

# AIChE

American Institute of Chemical Engineers  
Netherlands/ Belgium Section



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**ExxonMobil**

**FLUOR.**



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**KH Engineering b.v.**



**Technip**



**Grontmij Industry**

**P&T TECHNO**

**TEBODIN**  
Consultants & Engineers

**Uop**  
A Honeywell Company



**Growing great ideas**

**Karin Husmann**



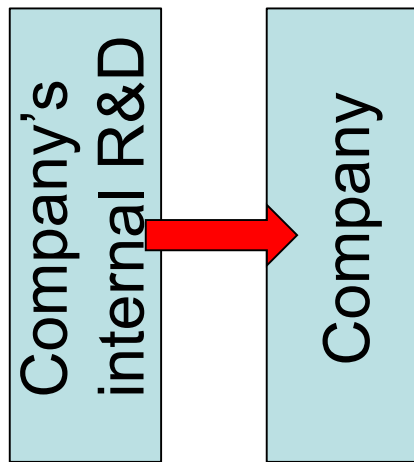
# Open Innovation



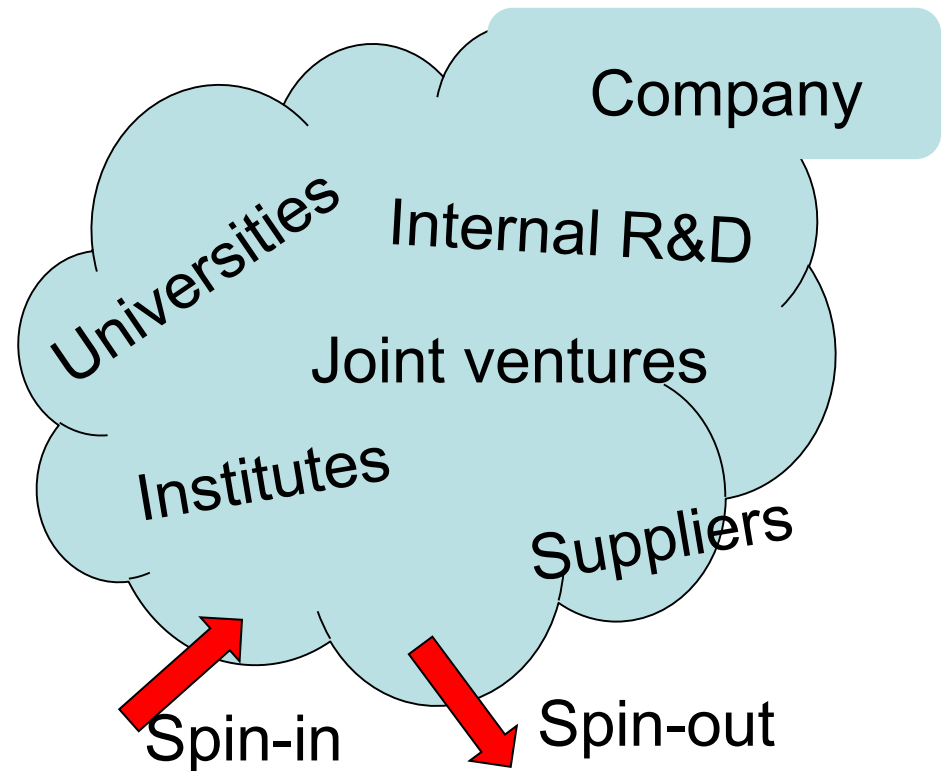
“Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology”.



