

# Fluidized bed technology beneficial for SNG production

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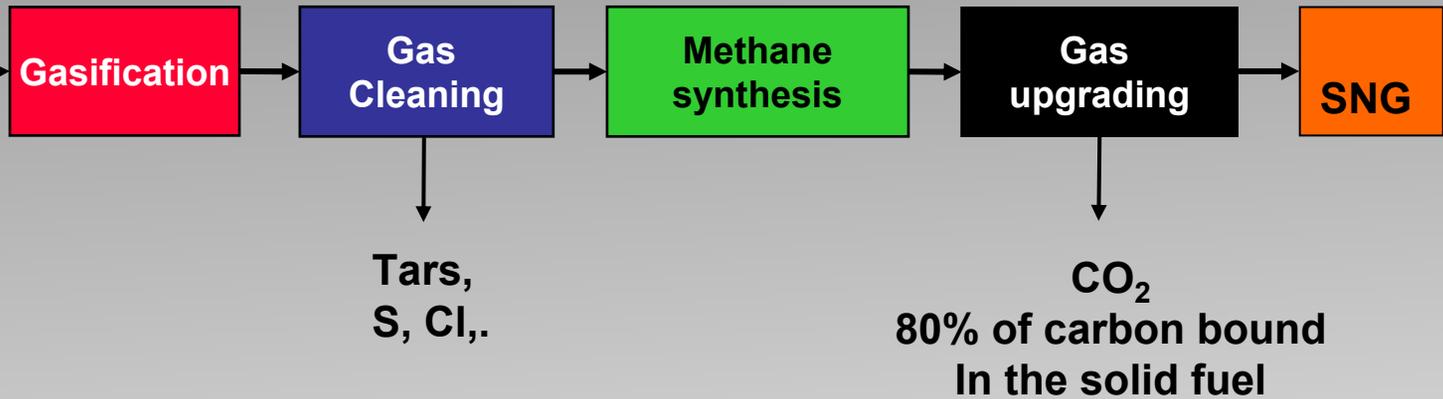
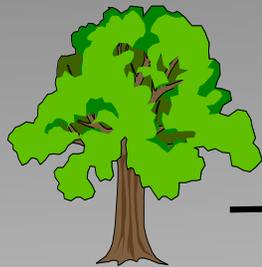


# GoBiGas

## Gothenburg Biomass Gasification Project

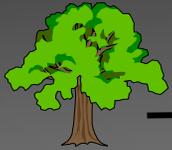
- **Gasification of biomass and production of biomethane**
- **Commercial scale—approximately 100 MW gas -with the potential of producing 800 biomethane GWh per year**
- **High-calorific gas(SNG) by methanation for distribution in the existing gas grid**
- **Also possible to use the gas as fuel in Rya CHP-plant**
- **Situated in the harbour of Gothenburgwith the potential to transport fuel by boat or train**
- **Cooperation with E.on**

# Biomass to SNG Process



# Indirect gasification

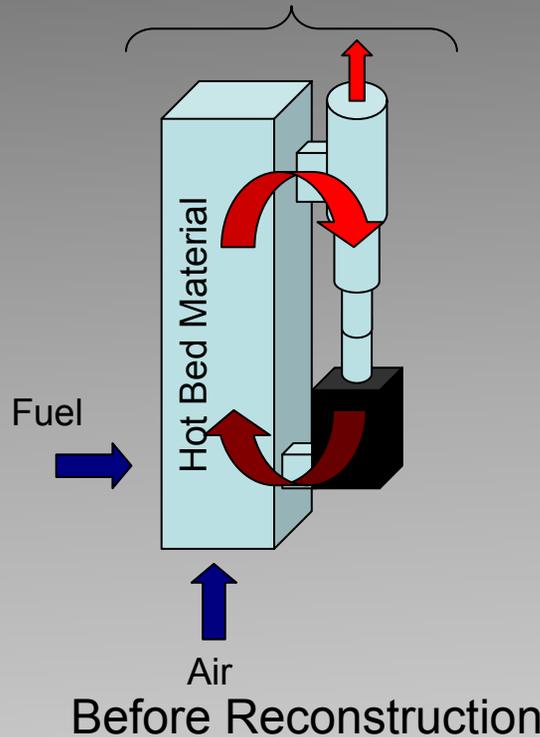
Circulating fluidized bed (CFB)



