

QUARTERLY NEWSLETTER
OCTOBER 2017 ISSUE

BUILDING A MEMBRANE COMMUNITY IN AUSTRALASIA

MEMBRANE EVENTS, NEWS AND RESEARCH HIGHLIGHTS



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About MSA

The Society aims to represent and promote the activities in membrane science and technology both in the research and industrial sectors.

Our Vision

- To be the nexus of membrane science and technology activity in the Australasia region;
- To promote collaborative engagements across the community to disseminate membrane technology to end users; and
- To capture current research and industry involvement and highlight future trends.

Our Mission

The MSA is to represent Membrane Science and Technology in Australasia realising that this will be aligned with societal needs.

This will be achieved by:

- providing an open forum for transferring and sharing technologies as well as capabilities within the members, industries and high education organizations;
- supporting multidisciplinary networking events;
- providing leadership and mentorship in membrane science for the Australasian membrane community;
- promoting opportunities for young members; and
- and enabling wider understanding of the membrane technologies for public interest.



A Message From the New President

PROFESSOR AMANDA V ELLIS, FRACI

ARC FUTURE FELLOW & PROFESSOR IN CHEMICAL
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Dear MSA members

On the afternoon of 12th September during MSA Board meeting I was officially elected as the new MSA president by the Board Members and I thank-you for the privilege. I would like to offer my sincere thanks for all the hard work Dr Aaron Thornton has done over the last years in driving the MSA to become a highly successful (and financial) and recognised society not only in Australia but throughout the world. He has done a fantastic job and I can only hope I will endeavour to keep up the good work. We will be holding a strategic retreat next month in November to start the Society on a continuous forward track. I look forward to working more closely with you all.

Please join me in thanking Aaron, who will still (thankfully) remain as a Board member and help out with the transition until his term is finalised.

Kind regards
Amanda



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PUSH:

Globally united society from NAMS, EMS, AMS and other regional / national societies.

PULL:

Cohesive society with common research interests and strategic goals.

As the former MSA President representing the interests of Australasia, I attended the first World Association of Membrane Societies (WA-MS) meeting, which was held on the 2nd August this year during the 11th International Conference on Membranes and Membrane Processes (ICOM) in San Francisco. The core objective of the WA-MS is to globalize the membrane community and its activities. This will include: 1. Providing a platform to enhance the interactions between the founding societies NAMS, EMS and AMS, and 2. inviting other regional or national societies that may operate outside of NAMS, EMS and AMS.

Each of the founding societies will have six delegates in the steering committee. As MSA is a partner society within AMS, I was nominated as a delegate for AMS. The founding societies and newly joining societies will be active in topical working groups. There are currently 3 working groups for the website, event calendar and outreach. I was nominated for the website working group. Other ideas for working groups include: education on membranes, membrane terminology, membranes in developing countries, industrial application of membranes and membranes to meet societal needs.

The Steering Committee will meet face to face every year, hosted by one of the founding societies in a 9-years cycle: at each ICOM conference hosted by the society organizing that meeting; in the year after ICOM, hosted by the society organizing the coming ICOM conference; and by the third society in the second year after ICOM. In practice: at ICOM by NAMS in 2017, by EMS in 2018, by AMS in 2019; in 2020 (ICOM) by EMS, in 2021 by AMS, in 2022 by NAMS, in 2023 (ICOM) by AMS, in 2024 by NAMS, and in 2025 by EMS. This cycle is then repeated. The Steering Committee meeting in between ICOM conferences can, but does not have to, be organized at a conference by the hosting society (Euromembrane, Permea, AMS - upon the discretion of the hosting society). As the delegate for AMS, I will ensure that Australasia has a voice at this meeting.

ARC Research Hub Success

Transforming Australian Industries: ARC Research Hub for Energy-efficient Separation (2017-2022)

Australian membrane researchers recently were successful with the application for Australian Research Council Industry Transformation Research Hub for Energy-efficient Separation (EESep), which involves 10 Australian universities/institutes and 12 industry partners. The EESep is the largest Hub among the three research hubs awarded in this year under the ARC Linkage Projects scheme. \$4 million was funded for five years to match industry contributions on the innovation and application of high performance separation materials, equipment and processes.

