

Experimental unit for industrial catalysts testing

Description/Parameters

Continuous catalytic unit with fix-bed reactors (stainless steel, i.d. 6, 8, 30 and 50 mm) for simulation of heterogeneous reactions in the gas phase especially for reactions for waste gas cleaning. Suitable for simulation of waste gas containing up to 6 different compounds including water vapour. For analysis of inlet and outlet reaction mixture, on-line IR analysers for N_2O analysis (GMS800, Sick) and NO/NO_2 analysis (ULTRAMAT 6, Siemens) with catalytic converter (TESO), FTIR (Nicolet) or GC/TCD/FID are available.

Utilization/Services

Testing of solid catalysts in different form (powder, pellets, tablets, foams, monoliths) for catalytic reactions in the gas phase: evaluation of activity, selectivity and long-term stability and deactivation.

- Reactions: catalytic decomposition of N_2O and NO , selective catalytic reduction of NO_x .
- Steady state experiments, temperature programmed reaction.
- Typical concentrations of inlet mixture (max. 5 compounds): 0 – 3000 ppm N_2O , 0-3000 ppm NO , 0 – 3000 NO_2 , 0- 21 mol.% O_2 , 0-3 mol.% H_2O , 0 – 3000 ppm NH_3 .
- Weight of catalyst: up to 100 ml of catalyst in different form.
- Total volume gas flow: 100 - 1000 ml min^{-1} (20 °C, 101 kPa).
- Temperature range: from ambient to 900 °C.
- Pressure: atmospheric.

