

STUDY ON DRYING OF CATALYST ELEMENTS AFTER WASHING

PROBLEM: 18 114 catalyst elements are dried in a SCR-Reactor after a washing process.

AIM: Calculation of the required time and air flow for the drying process.

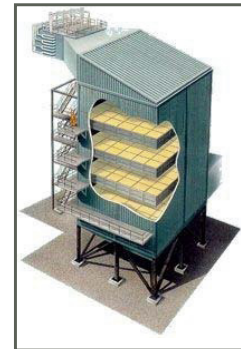


Figure 1: Principle of a SCR-Reactor

PROCEDURE: Drying tests in a laboratory convection dryer.



Figure 2: Laboratory convection dryer

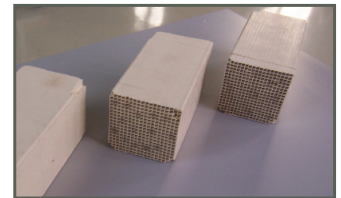


Figure 3: Studied catalyst components

MEASURING: The funktion of the drying curves depending on the temperature of catalyst components of various lengths (see figure 4).

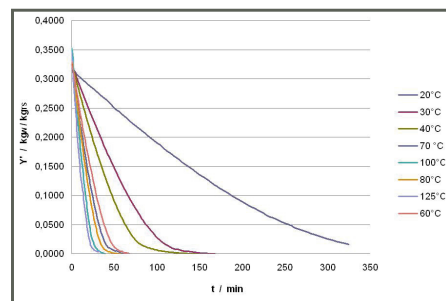


Figure 4: Drying curves funktionen

Y' Moisture charge of catalyst components
t Drying time

TEST EVALUATION AND SCALE-UP:

Determination of kinetic constants with the help of a process engineering mathematical model.

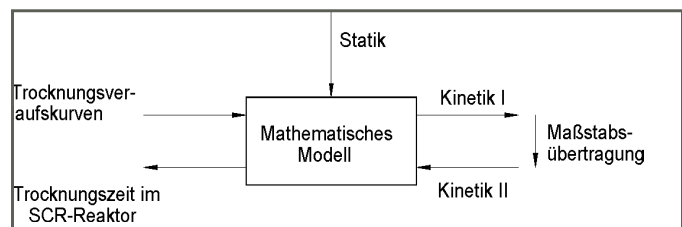


Figure 5: Mathematical model for the process of engineering

CONCLUSION: Drying time of 9 h at 40 °C and with $1,1 \cdot 10^6 \text{ m}^3/\text{h}$ of air.