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# HIGH PERFORMANCE VAPOUR PERMEATION WITH ORGANIC MEMBRANES FOR DEWATERING ETHANOL AND OTHER ORGANIC SOLVENTS

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# HIGH PERFORMANCE VAPOUR PERMEATION

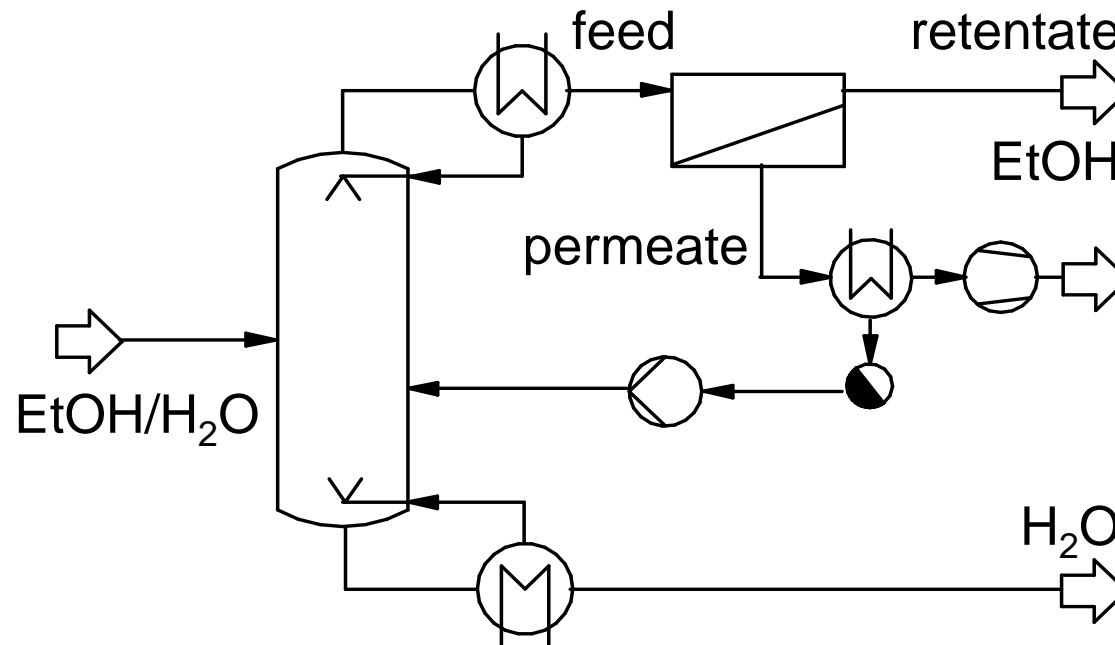
## Overview

- Motivation for dewatering with polymeric membranes
- Engineering package for industrial applications
- Advanced membrane
- Envelope type module
- Simulation result

