

## Pre-conference workshop on Membrane distillation

Sunday 23 June – Pierre Baudis Conference Center

### Who Should Attend

This workshop is specially designed for young professionals and students, but also to anyone wanting to understand the most important features of membrane distillation, to have good basis to start a research activity or to orientate the development of the process.

### Why you should attend

To understand the basics of MD, and to have in one day a good overview of MD on its different aspects: basics of heat and mass transfer, interest of the different configurations, membrane manufacturing and characterization, module design, process operation, energy issues and coupling with renewable energy, scale-up and feed back of large plants.

### Chair and lecturer: Prof. Corinne CABASSUD


Dr Corinne Cabassud is professor of Chemical Engineering at INSA Toulouse, University of Toulouse, France. She is a fellow of IWA and Member of Management Committee of the IWA Specialist Group on Membrane Technology. 35 years of experience in membrane processes for water and wastewater treatment, desalination processes and routes, fouling understanding and development of *in situ* tools for investigating membrane processes, development of membrane systems assisted by solar energy for providing drinking water in remote places.. She started research on membrane distillation in the 90's for the application to the removal of VOCs, was involved in the European Project MEDINA on desalination and is exploring the questions of operation at high concentrations, process optimization and coupling with RO and with solar energy.

### Lecturers (confirmed)

#### Dr Efrem CURCIO



PhD in Chemical Engineering and Materials (2005) and Associate Professor (since 2014) at University of Calabria. Research Associate at the Institute on Membrane Technology-National Research Council of Italy (ITM-CNR). Co-author of > 100 papers on peer-reviewed international journals, >150 publications on congress proceedings prevalently international, 1 patent. Twenty years of experience in design and development of advanced membrane contactors including Membrane Distillation with applications in desalination and water treatment, Membrane Crystallization for the recovery of sea-salts and the purification of biomolecules, Integrated Membrane Systems for water-energy nexus.

	<p>Principal Investigator of related EU projects: FP7 ERANETMED-EXTRASEA “Extracting Water, Minerals and Energy from Seawater Desalination Brine”, FP7 ENERGY-REPOWER “Reverse Electrodialysis Alternative Power Production”, H2020 FET-AMECRYS “Revolutionising Downstream Processing of Monoclonal Antibodies by Continuous Template-Assisted Membrane Crystallization”, H2020 MSCA RISE-REMIND “Renewable Energies for Water Treatment and Reuse in Mining Industries”. Author of the books “Membrane Contactors: Fundamentals, Applications and Potentialities” (Elsevier, 2005) and “Membrane-Assisted Crystallization Technology” (World Scientific, 2015). European Membrane Society Award 2004 for the best published paper in Membrane Science and Engineering.</p>
<p><b>Dr Guillermo ZARAGOZA</b></p> 	<p>Dr Guillermo Zaragoza holds the position of Distinguished Researcher in CIEMAT (Centre for Energy, Environment and Technology Research), working at the Solar Desalination unit of Plataforma Solar de Almería, Spain. He has previously held academic positions at the Spanish Research Council, the University of Oxford and the greenhouse research facility of Cajamar Foundation. He has participated in several European R&amp;D projects related to solar energy and desalination, teaches in a master course on Solar Energy at the University of Almería and in international courses on Solar Desalination organized by the European Desalination Society, of which he is a member of the board of directors. He is coordinating the Renewable Energy Desalination Action Group of the European Innovation Partnership on Water of the European Commission, as well as the Working Group on the same subject in the European Water Platform WssTP. His main research work is focused on the application of solar energy to desalination at pilot scale, in particular working with commercial modules of membrane distillation for decentralized applications.</p>

## Schedule and program

8h15-8h30 Welcome – coffee – Introduction:

8h30 - 9h30 - Basics of heat and mass transfer for MD and MD configurations:

9h30 – 10h15 - Membranes for MD

10h15-10h30 Coffee break

10h30-11h00 - Membrane characterization, permeability and wettability

11h00 – 12h00 - Fouling/scaling and its prevention

Lunch : 12h00-13h30

13h00-14h00 - Module design, commercial Modules, comparison between different configurations

14h00- 15h00 - Energy in MD and coupling with solar energy

15h00-15h15 Coffee break

15h15- 16h15 Scale-up and MD plants: applications, state of development, economics and feed back of plants

16h15-17h00 panel discussion