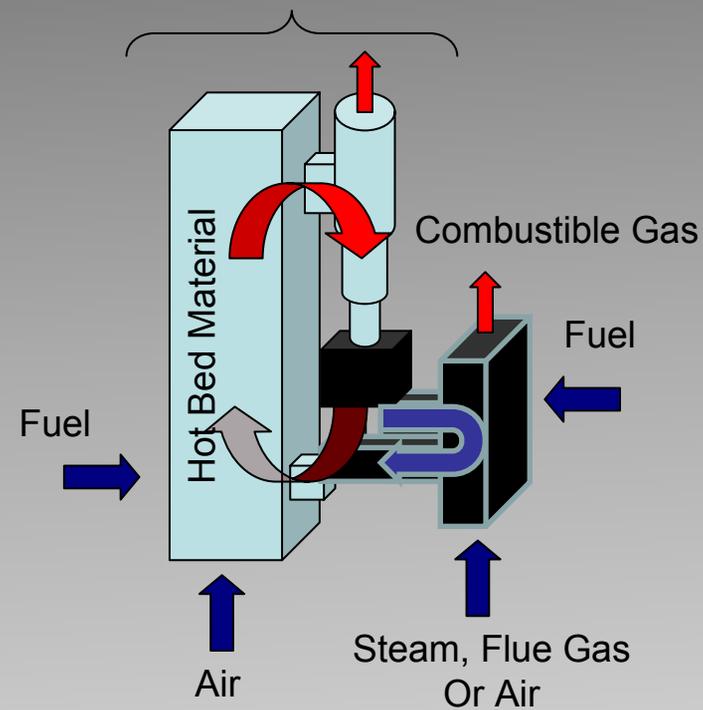
Gasification

Heat, Electricity, Steam

Heat, Electricity, Steam



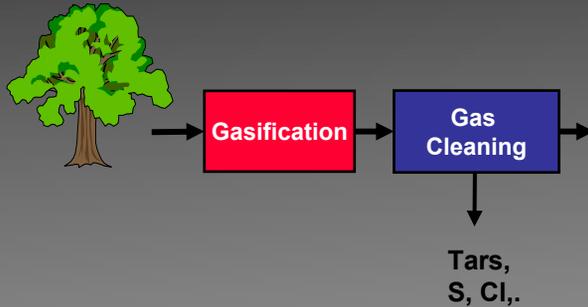
Before Reconstruction



After Reconstruction

-  Circulating bed
-  Bubbling beds

# Typical raw gas composition (indirect gasification)



$H_2$  23 %

$CO$  43 %

$CO_2$  14 %

$CH_4$  13 %

$C_2H_4$  ~3 %

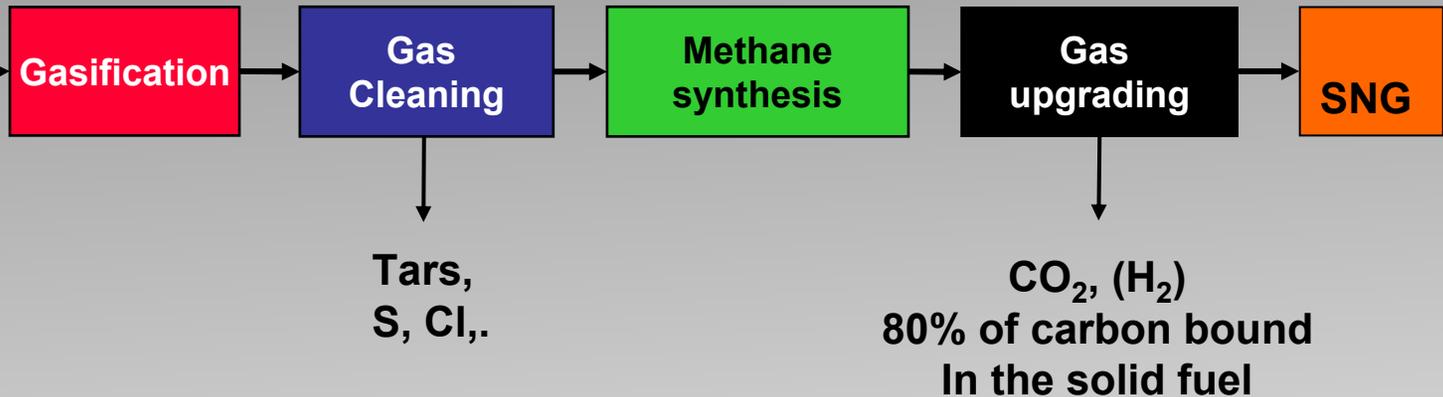
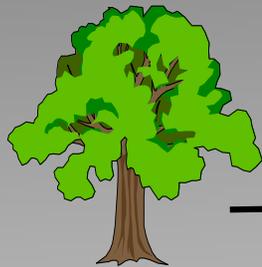
$C_2H_6$  ~0.5 %