# HIGH PERFORMANCE VAPOUR PERMEATION

## Motivation for dewatering with polymeric membranes

### Distillation / Vapour Permeation Hybrid Process



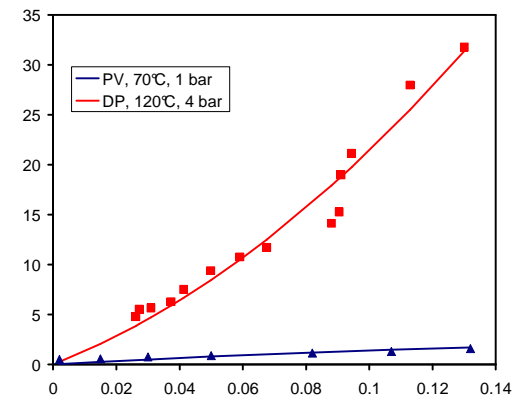
# HIGH PERFORMANCE VAPOUR PERMEATION

## Engineering package for industrial applications

- Membrane receipt
- Coating technique



- Membrane characteristic
- Warranty
- Quality control equipment



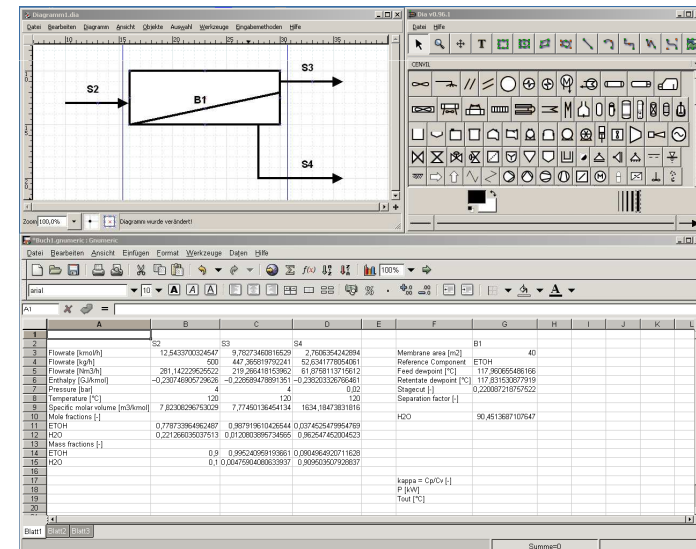
# HIGH PERFORMANCE VAPOUR PERMEATION

## Engineering package for industrial application

- Module design
- Packing and assembling guide

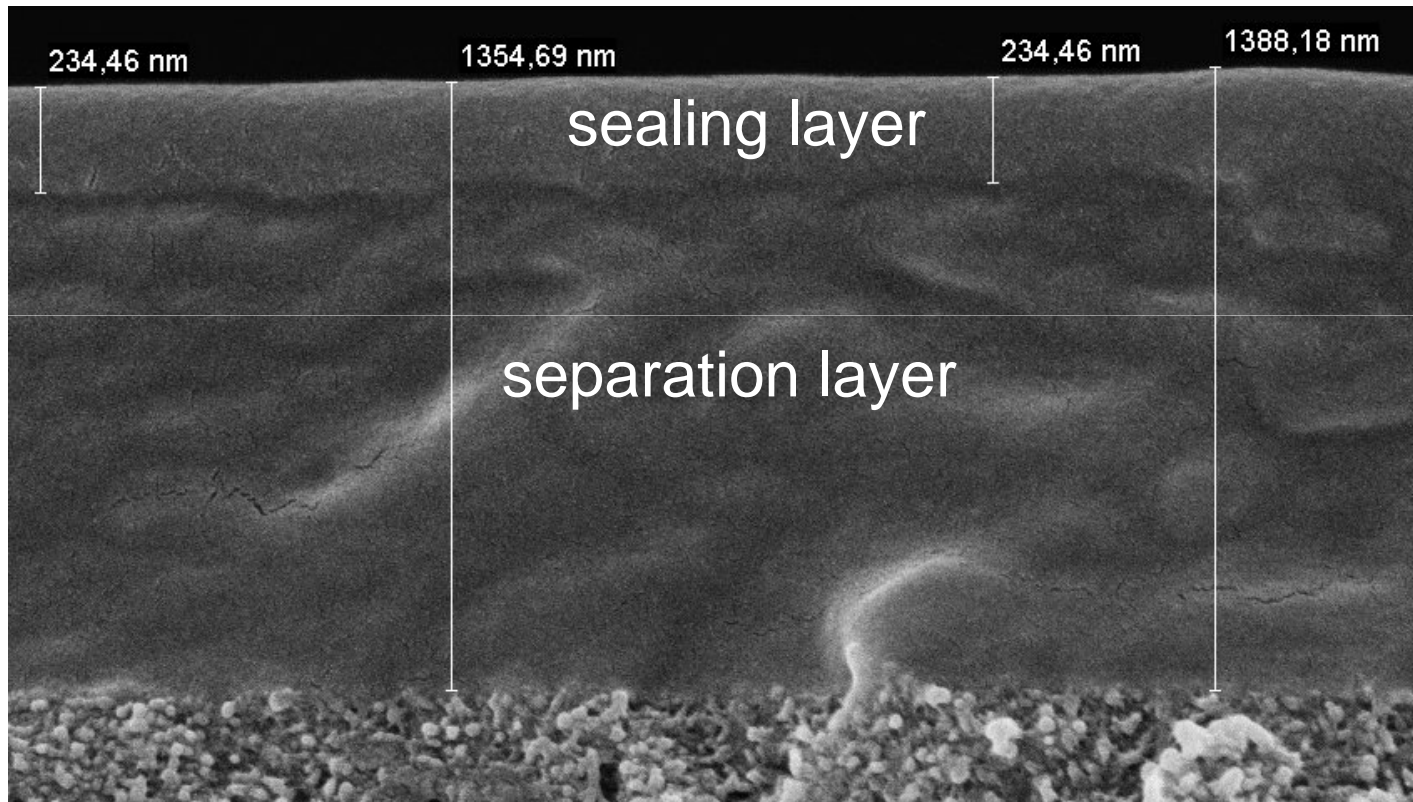


- Simulation software tool
- Support



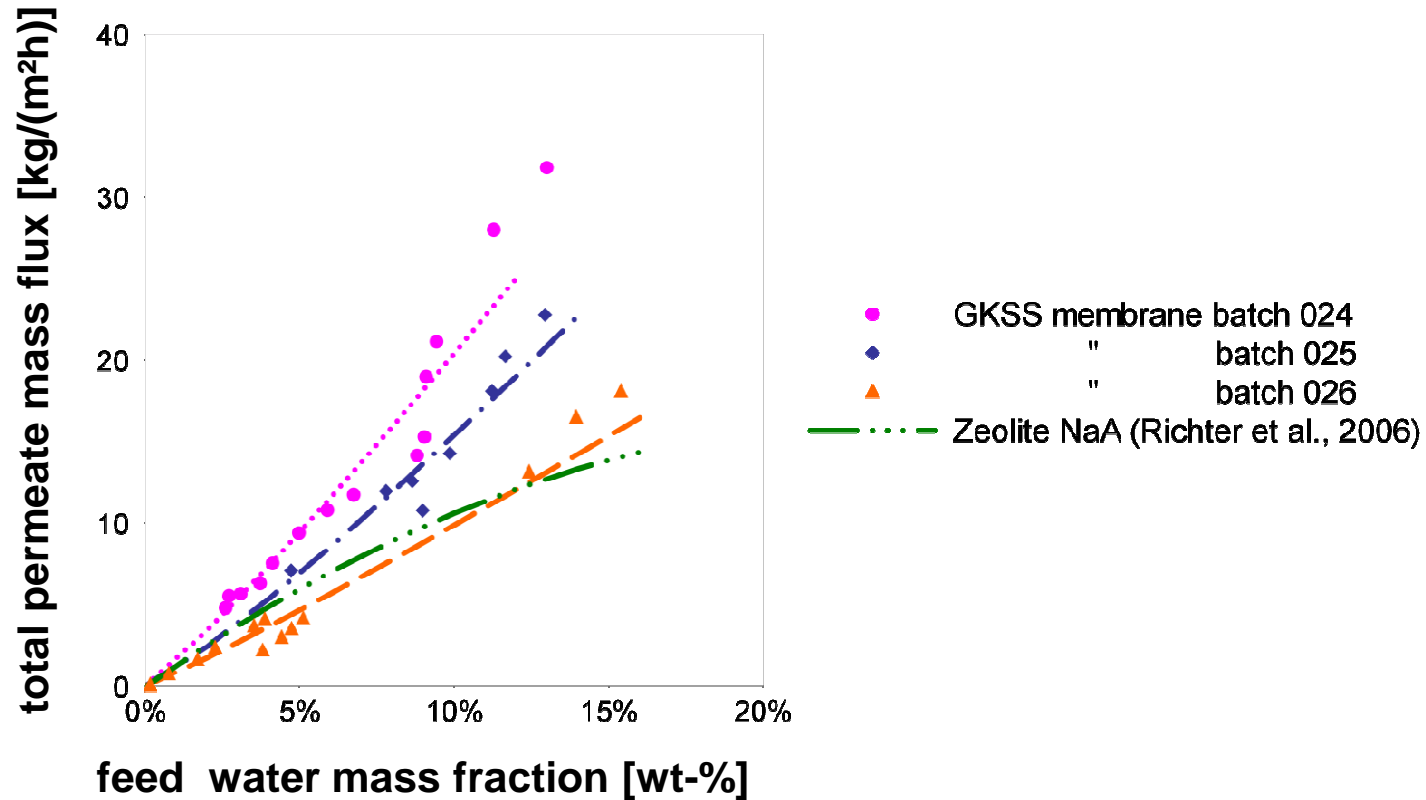
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## Advanced membrane



