

[This page intentionally left blank]

Table of Content

Message from the New President & Vice President	1
MSA 2018 Retreat.....	2
Newsletter Taskforce.....	3
ARC Research Hub Success	4
ARC 2019 Funding Success.....	5
IBMM2018 & IEEsep2018 Conference Recap.....	8
MSA ECR Symposium Highlights.....	10
AMS11 Conference Highlights.....	12
AMS11 Travel Award Winners.....	14
ISIM8 Highlights.....	15
Fulbright Fellow Story.....	16
Seelye Visiting Fellowship.....	17
MSA Workshop Funding.....	18
MSA Travel Award.....	19
The Tony Fane Award.....	20
Distinguished Scholar Funding.....	21
Australasia Premier Conferences.....	22
2019/2020 Key Membrane Events...	23

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.



Messages From the New President & Vice President

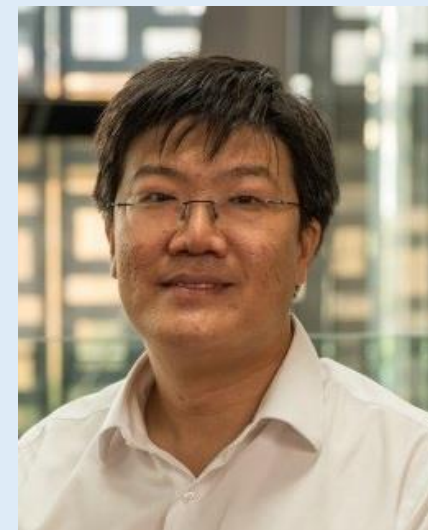
The newsletter covers an overview of the activities and services, a strategy for future planning and a financial overview for 2018. The MSA has significantly grown and is now responsible for engaging with Aseanian Membrane Society (AMS) and World-Association of Membrane Society (WA-MS) and organising major events including the AMS conference, MSA-ECR Symposium and MSA workshops. I would like to offer my sincere appreciations for all the enhanced developments and changes by Prof. Amanda Ellis who did over one year in driving the MSA to become a highly improved and recognised society not only in Australia but throughout the world. The MSA also welcomed 4 new board members including Dr Zongli Xie (CSIRO), Dr Geoffrey Johnston-Hall (Evoqua Water Technologies), Dr Leonard Tijing (UTS) and Dr Filicia Wicaksana (Uauckland) and the new secretary, Dr Andrea Merenda (DeakinU).

The AMS11 was convened by Prof Mikel Duke and Dr Simon Smart in Brisbane and was a huge success attracting over 331 participants with strong international and industry engagement. The next conference of the AMS12 will be held on 2-5 July 2018, Jeju Island, Korea. I hope to see you all again for the successful AMS communities.

The MSA Newsletter was released only in July throughout this term and we introduced E-update from October 2018 covering the 2018 MSA Strategic Retreat, AMS11, technical workshops, upcoming events and other membrane-related news. The E-update will be communicated as frequent as possible to engage with the members and to update MSA activities. Further, the MSA social network services of Twitter, Facebook and LinkedIn have been generated to better interact with the members and other membrane-related users.

The MSA activities are moving fast with the implementation after the strategic planning, the workshops, seminars, e-updates, social network services and networking activities. Prof Robert Field from Oxford University and Prof. Michael Guiver from Tianjin University will be coming as a Distinguished Lectureship scheme for the first time and will be presenting at multiple events across the country. Travel awards will be offered to students and ECR's presenting at the 6th MSA ECR Symposium in Melbourne, AMS12 in Korea and any other membrane-related events. Please take an advantage of numerous opportunities given to the MSA members.

I look forward to seeing you in the MSA ECR Symposium in Melbourne on 30 January 2019. I wish you and your loved ones a Merry Christmas and Happy, Healthy and Prosperous 2019.



Prof. Hokyoung Shon, President

ARC Future Fellow
Deputy Director of Centre for
Technology in Water and Wastewater
Professor in School of Civil and
Environmental Engineering
Faculty of Engineering and IT
UNIVERSITY OF TECHNOLOGY SYDNEY
T: +61 447 332 707
PO Box 123 Broadway NSW 2007
Australia

<https://twitter.com/KyongShon>

<http://www.uts.edu.au/staff/hokyoung.shon-1>



Dr. Geoffrey Johnston-Hall, Vice President

Principal Scientist
Evoqua Water Technologies
SOUTH WINDSOR, NEW SOUTH WALES,
SYDNEY

T: +61

[https://www.linkedin.com/in/geoffrey-johnston-hall-](https://www.linkedin.com/in/geoffrey-johnston-hall-3173b37b/?originalSubdomain=au)

[3173b37b/?originalSubdomain=au](https://www.linkedin.com/in/geoffrey-johnston-hall-3173b37b/?originalSubdomain=au)

MSA 2018 Strategic Retreat

In September 2018 the MSA Board and honorary members undertook a strategic retreat at the University of Technology Sydney to reflect on the successful highlights and forge discussions on the future direction of the MSA.



MSA 2018 retreat – from Left to Right; Dennis Cho, Hokyong Shon, Hans Coster, Filicia Wicaksana, David Wang, Tony Fane, Geoffrey Johnston-Hall, Stefan Smith, Mikel Duke, Zongli Xie, Leonard Tijing. Photo taken by Andrea Merenda.

The strategic planning event received input from the Board and a wide range of our members and identified five priorities for the organisation in 2018 – 2019:

- Expanding our membership
- Encouraging and supporting industry involvement
- Engaging more with under-represented regions and cities (eg., WA, SA, NZ)
- Improving the organisations communication and social media presence
- Preparing a successful ICOM2023 bid
- A new website and membership registration process
- A new Distinguished lecture series
- IMSTEC (Feb Sydney 2020)

We are involved in a broad range of conferences moving forwards and developing workshops, and a Distinguished lecture series for prominent international membrane leaders. Along with the Board of the MSA, we are looking forward to supporting and improving on these goals through 2019.

