

LECTURERS (SHORT BIO)

MAXIME PONTIÉ
GEPEA CNRS, FRANCE
(MSc Course manager)



Maxime is professor in chemical engineering and analytical chemistry at the University of Angers (www.gepea.fr). He received a Postdoc degree under professor R. BOWEN (Swansea university, Wales) and a PhD degree under professor M. RUMEAU, (Montpellier II university, France). He was the manager of 2 MEDRC programs (n°04-AS-005 (2004-2007) et n°06As003 (2006-2009)) and was IGIP's expert for the first world plant dedicated to the defluoridation of brackish water by NF (Thiadiaye, Senegal). His current research interests are new processes dedicated to seawater pre-treatments in presence of HAB and reuse of old RO elements. He is the academic French specialist of water desalination using membranes. He joined the EDS (European Desalination Society) board in 2013. maxime.pontie@univ-nantes.fr

JACK LEGRAND
GEPEA, CNRS, FRANCE



Jack is Professor in Chemical Engineering at the University of Nantes since 1988. He is specialist in transport phenomena and mixing in processes and (photo) bioreactors. He has ca 210 publications in international journals and is co-author of 16 patents. He is Director of the Joined Research Unit (UMR), constituted by about 200 people, GEPEA (Process Engineering for Energy, Environment and Food) between CNRS, University of Nantes, ONIRIS and School of Mines of Nantes. His research fields is the study of the fundamental problems dealing with transfer phenomena in mass/heat exchangers (reactors, mixers). Studies are related to mixing and bioreactors, particularly the emulsion processing, microencapsulation processes, the centrifugal partition chromatography and the conception and modelling of photobioreactors applied to the valorisation (biomass, energy, metabolites of interest) of microalgae.

Bechir CHAOUACHI
ENI Gabes, Tunisia



Dr. Bechir CHAOUACHI is Professor and Director of the environmental, catalysis and process analysis research unit at the National School of Engineering of Gabes - University of Gabes. His Research areas are: the heat pump, the absorption cycles, solar energy applied to desalination, heating and refrigeration, thermodynamics properties of mixing, energy recovery and environment. He has published more than 140 papers in Journals and in international conferences and 03 Patent attorneys. He participated in several national and international research projects on cold production and desalination of water using solar energy and he's a Member of the Tunisian chemical society (1997-2016) and member of the scientific committee of several conferences.

JEROME LEPARC
VEOLIA WATER, FRANCE



Jerome holds a Master of Science in Chemical Engineering from « Ecole Nationale Supérieure des Industries Chimiques, Nancy », France. He has over 15 years of experience in water treatment technology, and is currently Senior Project Manager in charge of the Desalination R&D projects for Veolia. He has been involved in numerous process design project and pilot-scale studies worldwide for process evaluation and optimization on drinking water plants. He has authored/co-authored over 30 publications/proceedings on drinking water and desalination technologies.

MICHEL FARCY
ACLARA, FRANCE



Michel holds a Master Degree from « Ecole des Mines de Paris », France. He started his career as a research scientist in « Jyoty Solar Institute », Gujarat, India. He then worked as production superintendent, process engineer and engineering manager in the chemical groups Rhône- Poulenc, DuPont, Monsanto and Ajinomoto. He joined Pall Corporation, he has held various marketing and sales positions and deputy chairman - Sales for North and West Africa. He is actually chairman of ACLARA.

Dominique GRIZEAU
GEPEA, CNRS, FRANCE



Dominique Grizeau is assistant professor in biochemical engineering at the university of Nantes, Polytech Nantes. He is specialist in cyanobacteria and microalgae culture and in analytical methods for process control. Up to 2010, at the Conservatoire National des Arts et Métiers (CNAM-Intechmer), he was responsible for the team "Ecophysiology and Biotechnology of Photosynthetic Microorganisms", with abundant industrial contracts and in-service training activity in relation to a microalgal biotechnological incubator, used to help start-up companies such as Alpha- Biotech and ActiAlg with patents transfer and for pilot productions.

Julien OGIER
LANXESS Co.



Julien holds a Master of Science in Chemistry from «Ecole Nationale Supérieure de Chimie de Rennes», France. He worked some years as scientific researcher on drinking water treatment at KWR, the Netherlands. In 2011 he joined the R&D and application team for reverse osmosis at Lanxess, Germany. He is currently application ENGINEER PROVIDING

CLIENTS WITH TECHNICAL SUPPORT AND Taking care of the application laboratory in Bitterfeld, Germany.