## Closed innovation



## Open innovation



# Centres of Open Chemical Innovation

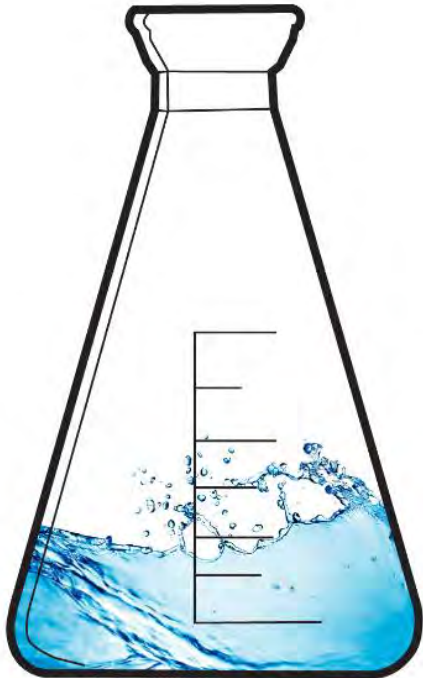


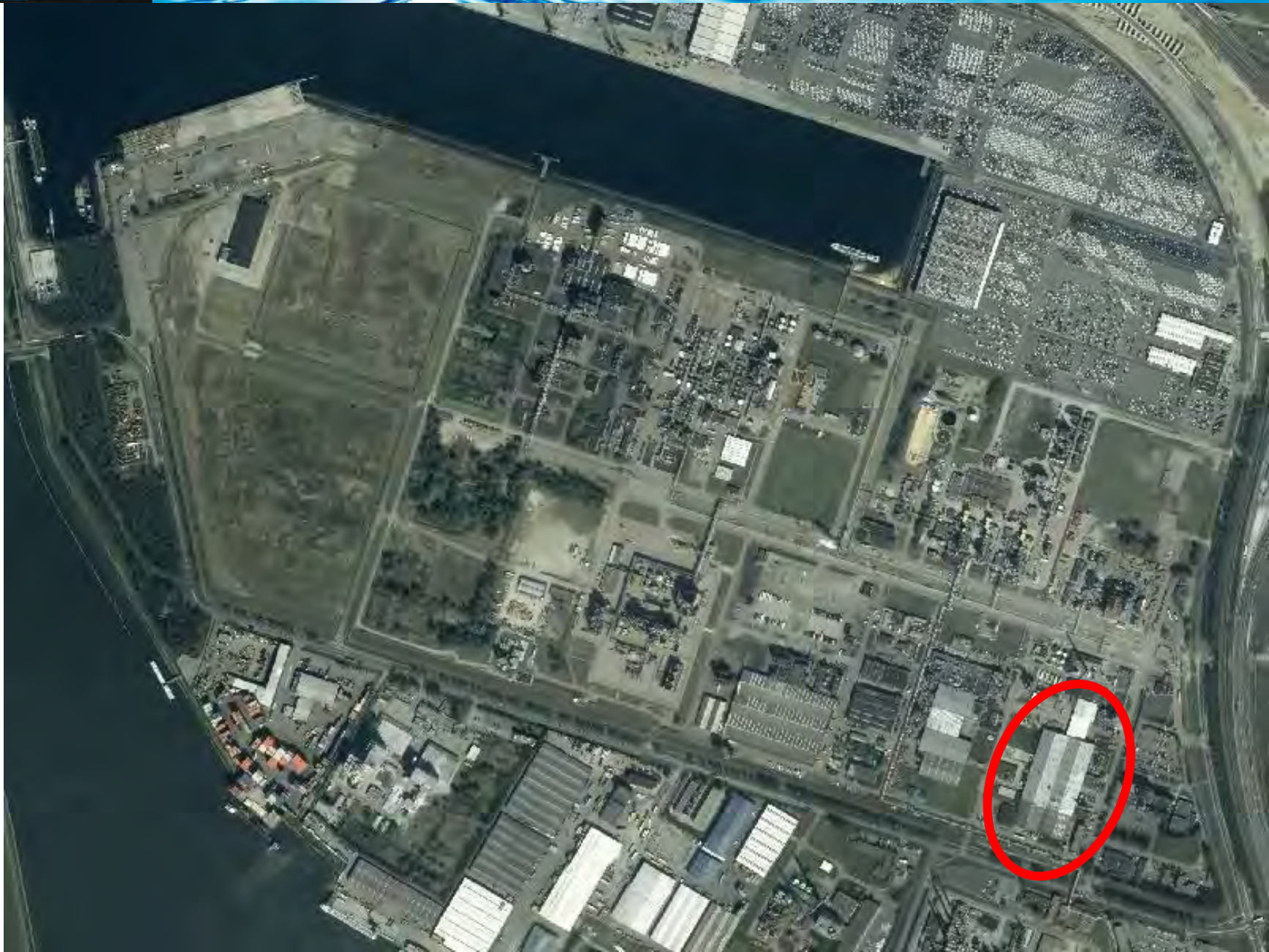




# Plant One

Facility for testing and demonstration of sustainability innovations in process technology









# Overview site 5210, Port of Rotterdam





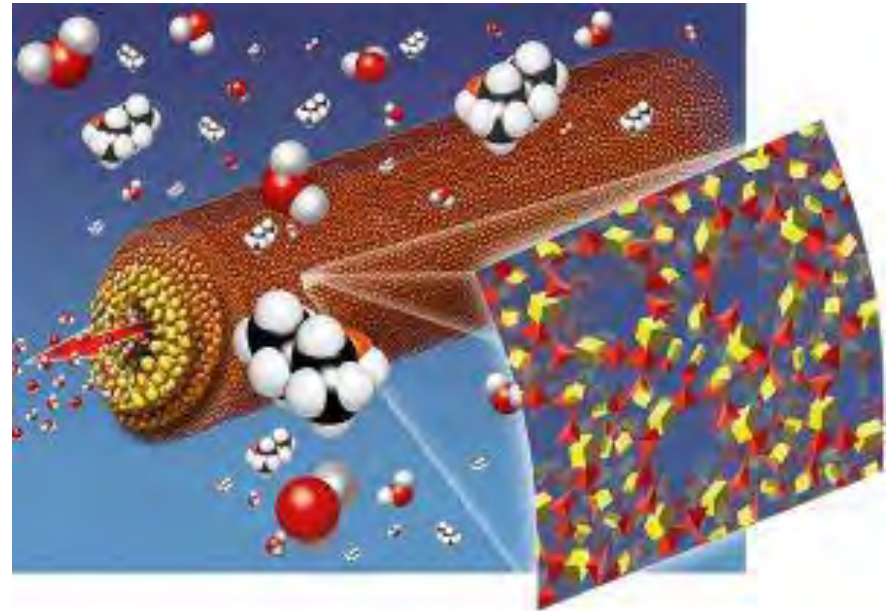


## One stop shop

- Large facility in the port of Rotterdam of 10.000 m<sup>2</sup>
- Test- and demonstration facilities: plots of 500 - 2400 m<sup>2</sup>
- Laboratory facilities
- Utilities for electricity, steam, city water, industrial water, nitrogen, compressed air.
- Umbrella environmental permit
- Office and meeting rooms
- Process operators
- Support services

## ECN Hybsi

- Testing of a new membrane
- Selective pervaporation



# NR Koeling Ventoclean system

- Installation to avoid emissions of volatile organic vapours
- Condensing of gasses in ships back to fluids
- Inertization of the ship







## **TKI process technology**

- Pilot installation for the testing of new katalyst
- Less energy consumption in the chain
- Producing less waste

# Partial drying of municipal waste water sludge

- Andritz Gouda
- Dewatering from 20% dry solids content to 40%
- Energy savings in transport and in burning of sludge.





**Thank you**

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