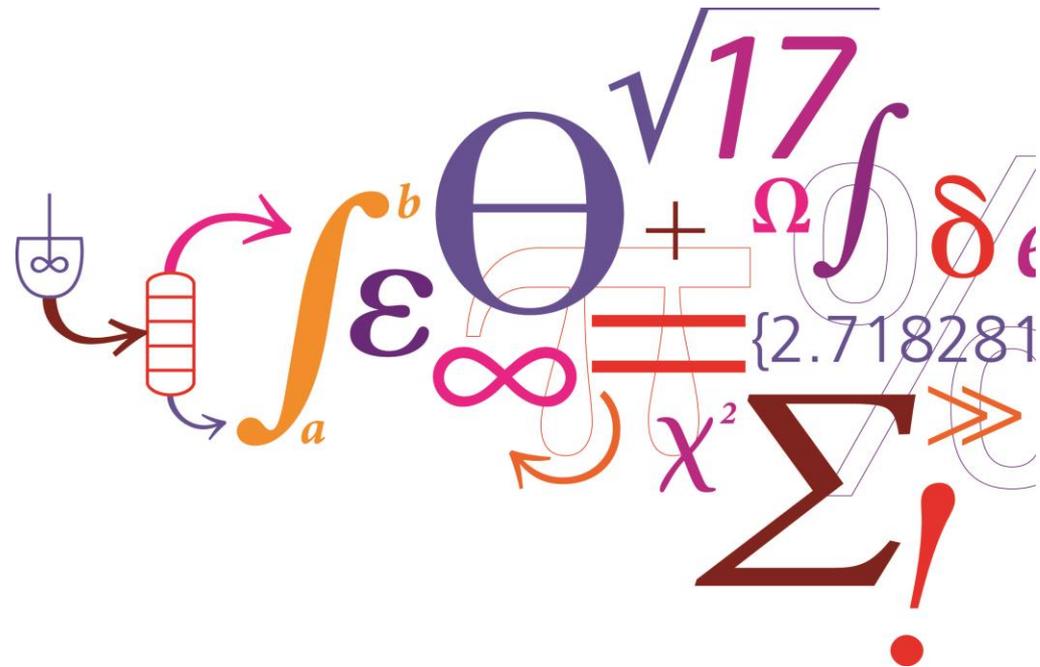


# The pilot plant facilities at DTU Chemical Engineering



# DTU Building 228

700 m<sup>2</sup> pilot plants, laboratories  
and workshop



These pilot plants are used for teaching and research.

As stand-alone units they are applied in our ordinary courses in process technology/unit operations lab.

Many units in combination are applied in the advanced course in process technology – for instance to simulate an entire industrial production process.

A number of mobile units are also available for special applications.

