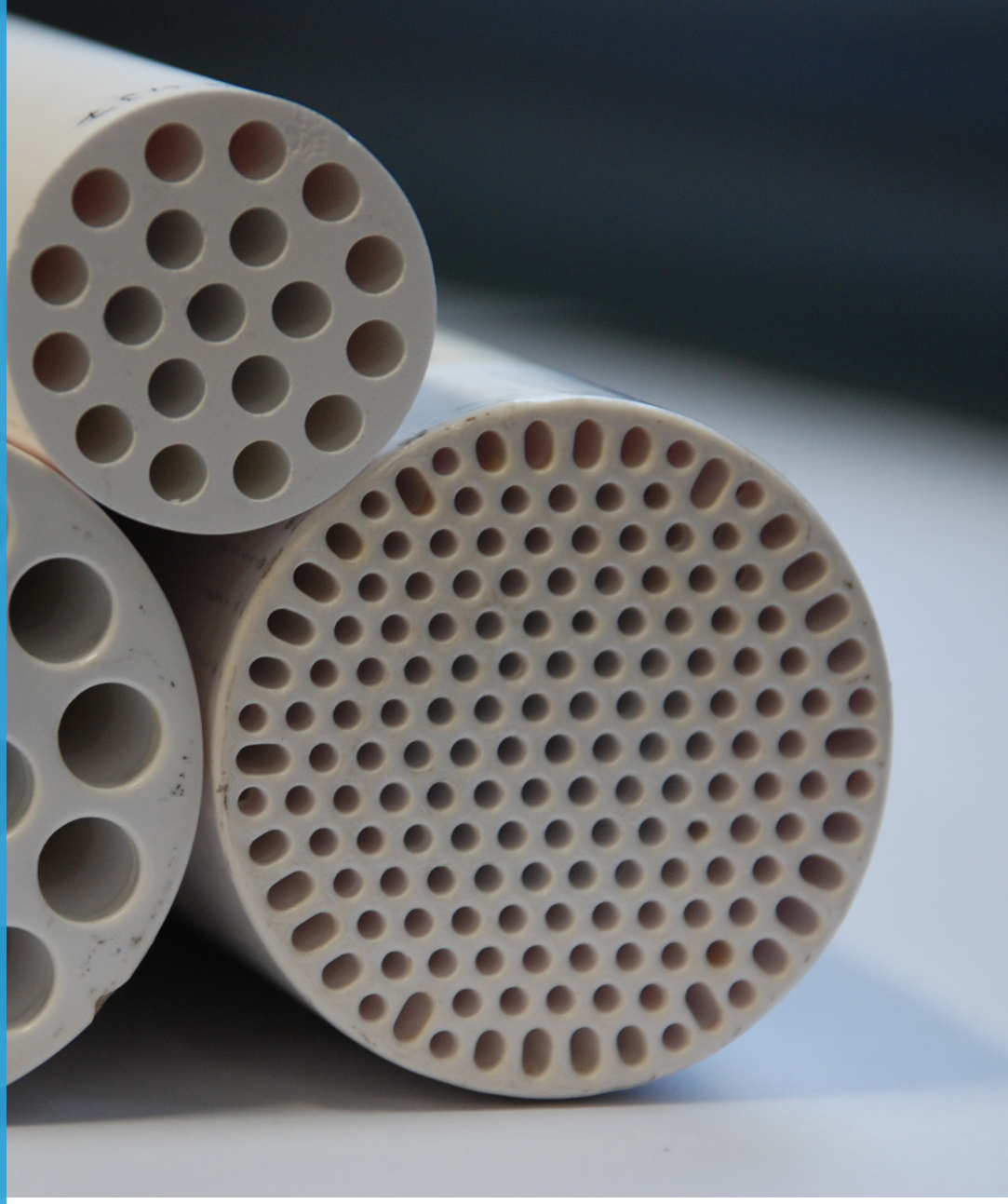

CHEMISTRY

MEMBRANE TECHNOLOGY COURSE

PRINCIPLES & PRACTICES

10-11 MAY 2017

VITO, MOL

Membranes play an essential part in optimizing industrial processes. New membrane development and applications contribute to a more sustainable production environment, using less and alternative resources, requiring less energy and producing 'cleaner' waste streams. As an expert in membrane technology, VITO wants to share its expertise in the field, and give theoretical as well as practical insights in a 2-day intensive training course.

