Institut für Sensoren und Signale

Fachhochschule Aargau
Nordwestschweiz

Research on Combustion Generated Nanoparticles at ISS

The Institute for Sensors and Signals (ISS) was founded in spring 2000 at the University of Applied Sciences, Aargau. It is an interdisciplinary institute for applied research and development.

Current Fields of Activity in Nanoparticle Research

- Development of methods for particle characterization
- Investigation of particle emissions from combustion processes
- Systems for field measurement of vehicle emissions
- Emission Measurements
- Measurement of atmospheric aerosols and low particle concentrations

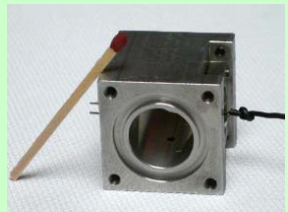
Selected Projects

Portable particle sensor

Number concentration and mean diameter monitoring in a compact, battery operated device. Working principle: A combination of diffusion charging with a single diffusion screen stage

Photoacoustic Smoke Detector

High sensitivity and low false alarms rate through the selective detection of carbon particles

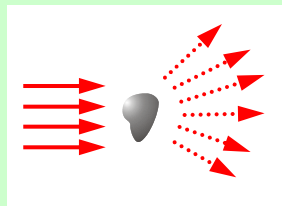


Sensor for undiluted raw gas

A heated diffusion sensor that avoids pretreatment artifacts. No dilution or thermodesorption are required

Light scattering for filter testing

Direct measurement of the exhaust gas leaving the tail pipe



Recent Publications

Burtscher, H., Fierz, M., Keller, A., Rüegg, M., Field monitoring of diesel aerosols, in *Proceedings of the 8th ETH-Conference on combustion generated particles*, 16-18 August 2004, A. Mayer editor

H. Burtscher: Physical characterization of particulate emissions from diesel engines: a review. J. Aerosol Science (2005) **36**.

Keller, A., Rüegg, M., Forster, M., Loepfe, M., Pleisch, R., Nebiker, P., and Burtscher, H.: Open photoacoustic sensor as smoke-detector, Sensors and Actuators B,(2005) **104**, 1-7

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For more information see ***http://www.fh-aargau.ch/iss***