## ROTARY KILN SIMULATION

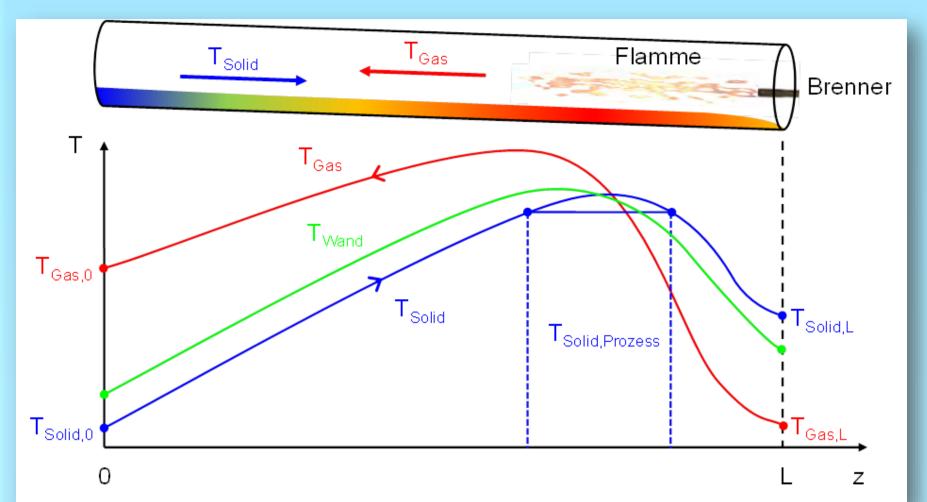
Prof. Dr.-Ing. Fabian Herz

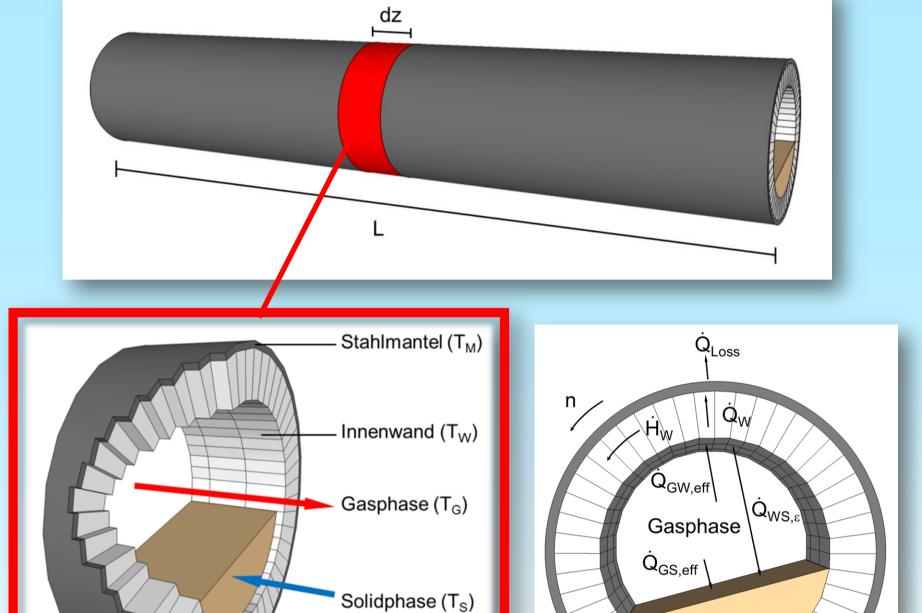
Apparatus and Plant Engineering, Anhalt University of Applied Sciences



