

EDITORIAL – Feedback on the 2nd annual e-conference - January 29th- 30th 2019, Toulouse, France.

The selected overall topic for this meeting was "Limitations of membrane process: facts and solutions". The first-year students, in groups of 3, made the oral presentations of their individual projects that dealt with a wide range of subjects: new functional porous materials; gas separation: material or process issue; non aqueous media; membrane ageing; membrane fouling; fouling phenomena in ceramic membranes; nanofiltration versus reverse osmosis; micropollutant removal; solar-powered nanofiltration units; positive energy treatment of domestic wastewater.

The invited speaker, Professor Robert Field (Department of Engineering Science, University of Oxford, UK) gave a lecture entitled "Constant flux fouling and the importance of the threshold flux" which is now available online using the following link:

<https://video.umontpellier.fr/video/2448-em3e-robert-w-field-constant-flux-fouling-and-the-importance-of-the-threshold-flux/>

This scientific day, rich in ideas and discussions, was completed by presentations of the curricula during the second and third semesters, given by representatives from the different partner institutions.

The day after, the consortium meeting was mainly dedicated to the future of the EM3E-4SW program beyond EU financing. At this stage, the 6 involved universities suggest the creation, in each institution, of second-year master tracks taught in English.



All tracks would be devoted to membrane engineering but differentiated by the targeted applications. Thanks to the conventional Erasmus mobility mechanisms (registration in the home university and mobility for one semester in the host university), the students involved in such tracks could graduate with a double degree from their home university and from the host university as well as with a European label jointly awarded by the partner universities and the European Membrane Society (as already done by EMS in the past). Before going any further in setting up a contractual framework for this new partnership, our consortium would like to survey the undergraduate and graduate students from the six concerned universities in order to evaluate their potential interest in such an offer.

SPECIAL FOCUS – The African Membrane Society – AMSIC

The African Membrane Society (AMSIC) was created as a result of discussions held nearly 10 years ago in Bamako, during MSAS 2010, the Mali Symposium on Applied Sciences in August 2010. Experts on water treatment and membrane technologies who attended the meeting expressed interest in forming a pan-African structure that would help train a critical mass of specialists in filtration and separation sciences all across Africa. AMSIC was officially born during the summer 2014 (MSAS 2014 symposium) in Bamako and located its headquarters at the *Ecole Nationale d'Ingénieurs A.B.T. du Mali*.

Back then sixty-five members were enrolled, and five years later, in 2019, the membership has almost doubled. The strategic objectives of AMSIC network are guided by three pillars:

- Promote the highest quality in education and research focused on materials science and engineering;
- Facilitate work/educational opportunities for women and the youth through engagement in international projects, scientific mobility, and active recruiting;
- Strengthen academia-industry relationship and prioritize sustainable development initiatives.

The AMSIC website <http://www.sam-ptf.com/> showcases profiles of the Board of Directors and two international congress venues held in Tunisia (2016) and South Africa (2018) – events that demonstrate our commitment to promote membrane education on the continent. Publications from AMSIC members (articles, book chapters and books) and our bi-annual newsletter are also available online.

In terms of geographic diversity, 80% of AMSIC members are students and professionals based in Africa (twenty countries), while the remaining members are distributed between Europe, North America and Asia. On a global level, AMSIC membership covers nearly thirty countries around the world. Hence it is essential to stress that AMSIC is an inclusive society that accepts applications from Africa and elsewhere

The AMSIC platform has been strengthening research collaborations and scientific mobility among members in Africa, with favorite topics focused on: Novel UF, NF membranes fabricated with local resources (clays, zeolites, etc.); MF/UF filters coupled with conventional systems for processing industrial effluents; Standard NF membranes for mining water treatment or brackish water purification (clean water access); Desalination of seawater or brackish water modules coupled with renewable energy; Synthesis of novel RO thin film composites for water purification. Furthermore, thanks to the networking opportunities offered

by AMSIC, international research partnerships are more prevalent on the continent and between groups in Africa and those based elsewhere. AMSIC is thankful for the support and partnership resulting from active scientific exchange with Europe, North America and Asia. In this context AMSIC became a member of the World Association of Membrane Societies in 2018, formed one year earlier (see <http://www.wa-ms.org/>).

Students enrolled in EM3E-4SW are strongly encouraged to reach out to AMSIC staff. For additional information about the African Membrane Society or for submitting a membership application, visit the AMSIC website at www.samptf.com/contact.html.



AMSIC-2 conference delegates, Johannesburg (July 29 – August 1, 2018)

Upcoming activities

- July 17-19, 2019: Contribution to *New frontiers in separation processes and membrane development*, organized by French and South African institutions.
- July 2019: Contribution to WA-MS Membrane Education Group.
- September 23-25, 2019: Co-organizer of Francofilt 2019 on *Separation techniques & membrane processes: matching technical progress with local priorities*.
- November 3-6, 2020: AMSIC-3 will be held in Dakar, Senegal.

Dr. Abdoulaye DOUCOURE, AMSIC president, ablodoucoure@hotmail.com

Serena CASANOVA, Italy – EM3E Edition 4 (2014-2016)

BSc from the University of Genoa (Italy) and currently PhD student at the University of Bath (United Kingdom).



