A catalyst accelerates a chemical reaction without being consumed in the reaction.

Good heat and mass transfer is required for optimal catalyst use, therefore fluidization is applied.

The slip velocity is the difference between the velocity of the solid particle and the velocity of the gas phase.

The higher the slip velocity, the better the heat and mass transfer.

The following forces are used to counteract the drag force from the gas.

- Gravitational force
- Centrifugal force

Higher slip velocity with centrifugal force.

3 gas-solid vortex reactors at the Laboratory for Chemical Technology

- Cold flow GSVR
- Hot flow GSVR
- Reactive flow GSVR

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