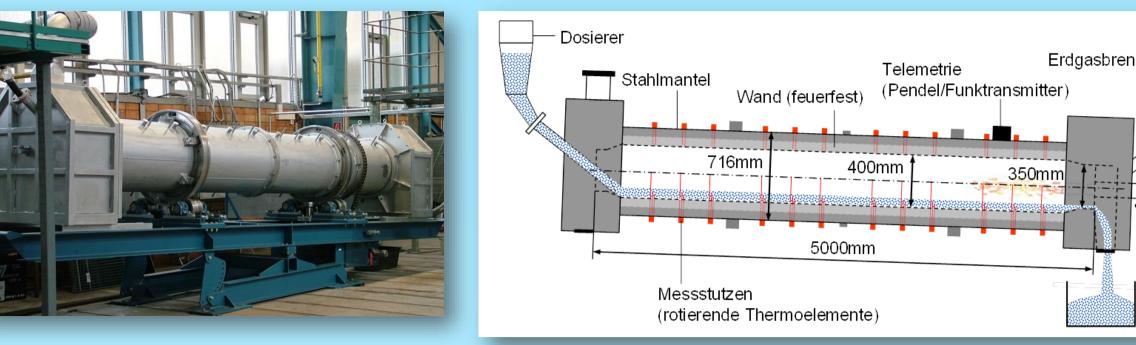
### **Process Simulation**

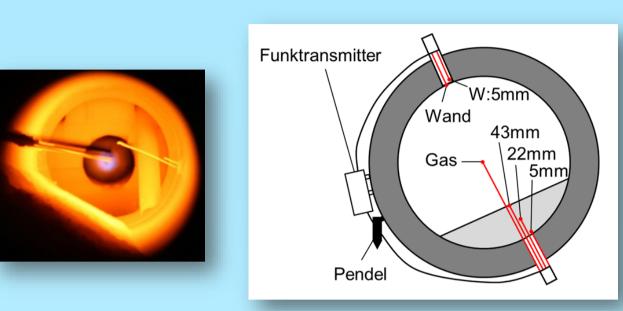
**Modell Structure** 

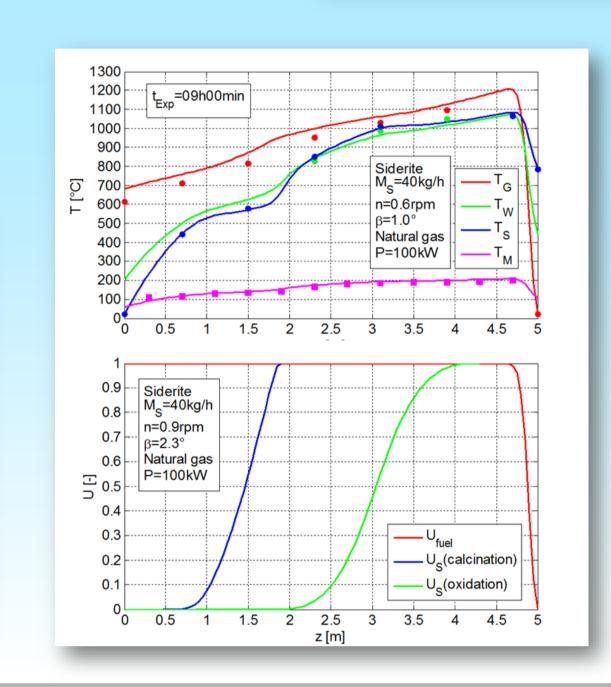


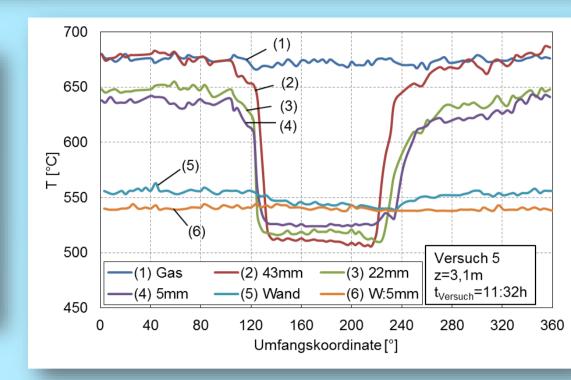


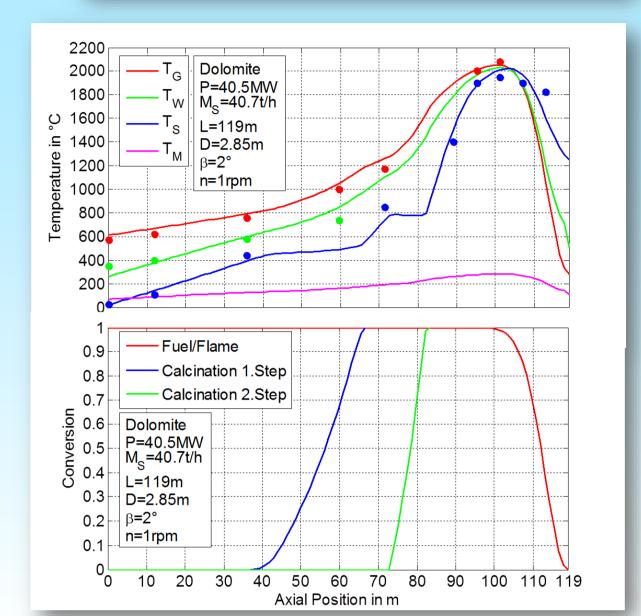
### **Validation in Pilot and Industrial Kilns**