Tars up to 3 %

**Product!**

**Problem!**

# Biomass to SNG Process

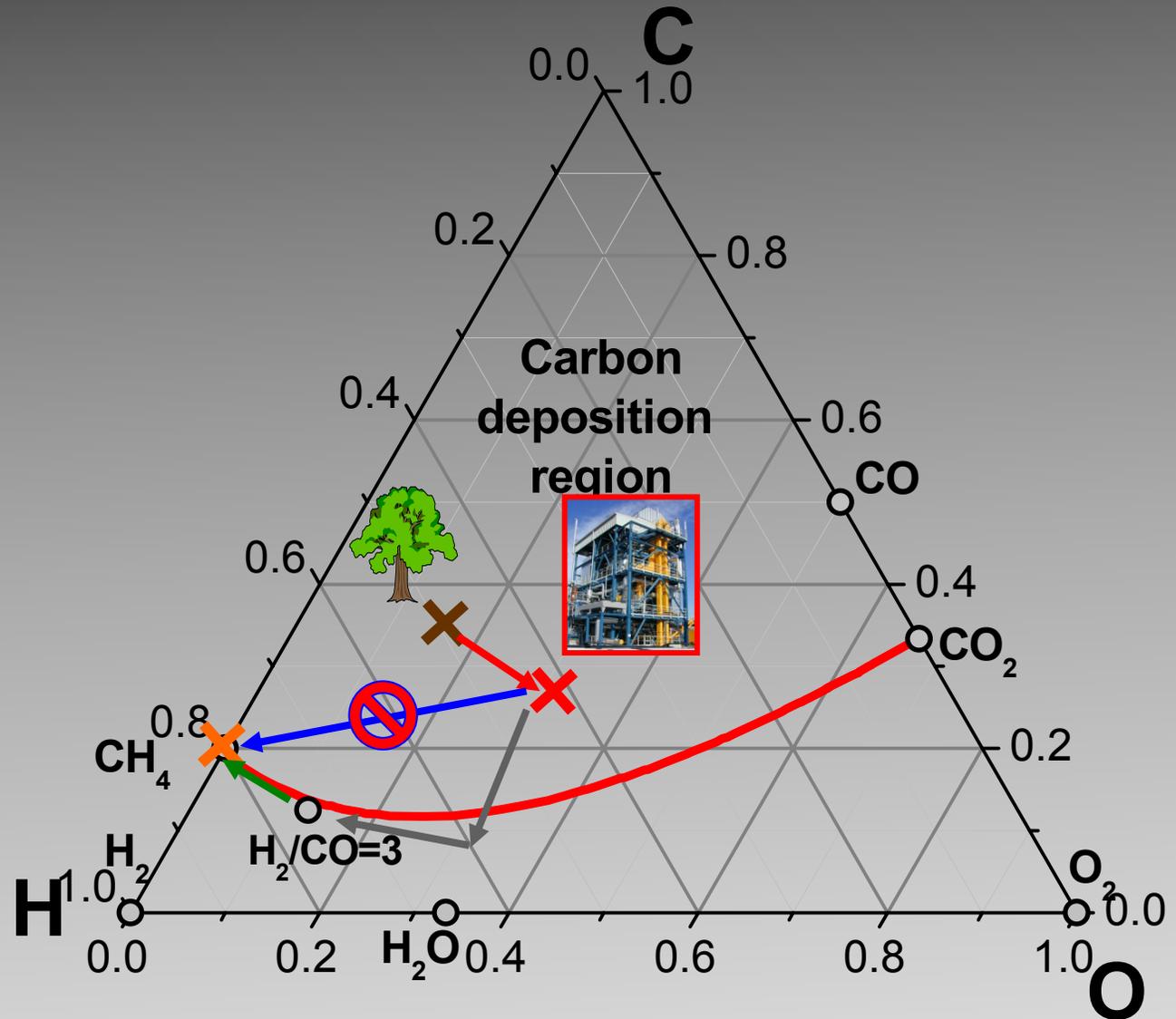
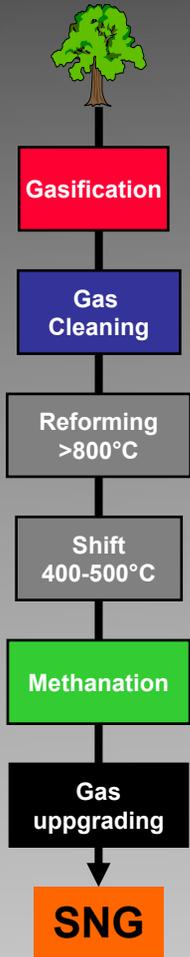