Newsletter Taskforce

Last 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.



Dr David Wang

ARC-DECRA Fellow | Lecturer
School of Chemical and Biomolecular Engineering
THE UNIVERSITY OF SYDNEY NSW 2006
T +61 2 8627 6050
E: david.wang1@sydney.edu.au
<http://sydney.edu.au/engineering/people/david.wang1.php>

Taskforce Member / Project	Supervisors	UNI
NSW		
Mr Gholamreza Vahedi Sarrigani <i>Interfacial Diffusion Membrane Using Novel Nanoconfined Polymer Crystallization for Natural Gas Processing</i> – First year PhD	Dr David Wang Prof Dianne Wiley	USYD
QLD		
Miss Nur Hafizah Ab Hamid <i>Forward Osmosis (FO) Membrane-based Technology in Urban Wastewater Treatment</i> – 3 rd 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> – 3 rd year Postdoc	Prof Xiwang Zhang	MonashU
Mr Riyadh Al-Attabi <i>Functional Electrospun Nanofibers Membranes for Nanomaterials Filtration</i> – 3 rd year PhD	Prof Yosry Morsi Dr Ludo Dumée	DeakinU



Australian Government
Australian Research Council

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



Prof. Xiwang Zhang

Director of ARC EESep Hub
Department of Chemical Engineering
MONASH UNIVERSITY
Room 213, Building 36,
Clayton Campus, Clayton Vic 3800
Australia
T: +61 3 9905 1867

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

ARC 2019 Funding Success

This year, the ARC funding outcome was released on the 27 November for 2019 funding commencement. A number of membrane separation and materials researchers have done very well to secure Discovery Projects and a Discovery Early Career Researcher Award. MSA would like to say many congratulations to you and your colleagues on being awarded a 2019 DP and DECRA last week. That is a great achievement for the membrane community. A compiled snapshot list of membrane separation related projects is provided in this newsletter and their results can also be found at the ARC outcome website here in this [link](#).

Discovery Project

James Vaughan; Julius Motuzas; Joao Diniz da Costa

Inorganic membrane percrystallisation in hydrometallurgy

This project aims to develop the scientific and engineering basis for a new Australian inorganic membrane technology for the crystallisation of metal compounds. Inorganic membrane percrystallisation is a recent breakthrough promising improved productivity, energy savings and the ability to tailor particle properties. This project will develop a mechanistic model encompassing solution transport phenomena, crystal nucleation-growth-agglomeration and engineering process parameters affecting single and binary salt systems. This model will provide a basis for technology development benefiting Australia, such as the improvement of the production of nickel sulphate for the growing battery materials market.

Discovery Project

Matthew Hill; Mainak Majumder; Mahdokht Shaibani; Stefan Kaskel

Advanced separators for lithium-sulphur batteries

This project aims to develop new membranes for use as separators in lithium-sulphur batteries. Currently diffusion of polysulphides within these batteries reduces battery power and lifetime. The new membranes are intended to block polysulphide diffusion over an extended lifetime, while transporting the other ions needed for the battery to function. The project is expected to generate new membrane materials and further knowledge about the design, synthesis and larger-scale production of membranes for electrochemical applications. This project will provide significant benefits by producing potentially lighter, longer-lasting and cheaper batteries than existing lithium-ion technologies, with the potential to accelerate the adoption of electric cars.

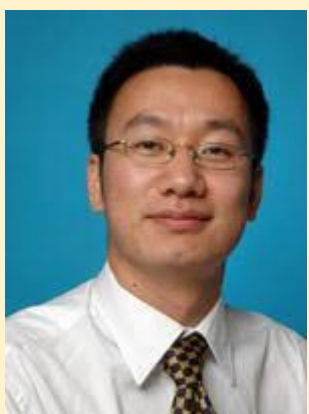


The University of Queensland



Monash University

ARC 2019 Funding Success



The University of
New South Wales

Discovery Project

Chuyang Tang; Anthony Fane; Menachem Elimelech

Ultrathin membranes of novel structures for highly efficient water reuse

This project aims to develop a new generation of reverse osmosis membranes to enable significantly more efficient water reuse. The project expects to generate new knowledge in the area of membrane technology and wastewater reclamation using innovative designs of membrane structures and new techniques for membrane synthesis. Expected outcomes of the project include the development of highly permeable and high selective reverse osmosis membranes. This project should provide significant benefits to water reuse by greatly improving product water quality and dramatically reducing its energy consumption by over 50 per cent, which in turn addresses the challenges of water scarcity and water-energy nexus.



The University of
Sydney

Discovery Project

David Wang; Amirali Ebrahimi Ghadi; Dianne Wiley; Hendrik Verweij

Designing high performance gas separation by interfacial diffusion membrane

This project aims to develop a new generation of interfacial diffusion membranes for industrial gas separations including carbon dioxide removal, nitrogen gas enrichment, methane purification and air separation. The project focuses on advancing separation technologies for the petrochemical, natural gas, and clean energy industries in the mining sector. The project is expected to reveal new separation properties and performance based on highly selective interfacial diffusion membranes. The project will also create new scientific knowledge about the role of functional surfaces and nanostructures that will not only facilitate new membrane designs but also offer new, more cost-effective devices for solar conversion, energy storage and harvesting, biomedical applications, sensing and information technology.