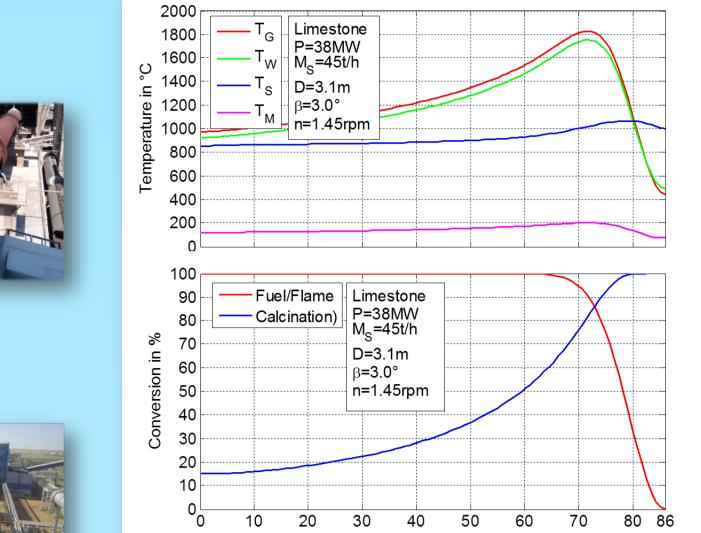




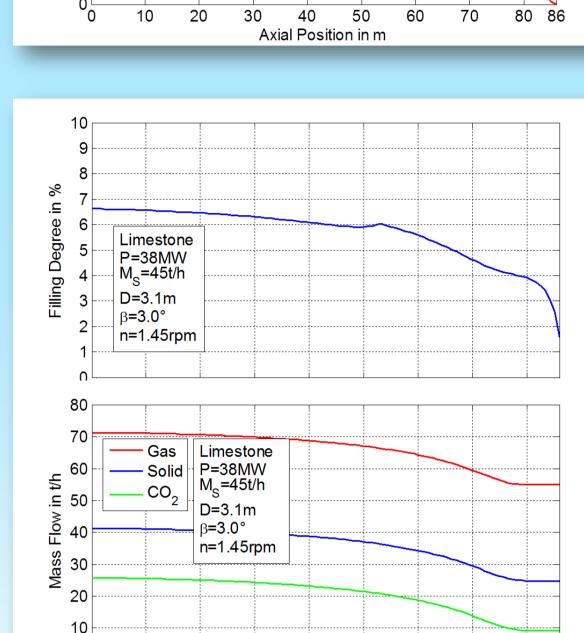


Rolling angle o

### **Simulation**



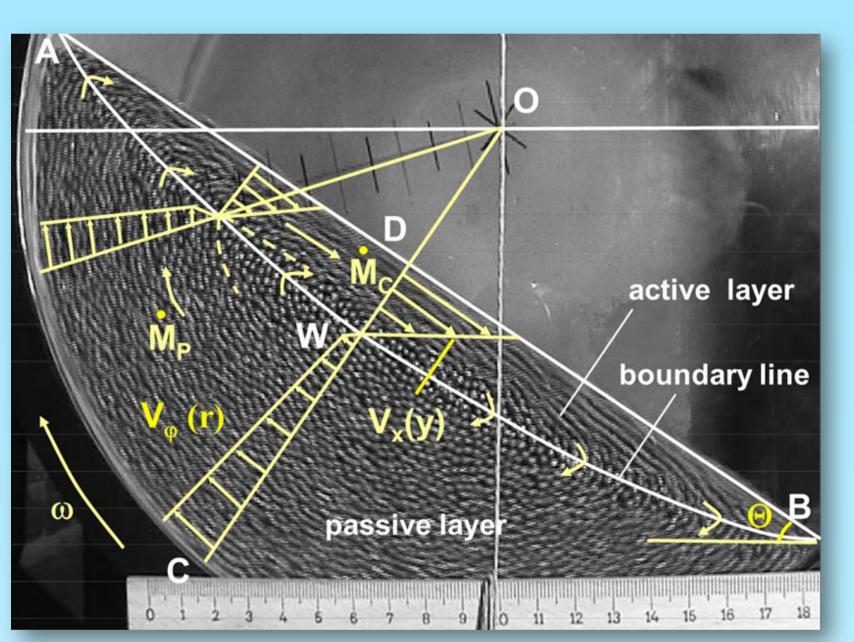


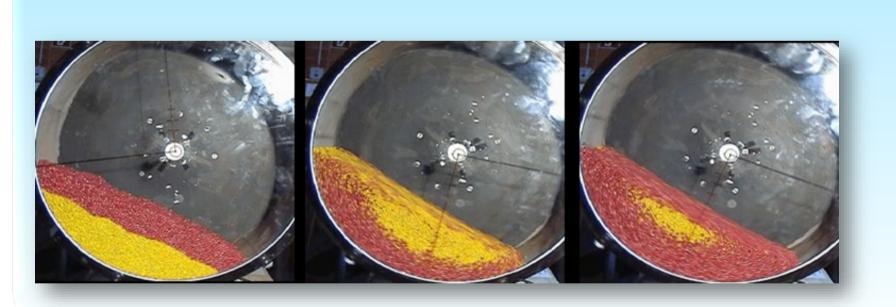


Axial Position in m

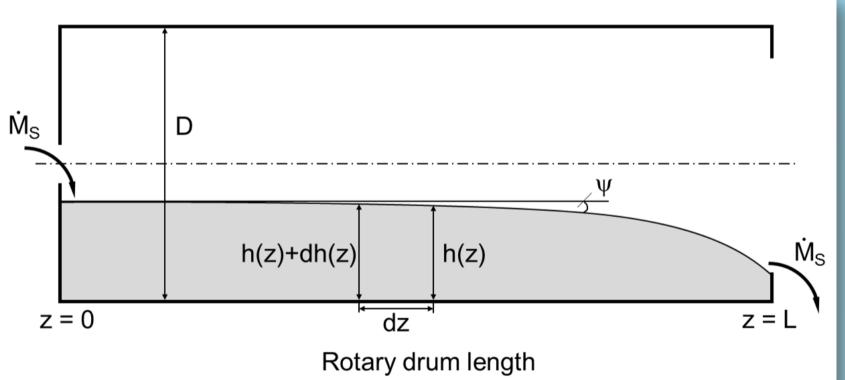
