

4-Day Master Course on Pre-treatment, Membrane Fouling and Scaling

Lecturer Prof. Jan C. Schippers, PhD, MSc
16 – 19 September 2019, Rome, Italy



Jan Schippers, Professor of Water Supply Technology at IHE Institute for Water Education, UNESCO in Delft and consultant will give this interactive course. He has extensive professional experience in drinking and industrial water supply projects in Morocco, Qatar, United Emirates, Gabon, Cab Verde, Namibia, Uzbekistan, France, Chile and The Netherlands.

His specializations are: Consultancy, research, training and education in the field of integral drinking and industrial water treatment and desalination/membrane related technologies.

Gave courses on Membrane Technology, Fouling, scaling and pre-treatment in membrane technology, Aquatic Chemistry, Conventional filtration Techniques and Membrane Bio Reactors in Cyprus, Morocco, China, Jordan, Yemen, Bahrain, Iran, Oman, Saudi Arabia, Chile, Italy and The Netherlands.

PROGRAM

Monday 16 September 2019

- 08.30–9.00** **Registration and Workbook**
- 09.40–10.45 1. Introduction membrane technology
2. Principles micro- and ultrafiltration
- 10.45–11.00** **Coffee**
- 11.00–12.30 3. Overview MF/UF elements and system
- 12.30–13.30** **Lunch**
- 13.30–15.00 4. Fouling MF/UF fouling control and pre-treatment
5. Principles of reverse osmosis and nanofiltration
- 15.00–15.15** **Tea**
- 15.15 – 17.00 5. Principles of reverse osmosis and nanofiltration
6. Overview RO and NF membranes and elements

Tuesday 17 September 2019

- 09.00–11.00 7. Process design RO systems with spiral wound elements
- 11.00–11.15** **Coffee**
- 11.15–12.30 8. Normalizing data in RO/NF systems
- 12.30–13.30** **Lunch**
- 13.30–15.00 9. Fouling in RO/NF systems
10. Conventional pre-treatment techniques for RO/NF
- 15.00–15.15** **Tea**
- 15.15 – 17.00 10. Conventional pre-treatment techniques for RO/NF
11. Fouling due to particulate matter. SDI and MFI

Wednesday 18 September 2019

- 09.00–11.00 11. Fouling due to particulate matter. SDI and MFI
12. MFI-UF; prediction fouling rate
- 11.00–11.15 Coffee**
- 11.15–12.30 13. Fouling due to algae and transparent exo-polymers
14. Fouling due to coagulants
- 12.30–13.30 Lunch**
- 13.30–15.00 15. Removal of particulate matter in practice
16. Removal of iron and manganese
- 15.00–15.15 Tea**
- 15.15–17.00 16. Removal of iron and manganese
17. Biofouling: Principles, prediction and pre-treatment

Thursday 19 September 2019

- 09.00–11.00 17. Biofouling: Principles, prediction and pre-treatment
18. Organic fouling
- 11.00–11.15 Coffee**
- 11.15–12.30 19. Fouling and control in membrane bioreactors
20. Principles of scaling
- 12.30–13.30 Lunch**
- 13.30–15.00 21. Manual scaling calculations
22. Calcium carbonate; Langelier and Stiff & Davis Index
23. Scaling predictions with computer program
- 15.00–15.15 Tea
- 15.15–16.45 24. Scaling in seawater reverse osmosis
25. Scaling control, monitoring, and antiscalants
26. Cleaning RO/NF membranes
- 16.45–17.00 Closing and Certificates**

Pre-treatment, Membrane Fouling and Scaling

Lecturer Prof. Jan C. Schippers, PhD, MSc

16–19 September 2019, Rome, Italy

REGISTRATION FORM

Surname _____ Name _____

Affiliation _____

Address _____

Country _____ Telephone _____

Fax _____ Email _____

Registration fee:

- EDS members **€2,500**
 Non-members **€2,700**

The fee includes 5 nights accommodation, lunches, coffee, dinners and course workbook.

Payment can be made by:

Credit card

Visa

Mastercard

Bank Transfer to be sent to the address below and a copy emailed to us.

Card No. _____

Please take care of your own bank charges

Exp. date ___ Security code _____

Account name: European Desalination Society

Cardholder name _____

Account No. 11863.19

Banca Monte dei Paschi di Siena

Signature _____

67100 L'Aquila, Italy

ABI: 01030 *CAB:* 03600

Swift code: PASCITMMAQU

IBAN code: IT 92 I 01030 03600 000001186319

Please fill in the form and send as an attachment to:
balabanmiriam@gmail.com or fax to: +1 928 543 3066