# Synthesis of Methane

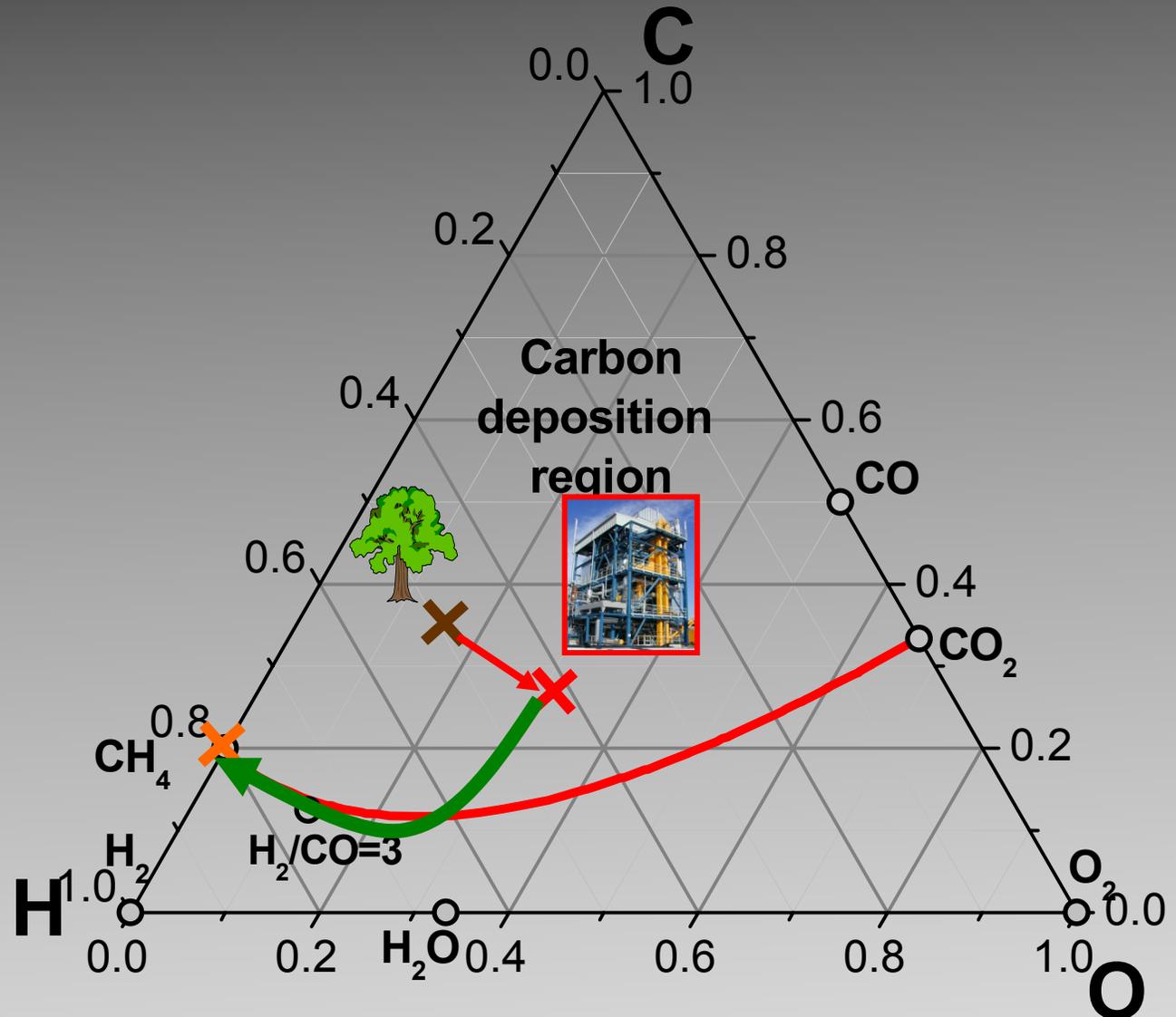
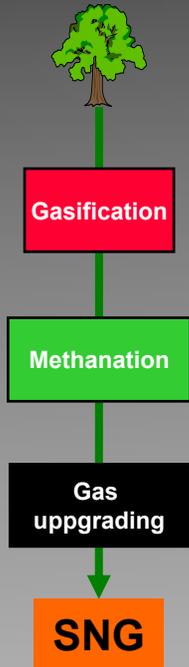
→ Methane synthesis