The University of Melbourne

Discovery Project

Sandra Kentish; Daniel Heath

Novel membranes and membrane structures using electrospinning

This project aims to develop novel membrane support materials and novel membrane structures to enhance chemical separation processes. These materials can be used in desalination and water treatment, reducing the resistance to water flows. In turn, this will reduce the energy required to produce fresh drinking water for Australians, as well as the cost. The approach will also be applied to carbon dioxide capture from flue gas streams, increasing the energy efficiency of these processes, so that they can become economically viable. The project has the potential to develop localised manufacturing operations to produce these materials, adding value to Australian manufactured products.

ARC 2019 Funding Success

Discovery Project

Tiffany Walsh; Neil Wilson; Jonathan Rourke

Mapping, modelling, and manipulating graphene oxide interfaces.

This project aims to provide a platform for the controllable manipulation of graphene oxide in water and with additives. Graphene oxide-based materials promise transformative change in the areas of filtration, separation science, energy materials and specialty coatings. Expansion of these materials into this broad range of high-performance applications is limited by the lack of reliable control over the organisation of the graphene oxide sheets in solution and in the presence of additives. This project will identify the practical steps for controlling the inter-sheet spacing in graphene oxide stacks, which is critical to realising their potential in real-world applications such as in filtration membranes for water desalination. This project will provide significant benefits in making reliable energy materials and filtration and separation membranes..



Deakin University

Discovery Project

Hongxia Wang; Tong Lin; George Chase; Zhongli Ji

Superwettability effects on oil-mist coalescing fibrous filters.

This project aims to provide new knowledge about how to use surface engineering techniques to produce highly efficient, energy-saving fibrous filters for separating oil mists from air streams. The focus is to address the challenge of the low efficiency of current generation coalescing filters for removal of oil mists smaller than one micrometre. The project will result in new methods to precisely control fibre surface wettability and oil drainage within fibrous filters. The new knowledge and coalescing filters developed will benefit scientific and industrial fields including metal processing, automotive, engineering and manufacturing, electronics, food, hospital, mining, pharmaceuticals and energy generation.



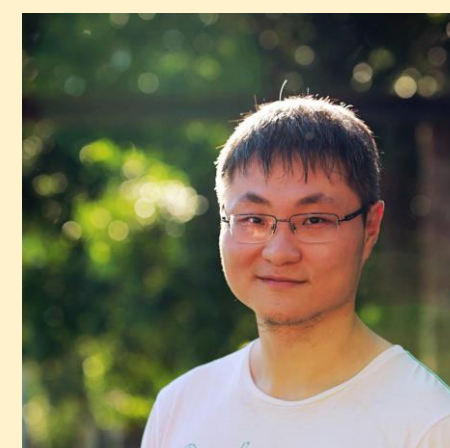
Deakin University

Discovery Early Career Researcher Award (DECRA)

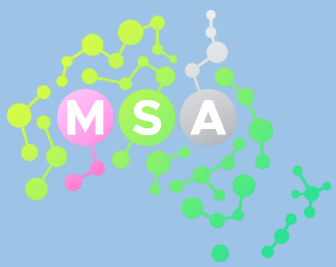
Jingwei Hou

Single-enzyme membrane biofuel cells for wastewater and flue gas treatment

This project aims to mitigate energy and environmental problems by fusing the fields of membrane separation, biocatalysis and electrochemistry. The novel single-enzyme biofuel cells can generate electrical power from processes like wastewater micropollutant degradation and flue gas carbon dioxide conversion. However, the bottleneck is the lifetime of enzymes and the lack of efficient reactor design. This project expects to overcome these challenges by developing metal-organic framework-based bioelectrode materials, and integrating them with separation membranes and single-enzyme fuel cells for energy generation. This project is expected to transform the current biocatalytic process for wastewater treatment and gas separation.



The University of New South Wales



IBMM - IEESep2018 Conference Recap

The 1st International Workshop on Bio-inspired Materials and Membranes (IBMM2018) and the 1st International Conference on Energy-efficient Separation (iEESep2018) was successfully held in Pullman Albert Park, Melbourne from 23 – 27 January 2018. Prof Marc Parlange (Provost and Senior Vice-President of Monash University) delivered his welcome speech at the opening ceremony.

The organiser of the two conferences, Australian Research Council Research Hub for Energy-efficient Separation (ARC-EESEP), hosted 157 participants and aimed to review and discuss the recent research progress and future direction of two vital research topics - bio-inspired materials and membranes. Bio-inspired materials are the focus of an emerging research topic, which aims to develop high-performance functional materials by learning from nature.

In the last a few years the applications of bio-inspired materials in membranes has increased significantly. Within this context, the two conferences together provided the perfect opportunity to gather experts from both research fields - including academic and industry partners - to exchange innovative ideas and experience in developing advanced materials and membranes for energy-efficient separation.

Professor Huanting Wang (Chair) and Professor Xiwang Zhang (Co-Chair), along with their organising committee, created a scientific program which aimed to provide researchers tangible benefits and collaboration opportunities, thereby stimulating research in the development of new bio-inspired materials and membranes. The participants of the conference were greatly benefited from the five plenary, 25 keynote and 15 invited speakers' talks.

An important element of the conferences was the opportunity for students to present their research in a supportive environment, which included mentors, future collaborators and leaders of their fields. Students were encouraged to present a poster or enter the 3MT competition, with awards given to the top three in each category.

Congratulations to 3MT award winners:

- 1st - Van Huy Tran (University of Technology Sydney)
- 2nd - Wang Zhao (Monash University)
- 3rd - Yun Xia (Monash University)

Congratulations to best poster award winners:

- 1st - James Maina (Deakin University)
- 2nd - Yuqi Wang (Monash University)
- 3rd - Yun Lu (Monash University)



Prof Huanting Wang (Chair) hosted the opening ceremony.