### **Bulk Bed Dynamics**

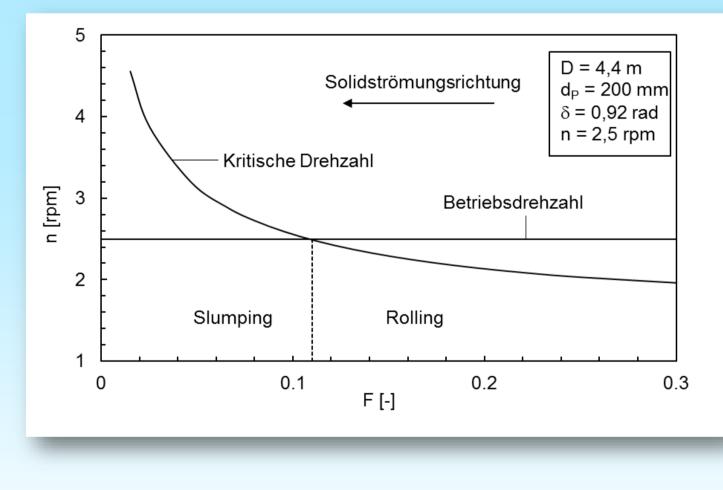
**Transversal Motion Behavior** 





### **Axial Transport**

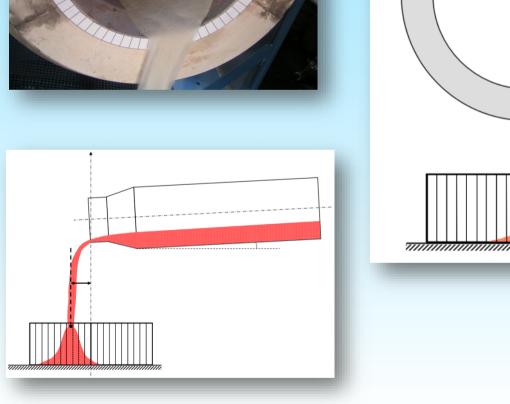




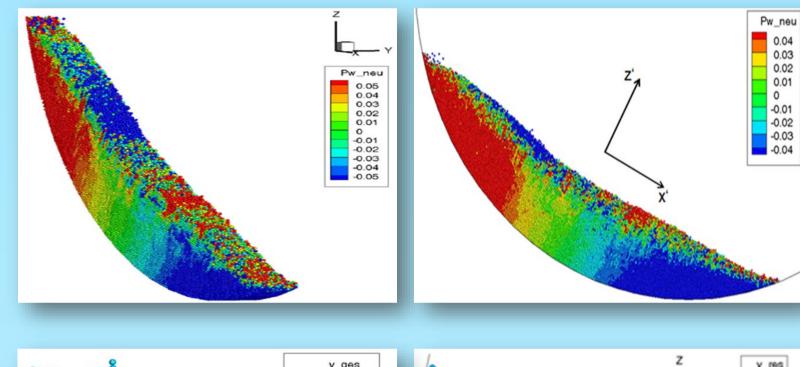
# Axial Component dz

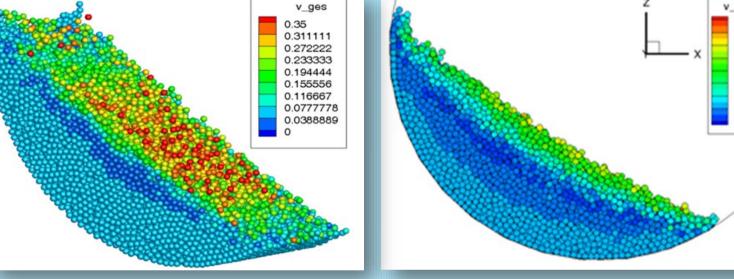