The EESep hub will create an Australian multidisciplinary platform to develop advanced separation materials including membranes, absorbents, catalysts and resins for advanced manufacturing which will enhance Australia's capability as a world-leading separation technology provider.

The Hub aims to develop advanced separation materials, innovative separation products and smart separation processes to reduce the energy consumption of separation processes which underpin Australian industry. The Hub focuses on the development, synthesis, characterisation and integration of advanced materials (membranes, adsorbents and resins), across scales to enable novel products. The intended research outcomes allow the majority of Australian industry to become more energy-efficient and cost-competitive in a global economy. The Hub also aims to develop a highly-trained, industry-ready workforce for Australian industry related to separation.

To learn more about how your organization can get involved and participate in the ARC EESep Hub, please contact Hub Director: Prof. Xiwang Zhang, xiwang.zhang@monash.edu



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Chemistry Festival at 100th RACI Congress



DR LUDOVIC (LUDO) DUMÉE

Alfred Deakin Research Fellow

[Institute for Frontier Materials](#)

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The Australian Chapter – American Chemical Society (ACS) Chemistry Festival, an outreach program aimed at primary and high-school students to promote chemical sciences, took place on Thursday the 27th of July during the Centenary RACI Congress in Melbourne. The Chemistry Festival started over 15 years ago through the ACS and its Puerto Rico chapter, nowadays attracting twice a year over 10,000 attendees and being the largest scientific event in Puerto Rico. This initiative led by Prof. Ingrid Montes has also spanned to mainland USA as a nationwide 10 days Chemistry Festival where students compete with their classmates, teachers and academic volunteers for the most imaginative and yet simple demonstration for how chemistry affects our daily lives.

Our Festival, the first in Australia, welcomed over 300 attendees, in majority grade 7 to 11 students over the day for hands-on activities and demonstrations. Two booths managed by Deakin University, presented work carried out at IFM on photo-catalysis and membrane separation, while two other booths were led by Latrobe University and Monash University on adsorption by nappies and low cost pH design.

Membrane separation with micro-filtration metal membranes and reverse osmosis



These activities, led by Jingshi Wang and Andrea Merenda, two members of the Separation Materials Team at Deakin, generated great interest from the high school students, with numerous – and unexpected! – high level questions on topics such as band-gap calculations in semi-conductors and chemistry or reuse of membrane materials. The response from both the teachers and students was outstanding, with many asking for more demonstrations at their respective high schools.

Chemistry Festival at 100th RACI Congress

The teams did an amazing job both in terms of organization, planning and pitching the experiments to a large and diverse audience. I am very grateful for their pro-activity, hard work and passion which allowed for a very successful event. The teams put together particularly impressive and yet simple experiments. In addition to the ACS, I would also like to thank the Institute for Frontier Materials and the Membrane Society of Australasia for joint funding.

Members from the Deakin and University of Melbourne volunteers



I hope to have opportunities to continue this initiative over the next few years and that we can get more volunteers to support the event! So if you are interested to be involved next year, please let me know!

LUDO DUMÉE, Chair of the 1st Australian Chemistry Festival

<http://festivalofchemistry17.weebly.com/>

Fulbright Fellowship Story

Professor Benny Freeman

Richard B. Curran Centennial Chair in Engineering
McKetta Department of Chemical Engineering
The University of Texas at Austin
<http://membrane.ces.utexas.edu/>

Prof Freeman was esteemed as a Fulbright Fellow this year and he has made full use of this prestigious position in Australia. During the Fulbright Fellowship program, Prof. Freeman connected with many previous Australian colleagues as well as many new colleagues in areas related to his research, polymer membranes for low energy separations related to gas purification and water filtration.



He delivered 15 lectures and seminars in Australia in total during his 20 weeks' stay.

