented gas sensor systems.