Philipp HESS
IFREMER, FRANCE



He joined Ifremer in 2008 and has > 15 years of experience with marine biotoxins, in particular those derived from micro-algae. His research interests cover the detection, chemistry, diversity and impact of phycotoxins on the marine environment and human health. He also teaches a course on phycotoxins at Nantes University and is the adjunct director of the regional Research Federation on ocean & coastal activities (IUML). He also has assisted EFSA (European Food Safety Authority) as expert for 10 risk evaluations on marine biotoxins (2006 – 2010), and he represents France on the Intergovernmental Panel on Harmful Algal Blooms (IOC-UNESCO). Since 2011, he contributes to communicating science to policy stakeholders through the European Science Foundation Marine Board WG "Oceans and Human Health" and since 2013 he directs the French research network on toxic algae and their toxins (PHYCOTOX). A recent research interest focuses on the need for evaluating the risk of algal toxins in drinking water, and Philipp has participated in the organization of the international conference on HABs and Desalination in Muscat, Oman, 2014. Bechir CHAOUACHI, ENI Gabes, Tunisia

Jérémy PRUVOST
GEPEA



Professor in GEPEA, St Nazaire, Manager of ALGOSOLYS (Algosolis.com)

Jean-Baptiste KHEROAS,
SLCE Watermakers



French engineer from ICAM Vannes (2012). Young French specialist of technical assistance in chemical engineering in SLCE Watermakers society since 3 years, user of membrane desalination software for sizing RO units on boats.

Maxime VALAY
Originalys Electrochem sas



Member of ORIGINALYS team since 1 year. Technico-commercial specialized in Biofouling measurements using electrochemistry.

ERIC LEVERT



DAFC, Université de Nantes Head of the project support. Dpt Executive education. MSc Courses. eric.levert@univ-nantes.fr



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St. Nazaire, Polytech Nantes, France



Water desalination using membranes and harmful algal blooms (HAB)

2nd SESSION

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UNIVERSITÉ DE NANTES

Organized by **GEPEA**, with the cooperation of Degremont, **Veolia**, **Pall** and **CNRS** and the cooperation with the European Desalination Society (**EDS**)



INTRODUCTION

The seminar topics include theoretical and practical informations about performance and operating conditions of reverse osmosis and nanofiltration technologies for brackish and seawater desalting. A section of the seminar is dedicated to the modern microfiltration and ultrafiltration technology applied for pretreatment of seawater for RO systems for big plants and small ones.

The program includes an introduction to membrane technology, description of commercial membrane elements, water composition and quality variations (seawater, brackish water) i.e. harmful algal bloom (HAB), PBR* Design, illustration of the membrane system design process and overview of systems operation taken everywhere in the world for desalination units (terrestrial and on ships).

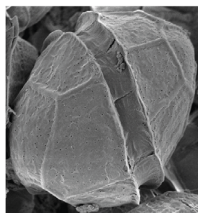
The seminar is structured in the form of frontal presentation combined with hands-on exercises of calculations of operating parameters with visiting tour of microalgae culture platform and experiments at different scales on bench scale laboratory pilots. A section is dedicated to computer simulation of RO/NF operations illustrated by real plants in the world (Ashkelon, Thiadiaye). A section is dedicated to membrane autopsy as a decision aid for a better management of RO process and another one on how to manage old RO membrane.

* PBR : *photobioreactor*

OBJECTIVES

It is expected that knowledge gained during the seminar will enable participants to conduct critical evaluation of feasibility and design parameters of water development projects based on membrane technology and estimation of capital and operating cost. The seminar is directed toward professionals and academics who are familiar with membrane technology.

A special section will be dedicated to exchange with our specialists on the problematics encountered by the participants in their job with membranes processes dedicated to water desalination.



Alexandrium minutum (toxic) HAB on the Atlantic Coast
GEPEA-UMR CNRS 6144.

Topics

- General Overview of membrane processes : from theory to practice
- Seawater composition and chemical/physical reconstitution
- Microalgae and seawater
- Microalgae culture for harmful algal blooms (HAB) simulation
- Training on a software for the design of reverse osmosis/nanofiltration systems
- Desalination - Process selection and design
- Environmental and economical performances criteria related to desalination projects (OPEX/CAPEX)
- Membrane Systems – The technology of choice for safe drinking water

Case Studies

- Ashkelon and Sorek (Israel)
- Umm Lujj (Saudi Arabia)
- Thiadiaye (Senegal) First water plant in the world for brackish water defluoridation

Practical

- Experimentation with membranes MF/UF, NF and RO
- Membrane sustainability: autopsy approach and old membrane reuse

Plant Visit

- St Nazaire : microalgae platform (ALGOSOLIS) from lab scale to biggest plants

REGISTRATIONS - prices

- Early Birds (until 23th april) : 2400 Euros
- EDS members : 2500 Euros
- CFM
- Non EDS + CFM members 2700 Euros

The registration fees include :
5 nights accomodations, lunch, coffee,
dinners, course workbook, USB Key.

SCIENTIFIC MANAGER : Maxime PONTIÉ
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REGISTRATIONS : Eric LEVERT
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PRACTICAL INFORMATION



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