# Fixed bed Methanation

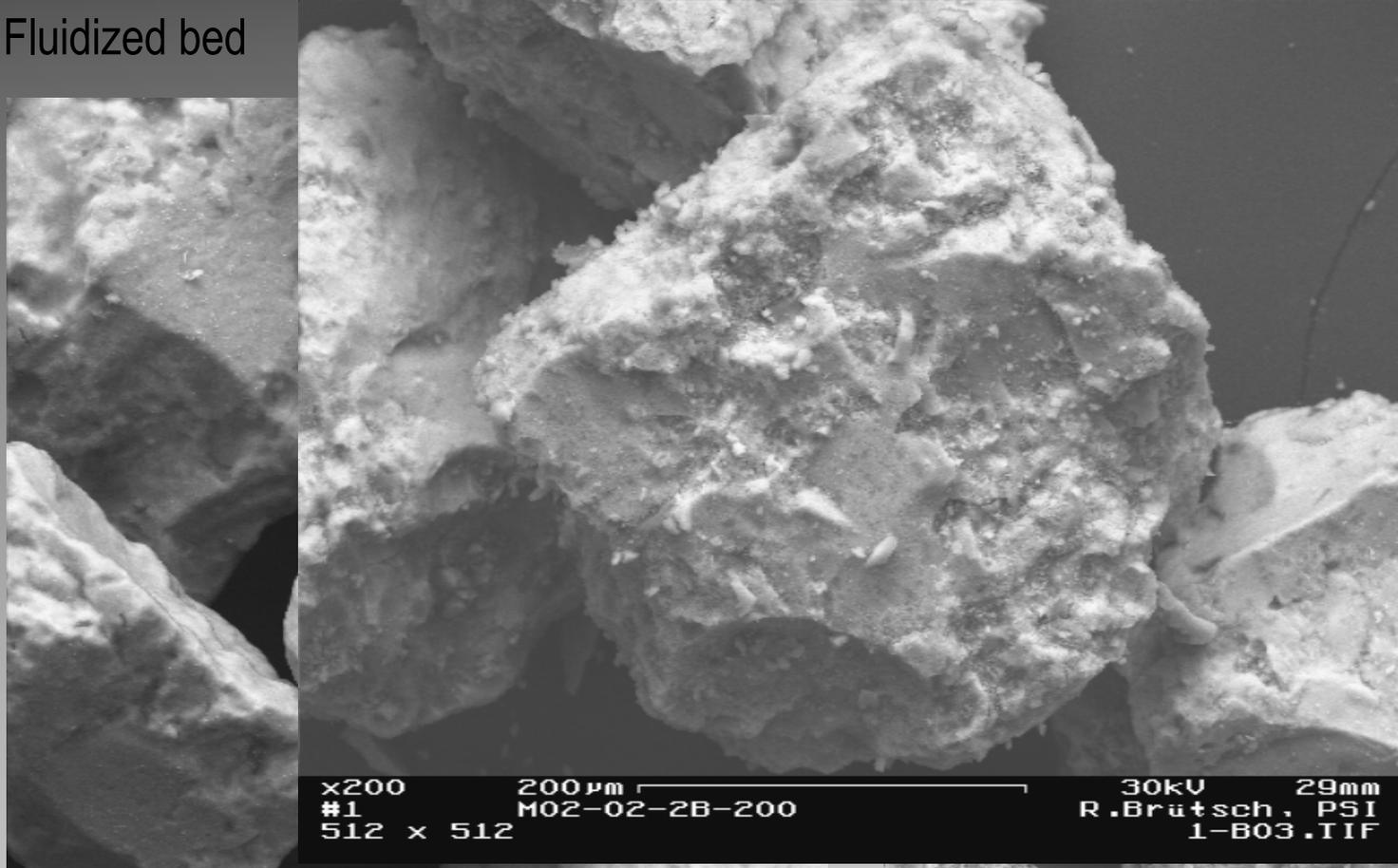


# Fluidized bed Methanation

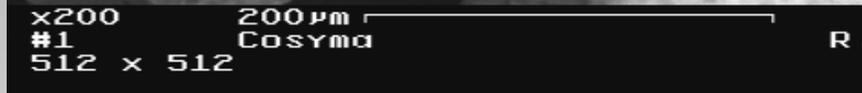
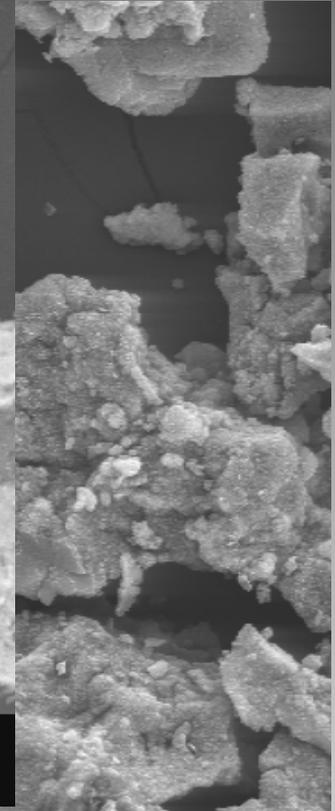