Some of the highlights and activities are,

- ❖ Sir Jerry Price Lecture at the Australian Synchrotron.
- ❖ Victorian Parliament on issues related to the nexus of food, energy, and water, and the role of separation membranes in the nexus linkages.
- ❖ Meetings of the Australian Academy of Technological Sciences and Engineering, and gave an invited lecture.
- ❖ Nominated several Australian colleagues for recognition in professional societies in the United States.
- ❖ Discussed with Membrane Society of Australasia to help plan strategies for hosting the International Congress on Membranes in 2023.
- ❖ Offered technical know-how and deepen mutual research ties by collaborating on several proposals and manuscripts with Australian colleagues. These lectures allowed him to further expand his professional network and establish new research collaborations for the future.
- ❖ Daily visit from his friend, a humble Australian sulphur-crested cockatoo.



Travel Award Winners



From left to right: Ludo Dumée, Tony Fane, Yunchul Woo, Lin Li, Francois-Marie Allieux, Laura Chekli, Winny Fam, Qianhong She
Missing in photo: Sungil Lim

At this year's 11th ICOM conference, MSA has awarded seven PhDs / ECRs with \$1000 AUD cash prizes to help with the cost towards attending the conference and presenting their research work. They are Winny Fam, Francois-Marie Allieux, Yunchul Woo, Sungil Lim, Qianhong She, Laura Chekli and Lin Li.

Also, congratulations to

Mr Yunchul Woo, a final year PhD student at UTS, for winning the Best Poster Presentation Award for, "*Superhydrophobic co-axial electospun nanofiber membranes for water desalination by direct contact membrane distillation*",

Dr Qianhong She, an USYD Lecturer, who also won NAMS Young Membrane Scientist Award on his presentation for, "*A novel osmotic-resistance filtration model for understanding of mass transport, fouling mechanisms and membrane design in osmosis-related membrane processes*".



Aaron, Yunchul Woo, Hokyong

Newsletter Taskforce



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This year we have formed a group of Newsletter Taskforce around Australia to assist MSA in gathering important pieces of news, events and research highlights related to membranes and membrane technologies in a quarterly fashion. The members of Newsletter Taskforce were carefully selected based on Board nominations and their relevance to membrane field. Please welcome them to the MSA family during news gathering time by offering your kind assistance.

Should you wish to nominate someone in your state / in your research group for the Taskforce, please get in touch with the Newsletter Editor, David Wang.

Taskforce Member / Project	Supervisors	UNI
NSW		
Mr Nirenkumar Pathak <i>Osmotic membrane bioreactor for wastewater treatment and reuse</i> – Final year PhD	Prof Hokyong Shon Dr Sherub Phuntsho	UTS
QLD		
Miss Nur Hafizah Ab Hamid <i>Forward Osmosis (FO) Membrane-based Technology in Urban Wastewater Treatment</i> – 2 nd year PhD	Dr Liu Ye Dr Simon Smart Dr David Wang	UQ
VIC		
Dr Ze Xian Low <i>From membrane material synthesis to fabrication and function (SynFabFun)</i> – 2 nd year Postdoc	Prof Davide Mattia Dr Darrell Patterson	UBath MonashU
Mr Riyadh Al-Attabi <i>Functional Electrospun Nanofibers Membranes for Nanomaterials Filtration</i> – 2 nd year PhD	Prof Yosry Morsi Dr Ludo Dumée	DeakinU

MSA Funding Support Programs

MSA Workshop Funding Support Program 2017 Call for Proposals and Applications

The MSA Funding Support Program provides funding support to membrane-related events such as workshops and symposia that are held in Australasia.

Who can apply for the MSA workshop support program?

All MSA members can apply for funding support from the MSA.

How to apply?

The application form must be submitted to the MSA at your earliest time before the date of the event. Please advise the MSA as soon as possible of any planned event so that we can consider it for budgeting. The chances of success are likely to be improved by an early application. The outcome of the application will be announced approximately 1 month after the submission of the application.

