

34th EMS Summer School 2017
Membranes in Biorefineries
June 26 – 30, 2017



Organised by:

Department of Chemical Engineering, Lund University, Sweden

PO Box 124, SE-221 00 LUND, Sweden

PROGRAMME

Monday 26 June, 2017

11-14 Registration and lunch in Lund

Session 1 Biobased products and biorefineries

14:00 **Welcome**

Frank Lipnizki and Ann-Sofi Jönsson (Lund University, Lund, Sweden)

Biobased platform chemicals

Stefan Lundmark (Perstorp AB, Perstorp, Sweden)

Macromolecules from biorefining – recovery and materials design

Ulrica Edlund (KTH Royal Institute of Technology, Stockholm, Sweden)

Overview on membrane processes for biorefineries

Bart Van der Bruggen (KU Leuven, Belgium)

16:30 Departure by bus to Bäckaskog Castle

Tuesday 27 June, 2017

Session 2 Biorefinery concepts based on wood, agriculture crops and algae

8:30 **Wood based biorefineries**
Merima Hasani (Chalmers, Gothenburg, Sweden)

Agriculture biomass biorefineries
Frank Lipnizki

Algae based biorefineries
Lidietta Giorna (University of Calabria, Rende, Italy)

Session 3 Downstream processing in biorefineries

14:00 **Sustainable processes for the recovery of value added products in wine and cork industries**
Maria Norberta Neves Correia de Pinho (Technical University of Lisbon, Lisbon, Portugal)

Downstream processing in biorefineries
Cristiana Boi (University of Bologna, Italy)

Pretreatment by filtration
Hans Theliander (Chalmers, Gothenburg, Sweden)

Pretreatment by centrifugation
Finn Rundström (Alfa Laval, Tumba, Sweden)

17:30 Poster session

Wednesday 28 June, 2017

Session 4 Membranes in the pulp and paper industry

8:30 **Membrane applications in the pulp and paper industry**
Mari Kallioinen (Lappeenranta University of Technology, Lappeenranta, Finland)

Membranes for applications in the biotech and pulp and paper industry
Karolina Pokus (PCI membranes – Filtration Group, UK)

Challenges when implementing membrane filtration in pulp mills
Ann-Sofi Jönsson

13:00 Excursion to Stora Enso Nymölla pulp and paper mill

Session 5 Water and wastewater treatment

16:30 **MBRs for biorefineries**
Nicolas Heinen (Alfa Laval, Nakskov, Denmark)

Water preparation and recovery in biorefineries
Jens Lipnizki (Lanxess, Leverkusen, Germany)

Electromembrane processes in biorefineries
Luboš Novák (Mega, Czech Republic)

Thursday 29 June, 2017

Session 6 Membranes and modules

- 8:30 **Polymeric membranes in biorefineries**
Haofei Guo (Alfa Laval, Nakskov, Denmark)
- Ceramic membranes in biotech and pulp and paper applications**
Peter Bolduan (Atech, Germany)
- Ceramic membranes in biorefineries**
Marcus Weyd (Fraunhofer Institute, Hermsdorf, Germany)
- Aquaporin membranes for water recovery from fermentation processes**
Jörg Vogel (Aquaporin A/S, Kongens Lyngby, Denmark)
- Implementation of membrane separation techniques in the production of butanol by fermentation process**
Wojciech Kujawski (Nicolaus Copernicus University, Torun, Poland)

Session 7 Fouling and cleaning

- 14:05 **Fouling and cleaning of membranes in biorefineries**
Chris Dotremont (Vito, Mol, Belgium)
- Costs for membrane cleaning – key aspects in membrane plant operation**
Frank Lipnizki

Session 8 Economy

- 15:30 **Nothing comes for free – membrane plant economy**
Frank Lipnizki
- How can membrane processing contribute towards a circular economy?**
João Crespo (Nova University of Lisbon, Lisbon, Portugal)
- 16:30 Poster session

Friday 30 June, 2017

- 9:00 Departure by bus to Alfa Laval

Session 9 The future of membranes in biorefineries

- 11:00 **The Alfa Laval approach to biorefineries**
Rikard Krook (Alfa Laval, Lund, Sweden)
- The future of membranes in biorefineries**
Frank Lipnizki
- Factory tour
- 13:30 Departure by bus to Lund Central Station