EFCE Spotlight Talks

Section on Membrane Engineering

18 March 2024

9:30-11:30 CET

EFCE

CHALLENGES AND OPPORTUNITIES IN DESALINATION

The fresh water demand is continuous increasing in last years, due to the growth of population and of industrial productions, together with climate change which is exacerbating drought. The depletion of fresh water sources and the pollution of water streams further complicate the scenario. In this context, desalination is often applied to obtain fresh water from the sea, with reverse osmosis becoming the dominant technology. Typical fresh water recovery factors are up to 50% and, together with fresh water, a salty concentrated stream, called brine, is also produced. In most cases the brine is re-injected into the sea, with consequent impacts on the marine environment. In this webinar, possible strategies to exploit the brine are presented, like its use for CO2 capture or for recovery salts and metal compounds while increasing the overall fresh water recovery factor. The use of solar energy as renewable and "free" thermal energy source for the process is also discussed.

PROGRAM

09:30 **Welcome and introduction**
Enrico Drioli and Alessandra Criscuoli – Section on Membrane Engineering, Istituto per la Tecnologia delle Membrane (CNR-ITM) – Italy
Boelo Schuur, EFCE Scientific Vice-President

09:40 **Environmental impact of membrane distillation-crystallization for CO2 capture using desalination brines**
Patricia Louis Alconero, UCLouvain - Belgium

10:10 **Membrane crystallization for the recovery of metals compounds from seawater brines**
Francesca Macedonio, Istituto per la Tecnologia delle Membrane (CNR-ITM) – Italy

10:40 **Application of solar energy to desalination**
Guillermo Zaragoza, CIEMAT - Plataforma Solar de Almería – Spain

11:10 **Conclusion**
Enrico Drioli and Alessandra Criscuoli – Section on Membrane Engineering, Istituto per la Tecnologia delle Membrane (CNR-ITM) – Italy

REGISTRATION

free of charge but mandatory

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