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Autor(en) des Beitrags: Boesl, Ulrich; Weishaeupl, Ronald; Thiel, Wolfgang; Puettel, Peter; Frey, Ruediger

Titel des Beitrags: Time-resolved chemical analysis by laser mass spectrometry: monitoring of in-cylinder and catalytic-converter processes of combustion engines

Abstract: A laser mass spectrometer (LAMS) for simultaneous detection of NO, NO2, NH3 and other components (N2O, CO, O2, H2O, aroms.) in the exhaust of combustion engines is presented. Its temporal resolution is in the 10 ms range. Comparison with non-dispersive IR, flame ionization detection and chem. luminescence detection have been performed. Emissions of Otto and Diesel engines have been studied at different velocities, load and three sampling positions: in front of a catalytic pre-converter, in front and after the main catalytic converter. Finally, NO, CO, H2O, toluene and O2 were detected within the cylinder in dependence on the crank angle with a time resolution in the 10 ms range. [on SciFinder(R)]

Stichworte: Combustion engines Exhaust gas catalytic converters Exhaust gases (detection of nitric oxide, nitrogen dioxide, ammonia and other components in exhaust of combustion engines by laser mass spectrometer) Petroleum hydrocarbons Role: ANT (Analyte), OCU (Occurrence, unclassified), POL (Pollutant), ANST (Analytical study), OCCU (Occurrence) (detection of nitric oxide, nitrogen dioxide, ammonia and other components in exhaust of combustion engines by laser Air pollution (monitoring detection of nitric oxide, nitrogen dioxide, ammonia and other components in
exhaust of combustion engines by laser mass spectrometer) combustion engine exhaust gas catalytic converter air pollution monitoring

Kongressstitel: CAN 143:330913 59-3 Air Pollution and Industrial Hygiene Technical University Munich, Germany. Journal 0099-5908 7732-18-5 (Water); 7782-44-7 (Oxygen) Role: ANT (Analyte), OCU (Occurrence, unclassified), ANST (Analytical study), OCCU (Occurrence) (detection of nitric oxide, nitrogen dioxide, ammonia and other components in exhaust of combustion engines by laser mass spectrometer); 71-43-2 (Benzene); 74-85-1 (Ethylene); 108-88-3 (Toluene); 630-08-0 (Carbon monoxide); 1330-20-7 (Xylene); 7446-09-5 (Sulfur dioxide); 7664-41-7 (Ammonia); 10024-97-2 (Nitrous oxide); 10102-43-9 (Nitric oxide); 10102-44-0 (Nitrogen dioxide) Role: ANT (Analyte), OCU (Occurrence, unclassified), POL (Pollutant), ANST (Analytical study), OCCU (Occurrence) (detection of nitric oxide, nitrogen dioxide, ammonia and other components in exhaust of combustion engines by laser mass spectrometer)


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