

CHAIR OF CHEMICAL PROCESS ENGINEERING

services

- ▶ Determination of physical and chemical data
- ▶▶ heat capacities, heats of reaction, decomposition temperatures (calorimetric measurements)
- ▶ distribution equilibria and adsorption isotherms (static measurements, frontal chromatography, perturbation techniques)
- ▶ diffusivities and permeabilities for porous media as catalysts, adsorbents, membranes (in various types of Wicke-Kallenbach cells)
- ▶ experimental determination of reaction rates under steady state and transient conditions
- ▶ solubilities (static methods, differential scanning calorimetry)
- ▶ quantification of migration processes in electric fields (capillary electrochromatography)

- ▶ Correlation of physical and chemical data
- ▶ Design of different separation and reaction processes
- ▶▶ fixed-bed adsorbents and chromatographic columns (batch processes and continuously operated simulated moving bed processes)
- ▶ fixed-bed reactors for heterogeneously catalyzed reactions
- ▶ membrane reactors (for improved performance of reversible reactions, for improved selectivities in networks of parallel and series reactions)
- ▶ chromatographic reactors
- ▶ combination of chromatographic separation and crystallization

- ▶ Mathematical modelling
- ▶▶ process simulation
- ▶ evaluation of process potential
- ▶ optimization