IBMM2018 & IEESep2018 Conference Recap

Some highlights and activities:

Plenary speakers included:

- **Professor Tony Fane** (UNESCO Centre for Membrane Science and Technology at UNSW, Australia), *Bioinspired membrane engineering for water applications*
- **Prof Lei Jiang** (ICCAS, and Dean of School of Chemistry and Environment, Beijing University of Aeronautics and Astronautics, China and Department of Chemical Engineering, Monash University, Australia), *Smart interfacial materials from super-wettability to binary cooperative complementary systems*
- **Prof Liang-Yin Chu** (School of Chemical Engineering, Sichuan University, China), *Bioinspired smart gating membranes*
- **Dr Anita Hill** (Future Industries, CSIRO, Australia), *Architecturing nanospace for highly efficient gas separations*
- **Prof Dongyuan Zhao**, (Department of Chemistry, Laboratory of Advanced Materials and Collaborative Innovation Center of Chemistry for Energy Materials, Fudan University, China and Department of Chemical Engineering, Monash University, Australia), *Functional mesoporous nanomaterials: fabrication and enhanced bioapplications*

The plenary talks of the conference have been uploaded on <https://www.arc-eesep.com/>.

Early Career Researcher Workshop was held on the first day of conference to help the young researcher to further develop their skills or in search of opportunities in the academia and industry.

A tour of Monash Campus and the Australian Synchrotron was organised to tie up Australian leading research institutions with the international research community and enable further collaborations.

The conference dinner was held at the Crown Towers to officially close the conference in style with amazing Jazz and food.

We would like to thank the sponsors,

Platinum: Australian Research Council, ARC Research Hub of Energy-efficient Separation, Monash University, and 2D Water

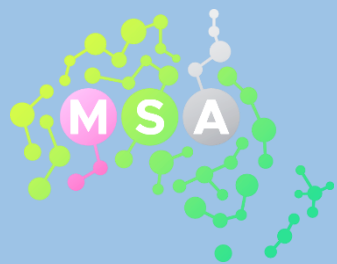
Gold: Membrane Society of Australasia

Silver: FB Rice and CSIRO MOFWORX.

The next IBMM will be held in Sichuan, China in 2020. See you all there!



Prof Xiwang Zhang (Co-Chair & Director of ARC-EESEP) introduced the ARC Research Hub of Energy-efficient Separation.



Dr Shuaifei Zhao (co-Chair of the event) gave the closing speech.

Early Career Researcher Symposium Highlights

The 5th MSA ECR symposium was successfully held at Macquarie University from the 4-6 February 2018. Prof. Barbara Messerle delivered her welcome speech at the opening ceremony. 14 senior membrane scientists from Victoria, Western Australia and Sydney regions provided excellent mentorship throughout the symposium to the next generation of membrane researchers.

The Membrane Society of Australia (MSA), in association with the Department of Environmental Science and Energy and Environmental Contaminants Research Centre at Macquarie University, hosted 67 participants at the early career researcher (ECR) symposium. The symposium was focused on fundamental and applied membrane science in engineering and technology across the areas of water treatment, gas separation, food and chemical processing ranging from materials development through to end use applications.

Dr Shuaifei Zhao (Co-Chair) and Dr Stefan Smith (Co-Chair), along with their organising committee, created a forum for young and emerging membrane scientists and engineers to share their latest innovative work on membrane science and technology and to receive mentorship from senior membrane scientists. Over 50 ECR participants greatly benefitted from the 14 invited speakers' talks. 18 oral and 9 post presentations were presented by ECR's at the symposium and awards were given to 3 outstanding presentations (further info on next page).

The symposium website can be found via: <https://www.msaecr18.com/>
The next MSA ECR symposium will be held in Melbourne in Jan 2019.



Participant group photo on the second day.

Early Career Researcher Symposium Highlights

Some highlights and activities:

Plenary and keynote speakers included:

- **Prof. Tony Fane** (UNESCO Centre for Membrane Science and Technology at UNSW, Australia): “Membranes - Past and Future”.
- **Prof. Vicki Chen** (UNSW): “Engineering New Nanocomposite Membranes for Gas Separation”.
- **Prof. Hokyong Shon** (UTS): “Application of Membrane Technology for Desalination and Water Treatment”.
- **Prof. Sandra Kentish** (University of Melbourne): “Novel Approaches to Dairy Processing”.
- **Dr Paul Feron** (CSIRO): “Water production through CO₂ capture”.
- **Prof. Amanda Ellis** (University of Melbourne): “The future is membranes”.
- **Prof. Shaomin Liu** (Curtin University): “Nickel hollow fibre membranes for hydrogen production from high temperature reforming reactions”.
- **Prof. Huanting Wang** (Monash University): “Metal-organic framework membranes: From gas separation to ion selection”.
- **A/Prof. Pierre Le-Clech** (UNSW): “Tools for improving the use of membranes in the industry”.
- **Prof. Long Nghiem** (UTS): “Recent development of membrane distillation for low carbon desalination and brine mining”.

Two Early Career Researcher Workshops on proposal writing and career development were held to help develop ECR skills in writing grants and pursuing career opportunities in both academia and industry.

The conference dinner was held at the Ranch Hotel.

Congratulations to 4 minute presentation award winners:

- 1st - Gloria M Gonsalve-Bravo (University of Queensland)
- Highly Commended - Mahdi Moshref-Javadi (Monash University)

Congratulations to best poster award winner:

- Anbharasi Vanangamudi (Victoria University)

The ECR Symposium would not be possible without the strong supports of the sponsors,

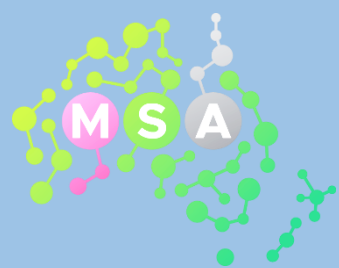
Platinum: Macquarie University, Australian Nanotechnology Network

Silver: University of Technology Sydney and InstrumentWorks

Bronze: CSIRO and Deakin University



Dr Stefan Smith (co-chair of the event) talked about his career at CSIRO.