# Comparison Fluidbed vs Fixedbed

Fluidized bed



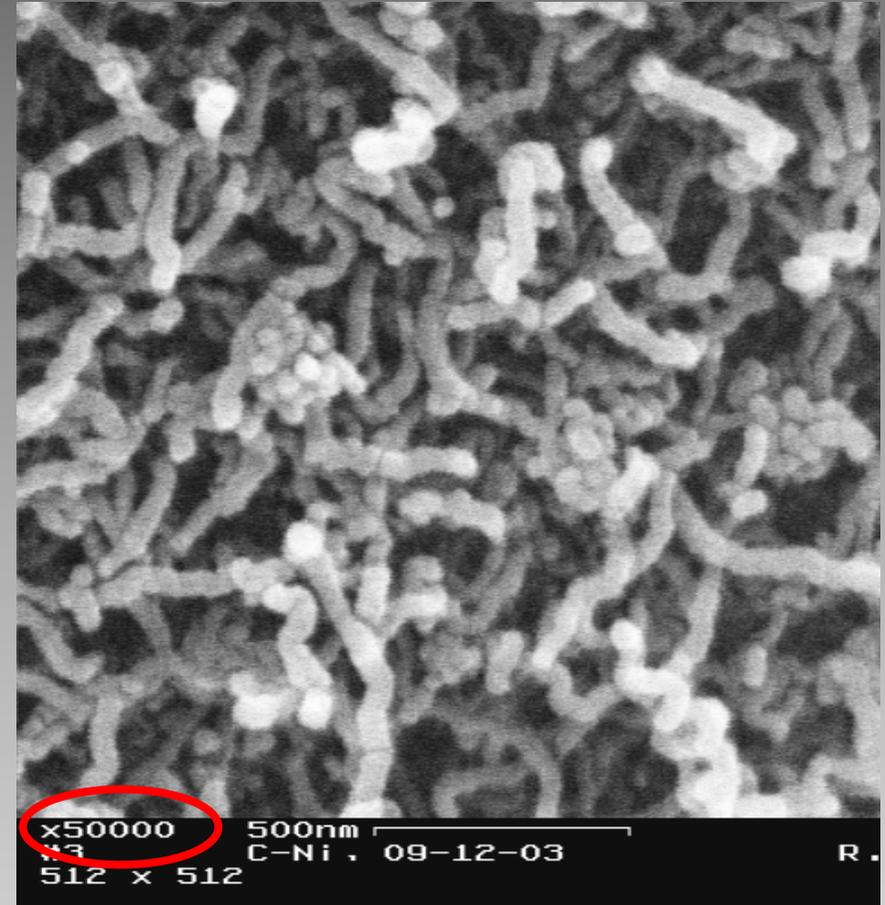