Dear membranologists, my name is Serena, I am currently a third year PhD student with the “you need to write your thesis” whispers in my head, but I once was an EM3E student too, enjoying the wander around Europe in some of its most prestigious membranes research centers. I started my Master equipped with a theory-oriented Chemical Engineering background, and in Montpellier I had a big (overdue) dive into material science. Some of my greatest hardships at the time, however, had to do with language. As a foreigner, the Anglo-French mix was difficult for me to grasp, and I was glad when at the end of the semester I found myself gifted by osmosis with some French basics! My course mates and I then happily landed in Prague with brains full of information on the state-of-the-art techniques scientists use to characterize each type of membrane. We would walk the streets of the beautiful Czech capital in the cold mornings to go and passionately study about membrane processes and applications. I remember occasionally working in labs with somewhat stressed PhD students, never imagining I would become one of them one day. It was my next step that made me change my mind! My first choice for my last Master year was the University of Twente in the Netherlands. Here, I had the opportunity of studying in an institution that truly deserves the title “excellent”. I absolutely loved my time in Enschede, especially because of my experimental-based research project, but also thanks to the delightful artistic scene. In the lab, I could use advanced techniques to work on in-situ ellipsometry characterization of organic solvent nanofiltration membranes and had brilliant supervision on the project. The work has now been written up as a journal paper. I graduated in summer 2016, having to say goodbye to dear friends, but with a great wish to give the researcher life a go.

Since October 2016, I work within the SynFanFub UK project on nanotubes membranes for water treatment, under the supervision of Prof. Davide Mattia. In our research group, we study the use of nano-engineered materials with exceptional behaviors for membranes applications. EM3E greatly helped me to build up the knowledge necessary to successfully conduct my research, as well as an important awareness about the international network of people working in my field. I recently had the chance to meet some of the EM3E folk and also from the the Erasmus Mundus Doctorate in Membrane Engineering (EUDIME) at Euromembrane 2018, Jie Ma amongst others, whose testimony is also in this issue. My experience with EM3E has shaped my career path in a positive and exciting way, and I am confident it will continue to do so in the future.

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*Present and former EM3E and EUDIME colleagues
at Euromembranes 2018, Valencia, Spain.*

Jie Ma, China – EM3E Edition 4 (2014-2016)

Currently a PhD candidate of Marie Skłodowska-Curie Actions - SMARTMEM project, European Industrial Doctorates (EID) in collaboration between Procter & Gamble Brussels Innovation Center (Belgium) and Universitat Rovira i Virgili (Spain).



My passion for protecting the environment brought me to EM3E. When I was looking for master studies in chemical engineering, EM3E attracted me as it offers advanced education on membrane science and engineering, which is a key technology in dealing with environmental considerations. On top of that, its multidisciplinary and multicultural nature is fascinating: what a cool program that provides you the opportunity to study and experience in at least 3 different universities of different countries on different topics but all related to membranes!

I feel embarrassed to mention that at first it was a big challenge for me to talk in English: even though I had good marks in English exams, I was shy when I started to speak English in real daily life. My classmates and professors were so nice and patient that made me feel comfortable and confident. I will never forget that Professor Gros in Toulouse encouraged me to go to the stage and explain how to

solve stoichiometry questions to my classmates. I am proud that now I speak not only fluent English, but also basic Spanish (A2), a little French and Czech language, and I am open to talk with people from everywhere thanks to the multi-cultural experience.

The theoretical study on material science and membrane technology I received from EM3E courses, as well as my research experience in Institut Européen des Membranes (IEM) under the supervision of Dr. Mona Semsarilar and Dr. Damien Quemener led me to a PhD position in the Marie Curie SMARTMEM program, which is a multidisciplinary project leveraging the emerging technology platforms around so-called smart membranes and evolving this platform to commercial use in consumer good products. I spend half of my PhD time in the industrial sector - Procter & Gamble Brussels Innovation Center (Belgium), and half in the academic sector - Universitat Rovira i Virgili (Spain). Film preparation and characterization methods I learned from master are very useful in my PhD study.

Looking back, EM3E trained me to a strong specialty on membrane engineering and a strong will to never give up. During the 2-year intensive experience I gained an open mind and lots of friends from all over the world that inspired me in many ways. I enhanced my ability to take on challenges, adapt to new places and see things in different perspectives. The EM3E journey is a treasure of my life and I will always be grateful for having been enrolled in this program.

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Call for application for admission to the master edition 2020-2022: Due to the end of the EU financing and to the current uncertainty about the exact nature of the new offer, the agenda and the modalities of application are not yet defined. They will be published on the website as soon as possible.

Sponsoring opportunities: EM3E-4SW offers you the possibility to sponsor the programme. We welcome contact from your organisation and are happy to discuss any idea which could facilitate the recruitment of EM3E-4SW students. Moreover, the second year of the master is available as vocational and education training (VET).

Please contact us by e-mail: em3e-4sw-project@umontpellier.fr **More information on:** <http://em3e-4sw.eu>