Transversal

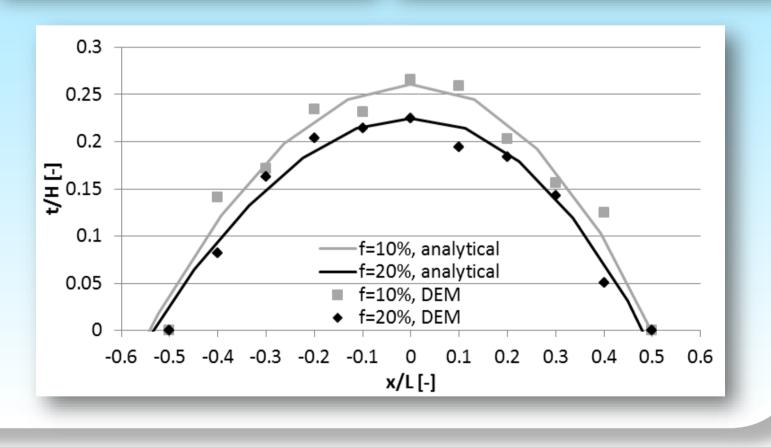
Component



### **Particle Tracking**

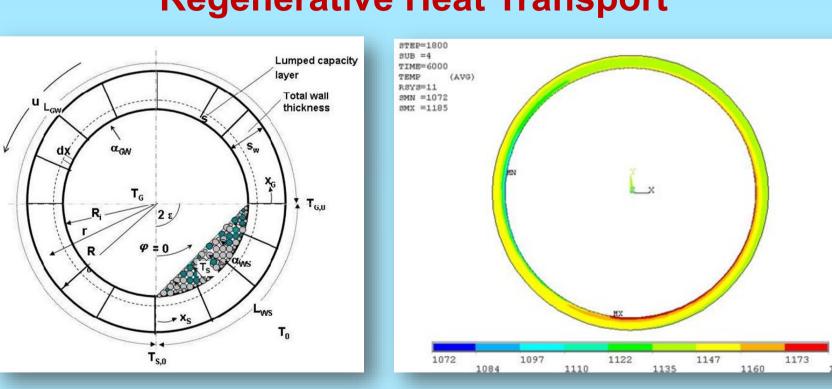


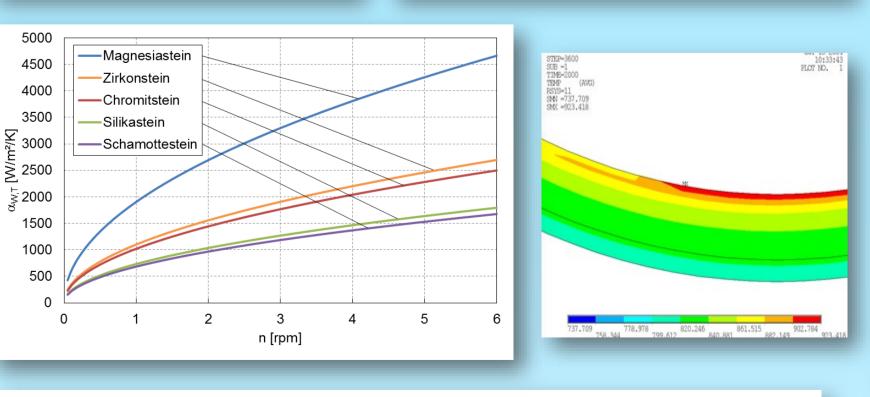


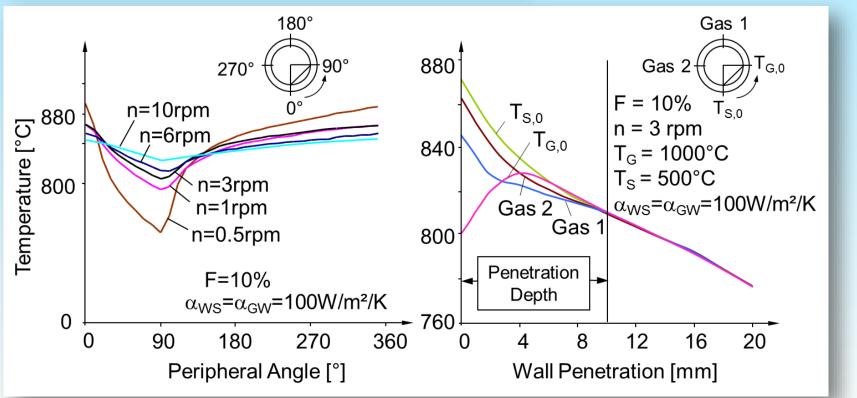