Prof. Mikel Duke
VICTORIA UNIVERSITY
Conference Co-Chair



Dr Simon Smart
THE UNIVERSITY OF QUEENSLAND
Conference Co-Chair

This year, the 11th conference of the Aseanian Membrane Society (AMS11) was held from the 3rd to 6th of July in 2018 in Brisbane, Australia. The AMS conferences attract leading scientists and engineers, not only from Asia and Oceania, but also around the world, to share their latest innovative work on membrane science and technology.

The AMS11 Conference topics were:

- 1 Gas separation
- 2 Pervaporation and membrane distillation
- 3 MF and UF membranes
- 4 NF, RO and FO membranes
- 5 Electrically enhanced membrane operations
- 6 Membrane bioreactors
- 7 Membrane fouling
- 8 Water and waste water treatment
- 9 Wine, food and dairy application
- 10 Application in mining industry and agriculture
- 11 Membranes for energy conversion and storage
- 12 Bioinspired membranes and novel membrane materials
- 13 Process integration
- 14 Resource recovery

The AMS conferences are organised every year in rotation with the member countries, except during the years of the International Congress on Membranes and Membrane Processes (ICOM). Next year, AMS12 will be held on 2nd – 5th July in Jeju Island, South Korea.

The AMS11 would not be possible without the strong supports of the sponsors,

Silver: Evoqua, Scinor and Arkema

Bronze: Anton Paar and CSIRO

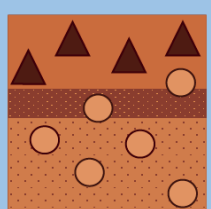
Conference Sponsors: 2D Water

Award Sponsors : MSA, MDPI, PTMem

Special Issue "Selected Papers from the 11th Conference of the Aseanian Membrane Society (AMS11)"

Deadline for manuscript submissions: **15 October 2018**

Membranes special issue, [click here to find out more.](#)



membranes

an Open Access Journal by MDPI

AMS11 Conference Highlights

Some highlights and activities:

Plenary speakers included:

1. **Prof. Ahmad Fauzi Ismail** (University of Technology Malaysia, Malaysia): “Innovations in Fundamental and Translational Research: The Experience of AMTEC”.
2. **Dr Bibhash Chakravorty** (Genesis Membrane Sepratech Pvt. Ltd., Mumbai, India): “Applications of Membrane Technologies for Various Industries in India”.
3. **Prof. Shingjiang Jessie Lue** (Chang Gung University, Taiwan): “Graphene Oxide-Polymer Nanocomposites for Energy and Water Purification Applications”.
4. **Prof. Zhi-Kang Xu** (Zhejiang University, China): “Surface and Interface Engineering for Advanced Membranes”.
5. **Prof. Ho-Kyong Shon** (University of Technology Sydney, Australia): “Osmotically driven desalination and energy production: membranes, draw solutions, processes and applications”.
6. **Prof. Rong Wang** (Nanyang Technological University, Singapore): “Development of Highly Effective Membranes for Water Reuse, Desalination and Energy Harvesting – from Laboratory to Commercialization”.
7. **Prof. Jong Hak Kim** (Yonsei University, South Korea): “Amphiphilic Graft Copolymer Membranes: Synthesis, Nanostructure and Gas Separation”.
8. **Prof. Takeo Yamaguchi** (Tokyo Institute of Technology, Japan): “Systematic Membrane Design for Fuel Cells, Bio-inspired Materials and Desalination Processes”.

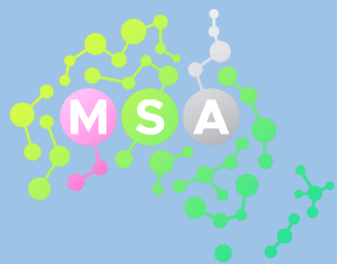


“To kill or be killed!”

The conference dinner was held on the Kookaburra Cruise to officially close the conference in style with guest speakers Prof. Neal Chung (left) and Prof. Shin-ichi Nakao (right), who shared their invaluable views on the historical development and career highlights in membranology.



“Look for a good mentor”



AMS11 Travel Award Winners

At AMS11, Membrane Society of Australasia successfully organised the conference which attracted 331 delegates. It was chaired by Professor Mikel Duke from Victoria University and Dr Simon Smart from The University of Queensland. We also supported the travel for several national and international PhD students and ECRs to present their work at this conference. The list of awardees, along with other sponsored awardees, are,



Travel Awards (MSA):

Guang Yang (Australia), Deiling Zhao (Singapore), Stefan Smith (Australia), Gongping Liu (China), Chuanjie Fang (Japan), Yi Wang (China), Liang-Yi Wang (Singapore), Long Cheng (China), Akbar Asadi Tashvigh (Singapore)

Also, a big congratulations to the winners of the following awards,



Poster & Oral presentations:

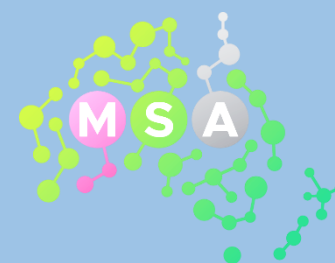
Student oral award: 1st – Boyang Meng (Membrane),
2nd – Rasmus Skov Klitgaard (Australia)
ECR oral award: 1st – Jaewoo Lee (Membrane),
2nd – Daisuke Saeki (Japan)
Student poster award: 1st – Jaehan Yun (Korea),
2nd – Micah Belle Maria Ang (Taiwan)
ECR poster award: 1st – Yinhua Wan (Polish Membrane Society),
2nd – Jung Hyun Lee (Korea)



AMS special Awards:

Prof C.N. Murthy (India)
Kangjia Lu (Singapore)
A/Prof Mohd Hafiz Dzarfan Othman (Malaysia)

Further information can be found via: <https://membrane-australasia.org/news/ams-11-conference/24583/>



Participant group photo on the second day.