Contact us

For further information, contact the program coordinator, Hokyong Shon, at the following email address:

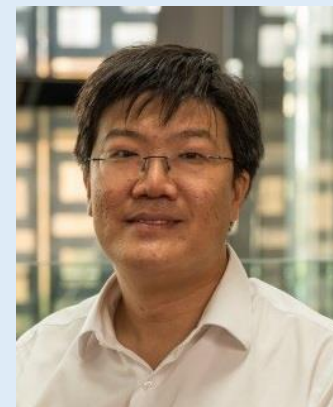
Hokyong.Shon-1@uts.edu.au

MSA Travel Award Program

MSA periodically sponsors students and ECRs, who are members of MSA, to attend international conferences and to support their travel and attendance costs to a maximum of \$500 AUD. Details of travel award application on each conference will be announced to MSA members several months before the deadline of its abstract submission. The recipients will receive the cash prize into their project or travel account.

Contact Program Coordinator:

Prof. Greg Leslie (award@membrane-australasia.org)



A/PROF. HOKYONG SHON

ARC Future Fellow

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Associate Professor in School of Civil and Environmental Engineering

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2018 Important Events

2017 / 2018 Key Membrane Events

EVENT	DATE	YEAR
SSEAC Membrane Masterclass and Workshop University of Sydney, Australia	27 Nov	2017
Water, Membrane, Environment & Energy Tech Expo Bangkok, Thailand www.wm2e-expo.com	14-16 Dec	
1 st International Conference on Bio-inspired Material and Membrane (IBMM2018) & 1 st International Conference on Energy-efficient Separation (IEESep2018) Monash University, Australia	24-27 Jan	2018
International Conference on Nanoscience and Nanotechnology University of Wollongong, Australia ausnano.net/iconn2018	29 Jan-2 Feb	
5 th MSA Early Career Researcher Symposium Macquarie University, Australia www.msaecr18.com	5-6 Feb	
27 th Annual Meeting North American Membrane Society Lexington, Kentucky, USA www.membranes.org/2018/index.html	9-13 Jun	
15 th International Conference on Inorganic Membranes Dresden, Germany www.icim2018.com	18-22 Jun	
11 th Conference of Aseanian Membrane Society Brisbane, Australia www.ams11.com.au	3-6 Jul	
Euromembrane 2018 Valencia, Spain http://euromembrane2018.org	9-13 Jul	
2 nd African Membrane Society International Congress Johannesburg, South Africa www.sam-ptf.com	29 Jul-1 Aug	

THANK YOU

We wish to thank the Newsletter Taskforce for their outstanding contributions to the collection of news content for the October 2017 Newsletter, and Dr Ludovic Dumée for the editorial review.

Board Members

Chair– Amanda Ellis, UMelb

Vice Chair– Hokyong Shon, UTS

Secretary– Stefan Smith, CSIRO

Treasurer– Ludovic Dumée, DeakinU

Newsletter Ed– David Wang, USYD

Board – Aaron Thornton, CSIRO

Travel Awards Coord– Greg Leslie, UNSW

Industry Rep.–Xiwang Zhang, MonashU

Strategic Relations:

Peter Macintosh, Consultant

Ken Morison, UCanterbury

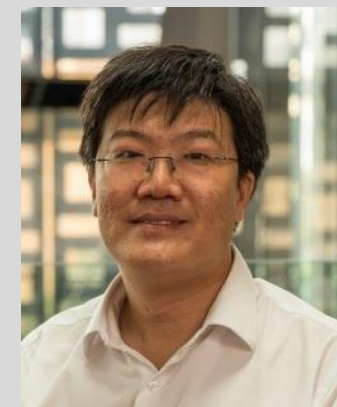
Pamela El'Jbeily, IXOM



BOARD MEMBERS



Amanda Ellis



Hokyong Shon



Stefan Smith



Ludovic Dumée



David Wang



Aaron Thornton



Greg Leslie



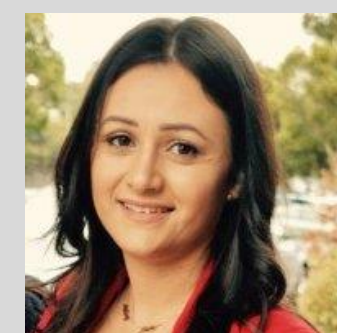
Xiwang Zhang



Peter Macintosh



Ken Morison



Pamela El'Jbeily