### **Heat Transfer**

**Regenerative Heat Transport** 

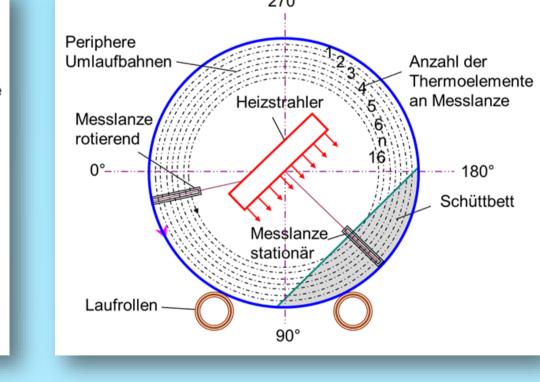


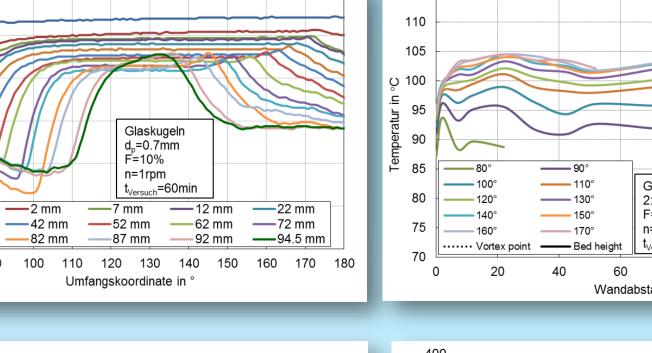


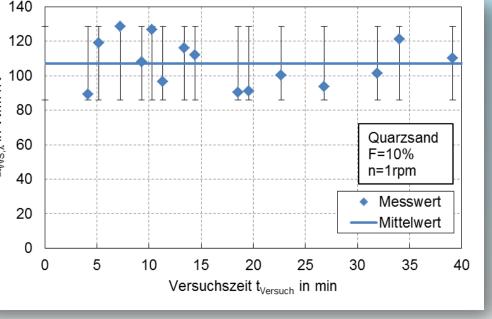


### **Heat Transport in the Bulk Bed**

Periphere Anzahl der Thermoelemente an Messlanze Messlanze



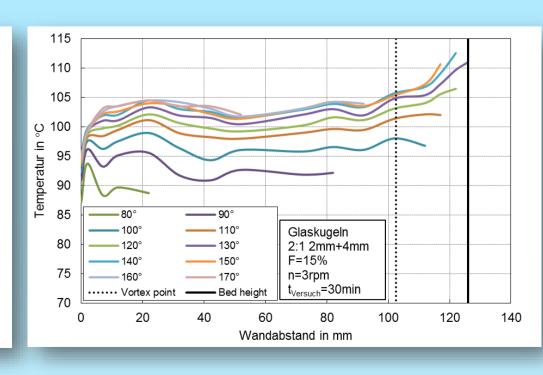