At this year's 8th Inorganic Symposium on Inorganic Membrane (ISIM8), which was held on the 6-7 July at The University of Queensland and chaired by Prof. Joe da Costa, Prof. Mikel Duke, and Dr Simon Smart, MSA has sponsored \$2000 AUD to help with the cost towards ISIM8 organisation. ISIM was initiated by Prof. Toshinori Tsuru as a post-conference event of International Conference of Inorganic Membranes (ICIM) in 2008, and has been running continuously for the last 10 years. The purpose is to exchange the new topics and make friends with inorganic membrane people in Aseanian Membrane Society countries. The invited international speakers at ISIM8 were,

Prof Mikihiro Nomura (Shibaura Institute of Technology, Japan)

“High Flux MFI Membranes Prepared on Porous Silica Substrates”

Prof Fauzi Ismail (Universiti Teknologi Malaysia)

“Carbon Membrane for Gas Separation”

Dr Bibhash Chakravorty (Genesis Membrane Sepratech Pvt. Ltd, India)

“Production of Ceramic Membranes for Industrial Applications in India”

Prof Wanqin Jin (Nanjing Tech University, China)

“Inorganic Membrane Performing Blood Separation and Sensing Synchronously”

Prof Hui-Hsin Tseng (Chung Shan Medical University, Taiwan)

“Recent Progress in Carbon Membranes For Gas Separation and W/O Emulsion Separation”

Prof Churl-Hee Cho (Chungnam National University, Korea)

“Formation mechanism of hierarchical CHA zeolite microsphere and the application to synthesis of CHA zeolite membranes for solvent dehydration”

Prof Tomohisa Yoshioka (Kobe University, Japan)

“Gas Permeation Properties of Microporous Ceramic Membranes; Molecular Simulation and In-Situ Characterization of Sub-Nano Porous Structures”

Prof Mohd Hafiz Dzarfan (Universiti Teknologi Malaysia)

“Inexpensive Ceramic Hollow Fibre Membranes: Fabrication and Applications for Water Treatment”

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.



Seelye Visiting Fellowship

Professor William Krantz

Emeritus Professor & President's Teaching Scholar,
Department of Chemical & Biological Engineering,
University of Colorado

Emeritus Professor & Ohio Eminent Scholar,
Department of Chemical and Materials
Engineering, University of Cincinnati



Dr Filicia Wicaksana

Department of Chemical and Materials
Engineering

UNIVERSITY OF AUCKLAND

New Zealand

2-6 Park Avenue - Bldg 529, Grafton

AUCKLAND 1023, New Zealand

T: +64 9 923 1861

Dr Filicia Wicaksana hosted Emeritus Professor William Krantz on 10 September – 11 October 2018. The visit was funded by the Ralph and Eve Seelye Charitable Trust. During the fellowship, Prof Krantz delivered a Public Lecture on “Fresh Water – Challenges and Opportunities”, a series of workshop on oral communication skills for PhD students, two internal seminars on “Reflecting on 50+ Years in Chemical Engineering” and “Recent Advances in Membrane Fabrication, Characterization, and Process Technology at the Singapore Membrane Technology Centre” as well as interacted with PhD students in Membrane Research Group at the University of Auckland.



From left to right: Dr Filicia Wicaksana, Prof William Krantz, June Krantz (Prof Krantz's wife), and James Hill (Seelye Trustee)

MSA Funding Support Programs

MSA Workshop Funding Support



Dr Leonard Tijing

School of Civil and Environmental
Engineering
Faculty of Engineering and IT
UNIVERSITY OF TECHNOLOGY SYDNEY
Sydney,
PO Box 123 Broadway NSW 2007
Australia
T: +61 2 9514 2652

This program provides funding support to membrane-related events such as workshop 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.

Funding use – What the MSA workshop funding support program is for?

Financial support is provided for activities and projects that are beneficial to membrane technology in Australasia. This includes a range of activities, such as:

Sharing of knowledge on one particular topic related to membrane technology in the laboratory, pilot or full scale level,

Dissemination of results/outcomes at the end of a project and highlight future trends,

Promoting new activities.

Funding support is available to help out with:

Administrative activities (e.g., venue, materials),

Catering (e.g., cost of lunch, coffee),

Sponsoring speakers (e.g. travel and accommodation expenses),

Awards,

Free or discount registration fees for ECR.

A maximum of \$2,000 per event will be allocated.

How to apply?

The application form ([click to download](#)) must be submitted to the MSA Workshop Committee at least 3 months before the date of the event with the subject “MSA Workshop funding application”. 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.

Conditions

To qualify for this funding program, your group has to meet the following terms and conditions:

Matched funding – your application must include at least an equal monetary or in-kind contribution from you or your project partners;

Registration fees – the event should provide free or more than \$50 discount registration fees for MSA members;

Reporting – write a short article on the event for publication in the MSA newsletter, highlighting relevant points of interest to MSA members (this is a requirement before reimbursement is given);

Acknowledgment – the MSA (including the logo) must be acknowledged for providing financial support in all printed media (programs, flyers, cover slides, websites, etc.) and presentation materials.

Contact us

If you would like further information on the MSA funding program, contact

Funding program coordinator: Dr Leonard Tijing (funding@membrane-australasia.org or Leonard.Tijing@uts.edu.au).