# Flow phenomena



Liquid flow in pipes

Liquid mixing and aeration of vessels



Pump systems



Gas flow in pipes

# Column operations



Continuous distillation in bubble-cap tray column



Absorption of ammonia in packed column



Batch distillation of alcohols using structured packing



# Drying processes

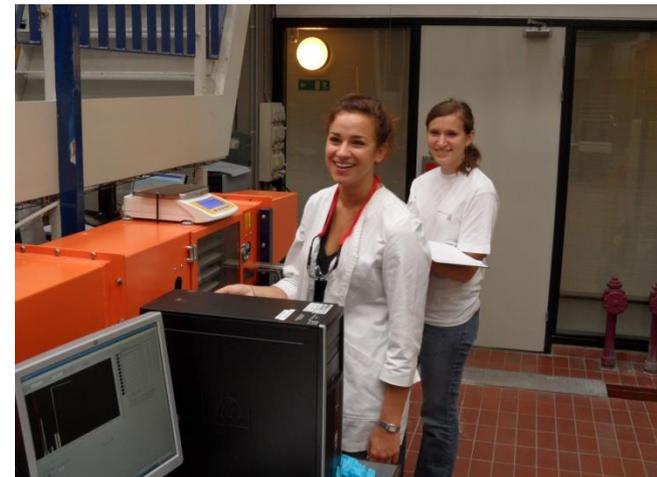


Fluidization and fluid bed drying



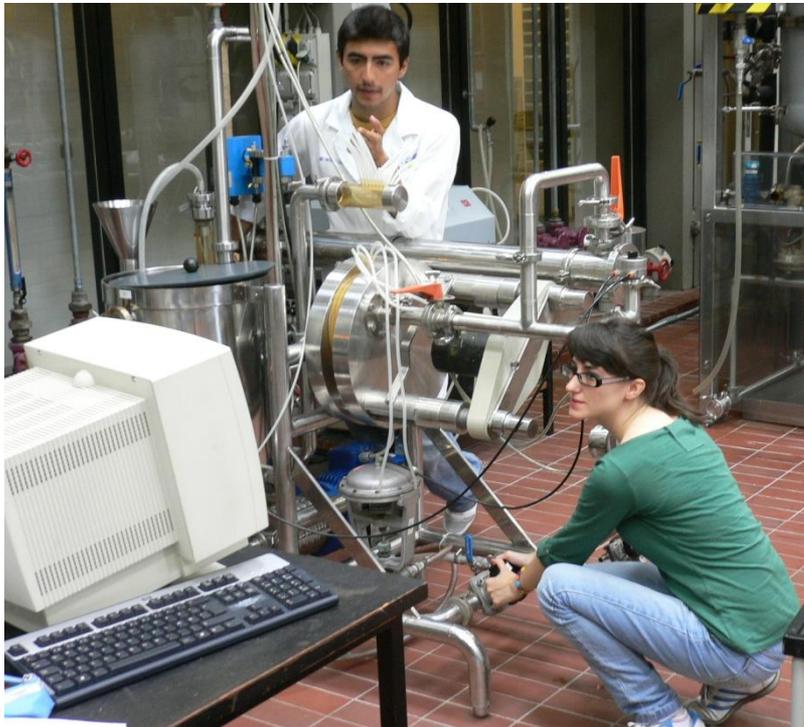
Spray drying

Drying on trays  
in a tunnel



# Separation processes, 1

Disk-stack centrifugation



Ultrafiltration



Filtration in  
a filterpress

# Separation processes 2

Vacuum crystallisation

Ammonia  
tray stripper



Evaporation in falling film evaporator

# Reactions



Fixed bed for immobilized enzyme processes, ion exchange or chromatographic separations



Multipurpose plant for organic synthesis



Bubble column for gas/liquid reactions, aeration etc.

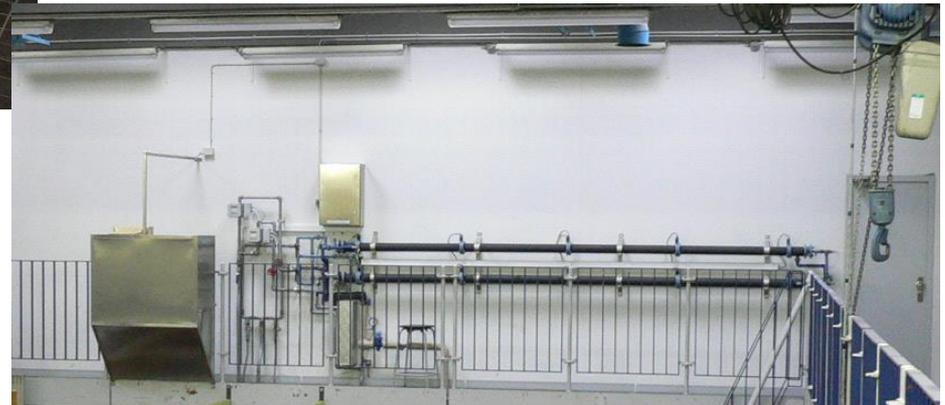
# Other operations 1



Liquid/liquid extraction



Solid/liquid extraction



Heat transfer in pipes and plate heat exchangers

# Other operations 2



Hydro cyclones



Mobile CIP unit



Various fermenters



High temperature plant