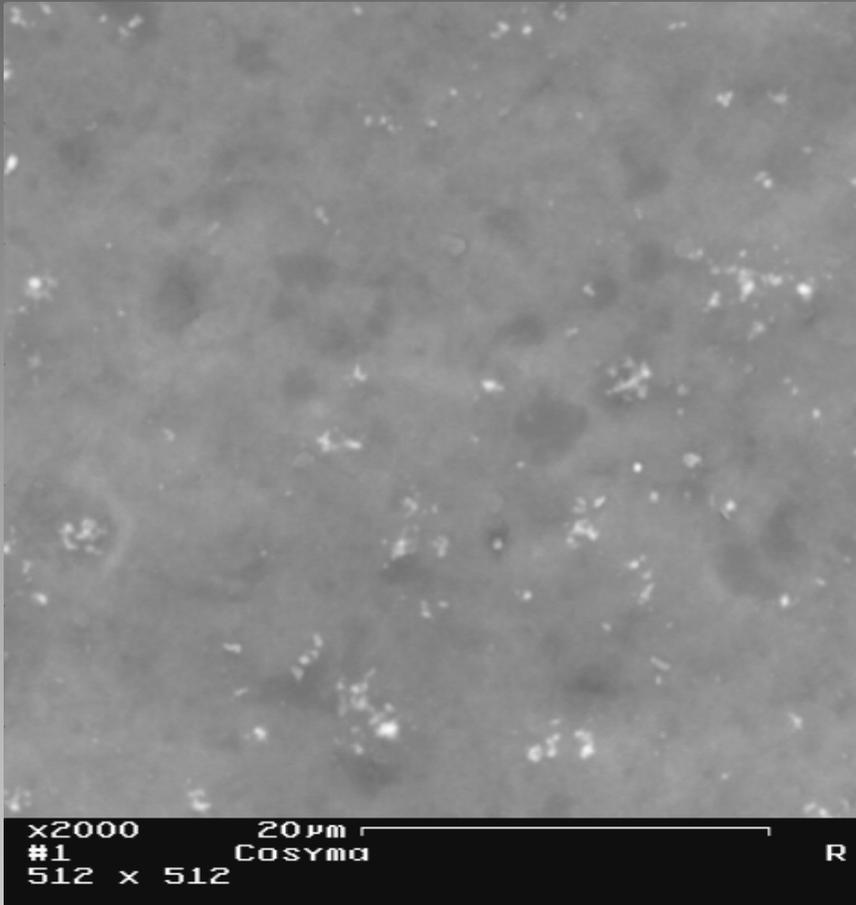
Fixed bed