MSA Funding Support Programs

MSA Travel Award Program for AMS12 is now open!

In order to assist MSA members (students and early career researchers (ECRs)) to attend the 12th Aseanian Membrane Society (AMS12) international conference in Jeju, Korea in July 2019, **the MSA will sponsor travel awards to support their conference registration costs (amounting to around A\$400 – A\$700 each)**. The MSA executive will directly pay the registration costs of the award recipients to the AMS12 organizing committee. The award winners will be announced to all MSA members.

(ECRs here are defined as those researchers within 5 years post-PhD graduation)

Eligibility

Must be a current member (HDR student or ECR) of the MSA

Must have their abstract accepted and be the presenting author of an oral or poster presentation at the conference

Must not have previously won a travel grant from MSA during the calendar year

Selection Criteria

Applicants will be selected by a panel of judges according to their track record relative to opportunity, the quality of abstract and significance of research, justification of eligibility and the need for financial assistance.

Travel Funding use – What the MSA grant support program is for?

This travel award is provided specifically for the sponsorship of AMS12 conference registration.

Dr Leonard Tijing

School of Civil and Environmental Engineering

Faculty of Engineering and IT

UNIVERSITY OF TECHNOLOGY SYDNEY
Sydney,

PO Box 123 Broadway NSW 2007
Australia

T: +61 2 9514 2652

How to apply?

The application form ([click to download](#)) must be submitted via email to the MSA Travel Funding Committee (funding@membrane-australasia.org) with the subject line: “**AMS12 travel award application**” at the announced deadline.

The outcome of the application will be announced within 6 weeks after the deadline.

MSA travel award application submission deadline: 18 January 2019

Conditions

To qualify for this travel funding program, the awardee has to meet the following terms and conditions:

Reporting – write a short article as a contribution to the MSA Newsletter, highlighting relevant points of interest to MSA members (can be about the conference or other member-related topics);

Acknowledgment – the MSA (including the logo) must be acknowledged for providing financial support in the presentation materials.

Contact us

If you would like further information on the MSA travel funding program, contact

Travel funding program coordinator: Dr. Leonard Tijing (funding@membrane-australasia.org or Leonard.Tijing@uts.edu.au)

New MSA Funding Initiative

New MSA initiative: The Tony Fane Award

Dr Leonard Tijing

School of Civil and Environmental
Engineering
Faculty of Engineering and IT
UNIVERSITY OF TECHNOLOGY SYDNEY
Sydney,
PO Box 123 Broadway NSW 2007
Australia
T: +61 2 9514 2652

Tony Fane Award Scheme

The Membrane Society of Australasia (MSA) seeks to recognize individuals who have made outstanding and distinguished contribution to the advancement of membrane science and technology in Australasia through the Tony Fane Award. Nominations for this award will be assessed by an assessment panel appointed by the MSA Board. The nominee need not be a member of MSA to be eligible but it requires independent nomination. The panel will base their assessment on the track record of the nominee, the strength of claims and evidence provided to support the claims, and the long term contribution and the difference made by the nominee to the membrane field and community in Australasia. After the panel has deliberated and selected the award winner, they will forward the decision to the MSA Board for final confirmation. Awarding of the Tony Fane Award will be given during the gala night of an MSA-sponsored major conference (such as the International Membrane Science and Technology (IMSTEC) conference). The panel and the board reserve the right not to award any nominees in the respective year if no one meets the expected quality and calibre for an awardee.

The Tony Fane Award winner will receive a plaque of recognition and inclusion in the Tony Fane Award gold tablet list of distinguished membranologists.

Eligibility and how to nominate

Only MSA member can nominate an individual for the Tony Fane Award. The nominee need not be an MSA member to be eligible. Current MSA board members and those involve in the assessment panel are not eligible to nominate and be nominated for the award. Any board member who may have conflict of interest with the nominated individual should not be part of the assessment panel.

The nominator should submit a completed nomination form and supporting documents:

- Complete details of the nominee and the nominator
- A synopsis (max 500 words) of why the nominee is deserving of the Tony Fane Award – describe and demonstrate the nominee's distinguished contribution to the membrane field and community, and how the nominee has made a difference
- Any documents to support the claims including short biography (100 words) and CV of the nominee

When and how to submit the nomination

Completed nomination form (Word or PDF) should be emailed to the Tony Fane Award panel to (funding@membrane-australasia.org) on or before the announced due date. Late and/or incomplete submissions will not be accepted by the panel. **Open submissions and further details (including nomination form) for this award will be communicated to all MSA members sometime in 2019. Nominations are still close at this time.**

Notification of award winner

The Tony Fane Award winner will be notified by the MSA Board a few months before IMSTEC conference. The award will be presented during the gala night of an MSA-sponsored major conference unless advised otherwise. The winner will also be highlighted on the MSA Newsletter, websites, and related social media sites.

New MSA Funding Initiative

New MSA initiative: Distinguished Scholar

This program provides funding support to the visit of international distinguished scholar in membrane-related fields to Australasia.

Who can apply for the MSA distinguished scholar funding support program?

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

Funding use – What the MSA distinguished scholar funding support program is for?

Financial support is provided for visiting activities that are beneficial to membrane community in Australasia. This includes a range of activities, such as (1) sharing of knowledge on one particular topic related to membrane technology in the laboratory, pilot or full scale level, and (2) scientific lectures/seminars.

Funding support is available to help out with:

- Catering (e.g., cost of lunch, coffee),
- Travel and accommodation expenses,

A maximum of \$2,000 per scholar will be allocated.



Prof. Xiwang Zhang

Director of ARC EESep Hub
Department of Chemical Engineering
MONASH UNIVERSITY
Room 213, Building 36,
Clayton Campus, Clayton Vic 3800
Australia
T: +61 3 9905 1867

How to apply?