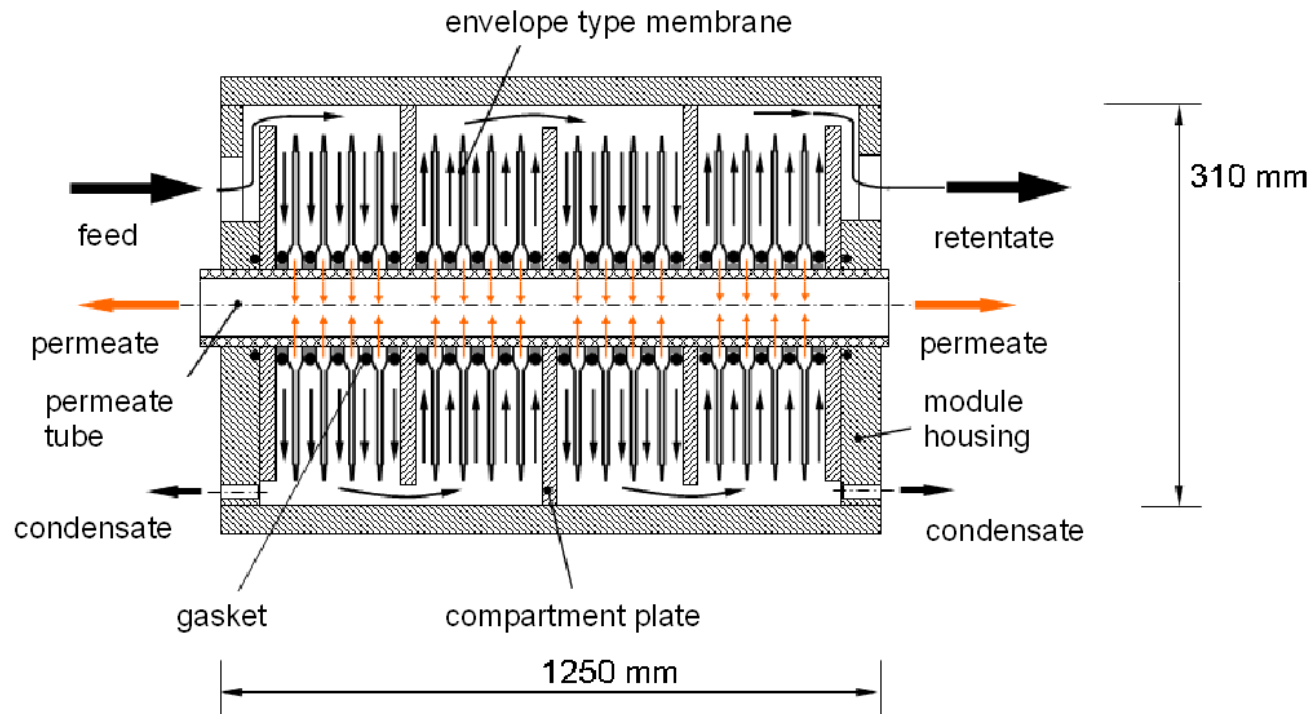
# HIGH PERFORMANCE VAPOUR PERMEATION

## Advanced membrane



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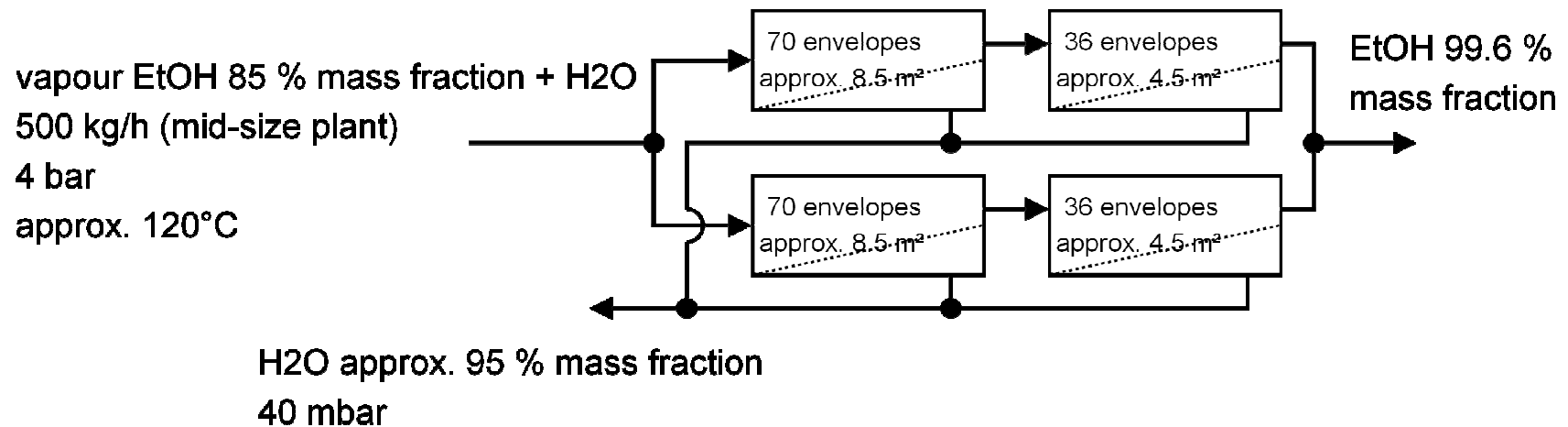
## Envelope type module