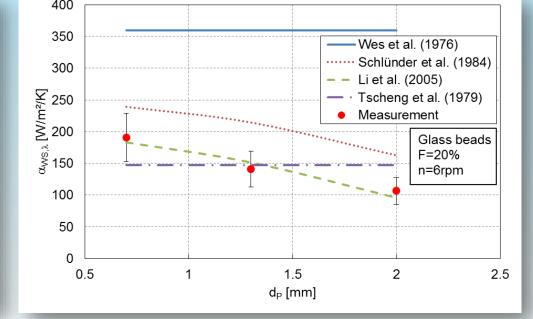


Glaskugeln d<sub>p</sub>=0.7mm F=10%

t<sub>Versuch</sub>=60min

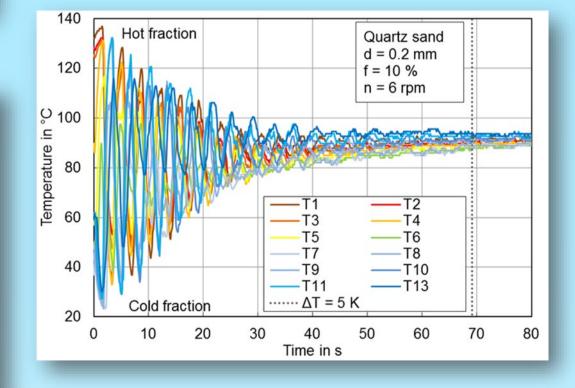
n=1rpm

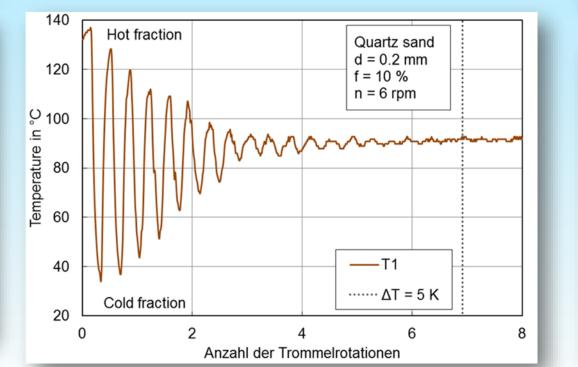




### Mixing

Particle





### **DEM-Simulation**