WHY PARTICIPATE?

- Intensive 2-day course brought by experts in the field of membrane research & development
- Get an overall insight in the basics of membrane technology, downstream processing using membranes, electroseparation, advanced product recovery
- Learn how industrial (bio)processes benefit from the integration of advanced membrane technology
- Visit the VITO lab, demo and pilot installations
- Network with other professionals and graduates in the field

WHO SHOULD ATTEND?

Industrial professionals with a technical or scientific background or graduates in science or engineering looking for more insights in theory and advanced applications membrane technology brings to optimizing processes.

We hope to welcome you at this 9th edition of the course, exceptionally organised in collaboration with the H2020 project ButaNEXT.

Programme

Day 1: Wednesday May 10th 2017

09.00 Registration and coffee

MODULE 1: Membrane technology: principles and process operation

09.30 Basic principles of membrane technology
- Overview membrane processes
- Materials
- Basic principles and terminology
- Filtration parameters

10.00 Process operation and techno-economics
- From module configuration to process design
- Membrane fouling, scaling and cleaning
- Practical aspects and points of attention in process operation

11.00 Break

11.15 Case studies @ VITO
- From lab-scale feasibility studies to pilot-scale tests and industrial implementation
- Techno-economic calculations
- Calculation exercises

12.30 Lunch

MODULE 2: Pressure driven separations: principles and applications

13.30 Pressure driven membrane processes
- Technologies: micro-, ultra-, nano-filtration, reverse osmosis
- Applications: process and drinking water production, wastewater treatment and reuse, process applications, ...

14.15 Combination of pressure driven membrane filtration with bioprocesses
- Technologies: (reverse) membrane bioreactors, enzyme membrane reactors
- Applications: biomass retention, biomass harvesting, product fractionation, ...

15.00 Break

MODULE 3: Electroseparations: principles and applications

15.15 Electrodialysis

16.15 Capacitive deionization

17.00 Closure

Day 2: Thursday May 11th 2017

09.00 Arrival and coffee

MODULE 4: Downstream processing: membrane development and applications

09.15 Solvent filtration
- Technologies: organic solvent nanofiltration, pervaporation
- Applications: in-process recovery of solvents or products, product purification, ..

10.15 Thermal membrane processes
- Technologies: membrane distillation
- Applications: desalination, concentration, energy, ..

10.45 Break

11.00 Visit of labs and pilot hall

12.30 Lunch

13.00 Registration additional participants for Module 5

MODULE 5: Advanced product recovery (in collaboration with ButaNEXT project)

13.30 Process intensification in biocatalytic processes
- Background and rationale
- Approaches and concepts

14.00 Case study: *in situ* product recovery in butanol fermentation
- Configurations and set-ups
- Lab-scale feasibility and optimization tests
- Pilot-scale tests
- Techno-economics

15.00 Break

15.15 Process intensification by hybrid separation processes
- How to determine feasible combinations?
- Systematic design and evaluation

16.00 Process intensification in chemistry and pharma
- Clever ways to integrate membranes in chemical, catalytic and enzymatic processes
- Benefits and techno-economics
- New developments

16.45 Discussion

17.00 Conclusions followed by drinks and networking

Registration

The number of places is limited.
You can register via https://apps01.vito.be/vitoevents/inschrijving/MembraneTechnologyCourse2017.aspx
You will receive a confirmation of your registration.

Price

575€ VAT incl.

What is included in the price?

2-day course, handouts, participant list, coffee breaks and lunches, networking drink on May 11.

Questions?

For all questions about the programme, please contact
Metin Bulut at VITO
metin.bulut@vito.be
Tel.: +32 14 33 56 51

Location

Lakehouse VITO/SCK
Boeretang 201
2400 MOL
Belgium

Roadmap: www.vito.be/contact
GPS: Gravenstraat-Boeretang

© 2017 VITO NV – All rights reserved
Although care has been taken to ensure the accuracy, completeness and reliability of the information provided, VITO assumes no responsibility therefore. The user of the information agrees that the information is subject to change without notice. VITO assumes no responsibility for the consequences of use of such information, nor for any infringement of third party intellectual property rights which may result from its use. In no event shall VITO be liable for any direct, indirect, special or incidental damage resulting from, arising out of or in connection with the use of the information.