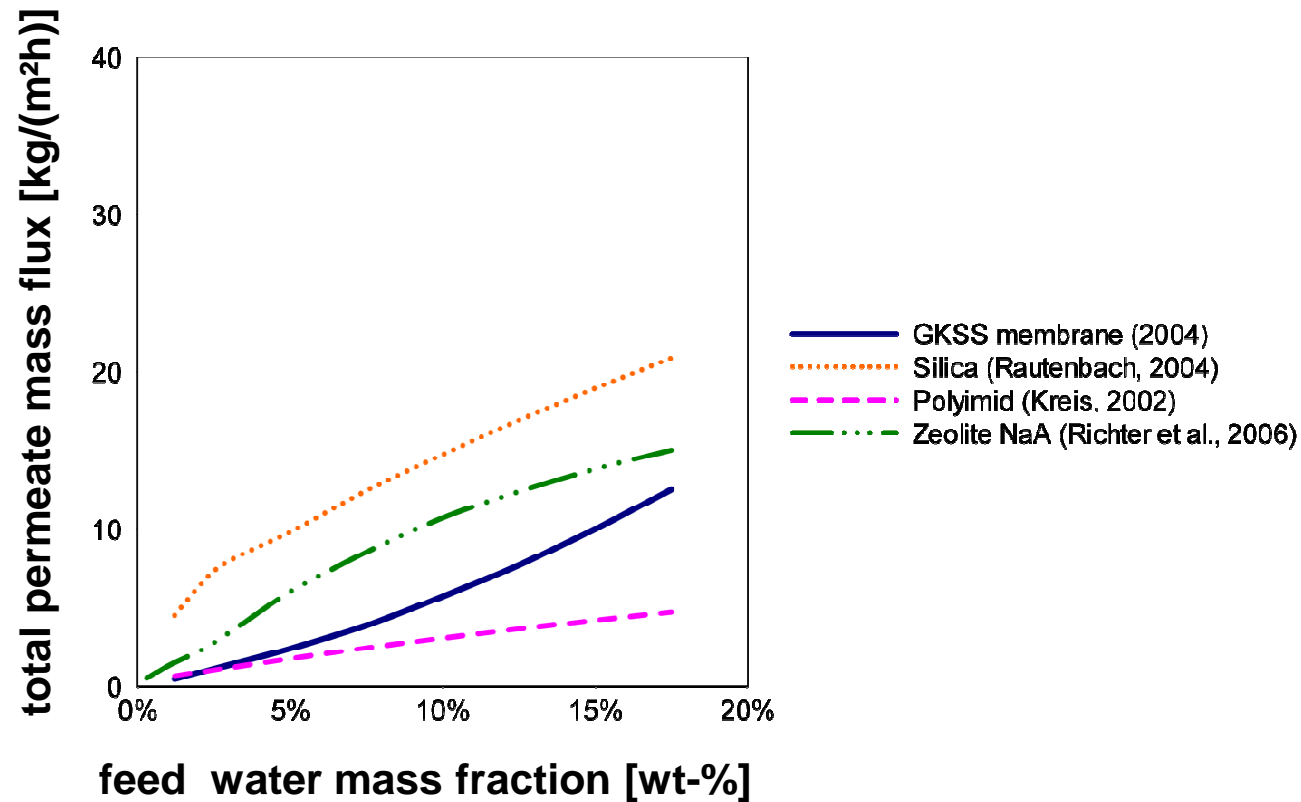
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## Simulation result