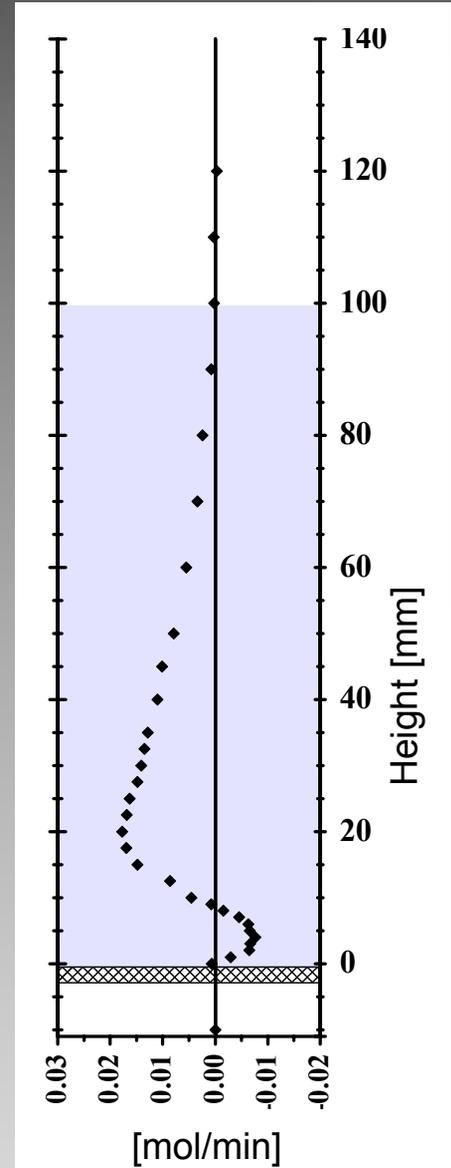
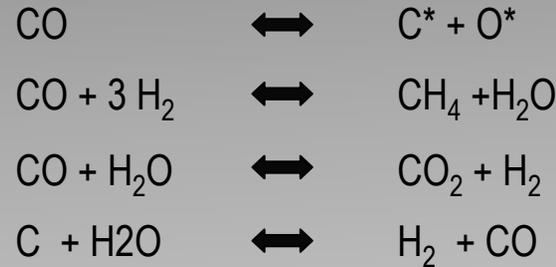
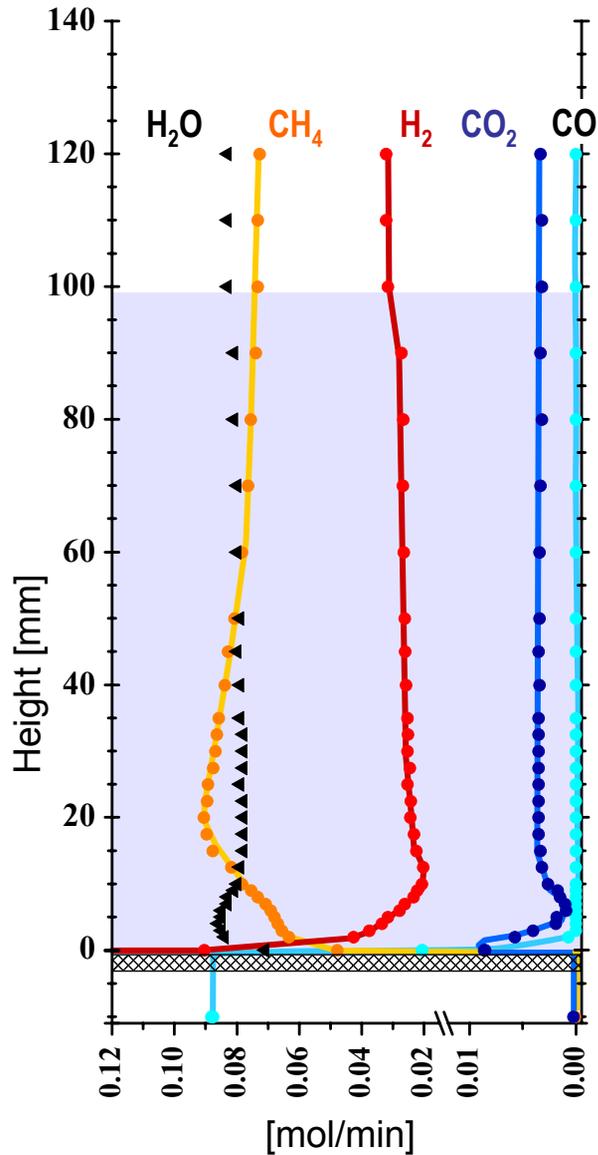
# Comparison Fluidbed vs Fixedbed

Fluidized bed

Fixed bed



# Regenerating effect of fluidization



# Regenerating effect of fluidization