The application form must be submitted to the MSA at least 2 months before the date of the visit. Please advise the MSA as soon as possible of any planned visit 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.

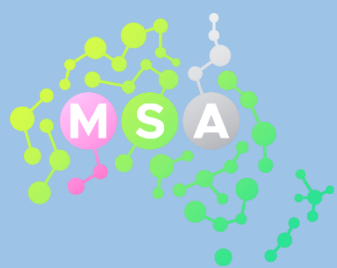
Conditions

To qualify for this funding program, your application has to meet the following terms and conditions:

- Matched funding – your application must include at least an equal monetary contribution from other sources to support the visit;
- The scholar must be an outstanding, world-renown expert in membrane-related fields;
- The scholar must give ≥ 2 scientific seminars in different universities;
- Reporting – write a short article on the event for publication in the MSA newsletter, highlighting relevant points of interest to MSA members;
- Acknowledgment – the MSA (including the logo) must be acknowledged for providing financial support in all printed media (programs, flyers, cover slides, websites, etc.) and presentation materials.

Contact us

If you would like further information on the MSA funding program, contact The coordinator of the distinguished scholar funding support program: Professor Xiwang Zhang (support@membrane-australasia.org or xiwang.zhang@monash.edu).



Australasia Premier Conferences

ECRMemSym 2019 is Australia's premier symposium for membrane scientists and engineers in the early stages of their career. Organised by the Membrane Society of Australasia, it will be held from 30 Jan – 1 Feb 2019 at The University of Melbourne.

The purpose of the symposium is to offer a platform for exchanging ideas and thoughts whilst developing career and scientific communication skills. The symposium will bring together both students and young professionals in membrane science and technology from Australasia. Further information can be found at this website; www.msaecr19.com.



Another exciting upcoming event is the 10th International Membrane Science & Technology Conference organised by MSA will be held from 2 to 6 February 2020 at the University of Technology Sydney, Sydney, New South Wales.

The International Membrane Science & Technology Conference is attended by industry and academic leaders and focuses on advances in all areas of membrane science and technology, with particular attention on water treatment, food processing, energy production and material characterisation. The IMSTEC conference program will include formal presentations and poster sessions of its scientific program as well as keynote presentations from leaders from academic and industry. The conference will also include a number of industry relevant workshops and tours of local sites featuring membrane operations.

Further information can be found at this website; www.imstec2020.com.

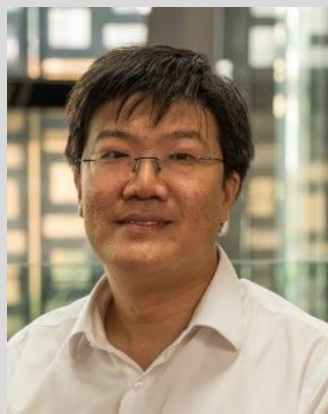
2019/2020 Key Membrane Events

CURRENT EVENT	2019 DATE	ABSTRACT DEADLINE
2019 MSA Early Career Researcher Membrane Symposium University of Melbourne, Australia www.msaecr19.com	30 Jan – 1 Feb	Expired
2019 Membrane Technology Conference & Exposition New Orleans, America www.awwa.org/amta/membrane2019	25 – 28 Feb	21 Dec 2018
Small Molecule Control of Membrane Biofouling University of Arizona, USA aquamem.com/special_pages/SMCMB/index.html	31 Mar – 3 Apr	14 Dec 2018
Engineering with Membranes – EWM 2019 University of Wollongong, Australia ewm2019.eu	8 – 10 Apr	8 Feb 2019
14th International Conference on Membrane Science & Technology Nanyang Technological University, Singapore memsis.org/mst2019	7 – 9 May	31 Jan
28th North American Membrane Society Annual Meeting Pittsburgh, USA nams2019.org	11 – 15 May	15 Feb
12th Conference of Aseanian Membrane Society Jeju, Korea www.ams12.org	13 – 14 Jun	11 Jan
2nd International Conference on Energy-Efficient Separation Melbourne, Australia www.arc-eesep.org/ieesep2019	27 – 30 Nov	1 Aug
4th International Conference on Desalination using Membrane Technology Perth, Australia www.elsevier.com/events/conferences/desalination-using-membrane	1 – 4 Dec	31 May
	2020 DATE	
10th International Membrane Science & Technology Conference University of Technology Sydney, Australia www.imstec2020.com	2 – 6 Feb	TBA
29th North American Membrane Society Annual Meeting Tempe, Arizona nams2020.org (under construction)	16 – 20 May	TBA
16th International Conference on Inorganic Membranes Taipei, Taiwan www.icim2020.org	29 Jun – 2 Jul	TBA
International Congress on Membranes & Membrane Processes 2020 London, UK www.icom2020.co.uk	12 – 17 Jul	TBA

THANK YOU



BOARD DIRECTORS



Hokyong Shon



Geoffrey Johnston-Hall



Stefan Smith



Ludovic Dumée



Xiwang Zhang



David Wang



Leonard Tijing



Filicia Wicaksana



Zongli Xie



Andrea Merenda

Board Members

President – Hokyong Shon, UTS

Vice President – Geoffrey Johnston-Hall, Evoqua Water Technologies

Secretary – Andrea Merenda, DeakinU

Treasurer – Ludovic Dumee, DeakinU

Newsletter Ed – David Wang, USYD

Webmaster – Stefan Smith, CSIRO

Travel Awards Coord – Leonard Tijing, UTS

Industry Engagement – Xiwang Zhang, MonashU

Membership Coord – Zongli Xie, CSIRO

NZ Engagement – Filicia Wicaksana, UAuckland