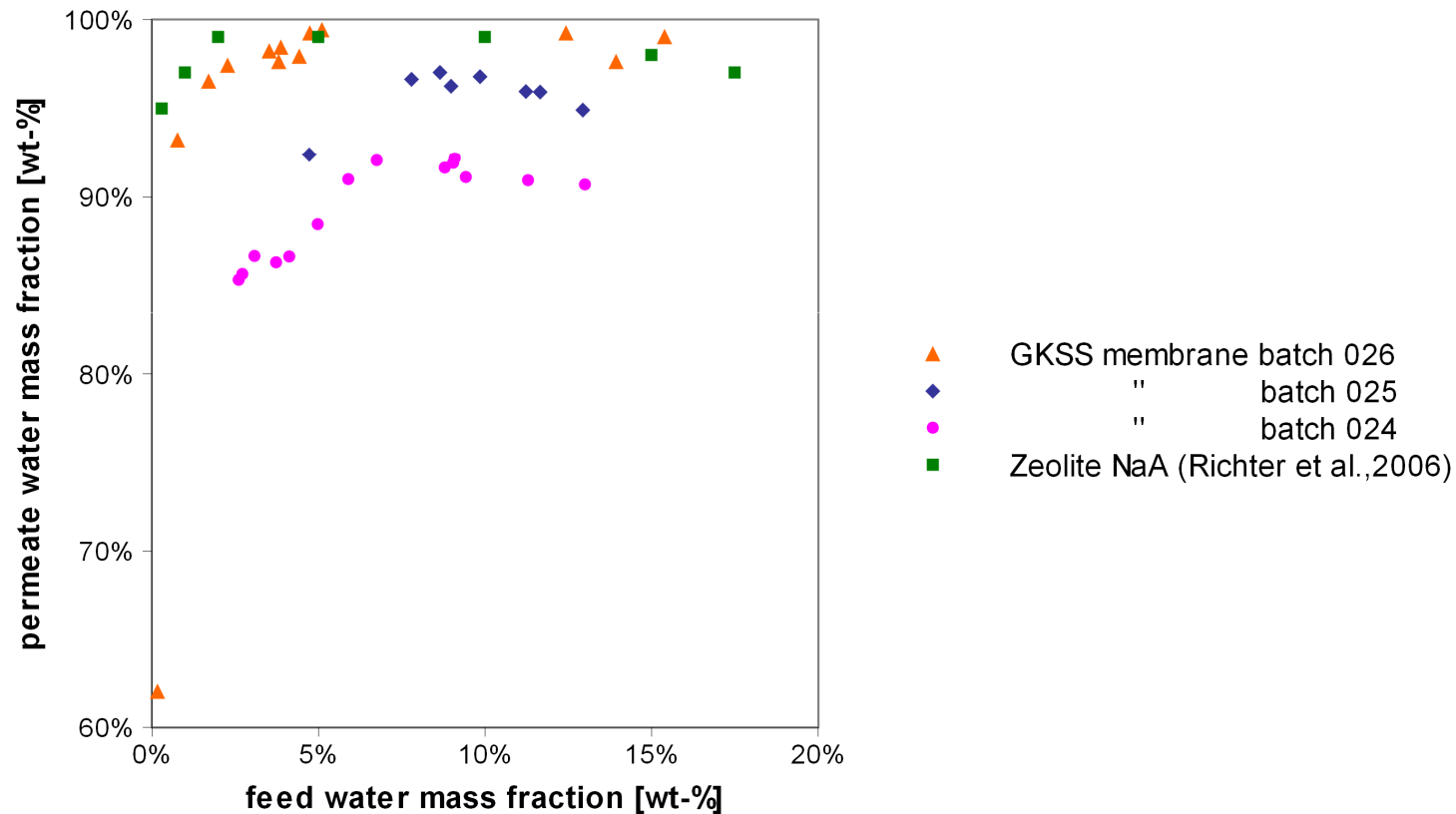
# HIGH PERFORMANCE VAPOUR PERMEATION

## Backup 1: Previous membrane



# HIGH PERFORMANCE VAPOUR PERMEATION

## Backup 2: Permeate mass fraction



# HIGH PERFORMANCE VAPOUR PERMEATION

## Backup 3: Envelope type module

