

Conference Program

Day 1 23 January 2018 (Tuesday)

4.00PM-6.00PM

Early Career Researcher Workshop
Venue: Room State 1

6.00PM-8.00PM

Registration & Welcome Reception
Venue: Pullman Hotels & Resort, Albert Park, Lobby, Ground Floor

Day 2 24 January 2018 (Wednesday)

8.00AM-8.30AM

Registration

8:30AM

Opening Ceremony
Venue: Room State 3

Plenary I
Venue: Room State 3
Chair: Prof. Stephen Gray

8:50AM Plenary Talk: Prof. Tony Fane
Bioinspired membrane engineering for water applications

9:25AM Plenary Talk: Prof. Lei Jiang
Smart interfacial materials from super-wettability to binary cooperative complementary systems

10:00AM

Morning Tea

Concurrent Session 1A
Venue: Room State 3
Bioinspired Interfacial Materials
Chairs: Prof. Wenlong Cheng & Prof. Yanlin Song

10:20AM Prof. Wenlong Cheng (Keynote)
Nanowire-based e-skin wearable sensing technology platform

10:45AM Prof. Yanlin Song (Keynote)
Nano-materials green printing technology for printed electronics

11:10AM Prof. Jianjun Wang (Invited)
Bio-inspired anti-icing materials

11:25AM A. Prof. Huan Liu (Invited)
Bio-inspired controllable liquid transfer by topological asymmetric fibers

Concurrent Session 1B
Venue: Room State 1
Synthetic, Biomimetic and Bioinspired Membranes (I)
Chair: Prof. Joe Da Costa & Prof. Weishen Yang

10:20AM Prof. Joe Da Costa (Keynote)
Carbonised sugar membranes for the percrystallisation of mineral brines, food and pharmaceutical compounds

10:45AM Prof. Weishen Yang (Keynote)
Biomass conversion and separation in MOF-based membrane reactor

11:10AM Prof. Yong Zhao (Invited)
Multistructured nanofibrous membrane for liquid separation

11:25AM A. Prof. Zhe Liu (Invited)
Some new concepts to design intelligent nanoporous materials for gas separation



11:40AM A. Prof. Zhongjun Cheng Bioinspired superhydrophobic surfaces with shape memory microstructure	11:40AM Prof. Dehua Dong Structured ceramic membranes as cathodes of solid oxide electrolysis cells for stable CO ₂ reduction
11:50AM A. Prof. Jingming Wang Superwettability of gas bubbles and its application: from bioinspiration to advanced materials	11:50AM Dr. Jue Hou Carbon nanotube networks as nano-scaffold for fabricating ultrathin molecular sieve carbon membrane

12:00PM Lunch

Plenary 2 Venue: Room State 3 Chair: Prof. Amanda Ellis
1:00AM Plenary Talk: Prof. Liang-Yin Chu Bioinspired smart gating membranes

Concurrent Session 2A Venue: Room State 3 Bioinspired Nanostructured Materials Chairs: Prof. Amanda Ellis & A. Prof. Xuchuan Jiang	Concurrent Session 2B Venue: Room State 1 Nanochannel Membranes and Porous Materials Chairs: Prof. Dan Li & Prof. Liping Wen
1:35PM Prof. Amanda Ellis (Keynote) DNA nanostructuring for diagnostics and templating	1:35PM Prof. Dan Li (Keynote) Multilayered graphene membranes for nanoionics
2:00PM A. Prof. Xuchuan Jiang (Keynote) Engineering vanadium dioxide nanoparticles for smart coatings: From lab to industry	2:00PM Prof. Liping Wen (Keynote) Construction of biomimetic asymmetric nanochannel membranes
2:25PM Prof. Mingzhu Li (Invited) High sensitive sensors using colloidal photonic crystal	2:25PM Dr. Yi Huang (Invited) Nanostructure engineering of porous materials for efficient separation
2:40PM Prof. Kuk-Hyun Song Influence of interstitial atoms on microstructures and mechanical properties development of selected laser melted pure Ti	2:40PM Prof. Guangru Zhang Dense ceramic catalytic membrane reactors for green chemical engineering applications
2:50PM Dr. Yahong Zhou Bring new insights from traditional polymer into energy devices construction	2:50PM Dr. Rakesh Joshi Application of graphene oxide membranes

3:00PM Afternoon Tea

Concurrent Session 3A Venue: Room State 3 Ultrafiltration and Membrane Distillation Chairs: Prof. Stephen Gray & Prof. Long Nghiem	Concurrent Session 3B Venue: Room State 1 Synthetic, Biomimetic and Bioinspired Membranes (II) Chairs: Prof. Klaus-Viktor Peinemann & Prof. Chung-Hak Lee



<p>3:20PM Prof. Stephen Gray (Keynote) Novel fluorescent biopolymer nanoparticles for UF membrane challenge testing</p>	<p>3:20PM Prof. Klaus-Viktor Peinemann (Keynote) Bioinspired membranes for organic solvent nanofiltration</p>
<p>3:45PM Prof. Long Nghiem (Keynote) A novel elastomeric styrene-butadiene-styrene membrane for membrane distillation application</p>	<p>3:45PM Prof. Chung-Hak Lee (Keynote) Origin and evolution of quorum quenching technology for biofouling control & energy savings in an MBR for wastewater treatment</p>
<p>4:10PM Dr. Zongli Xie (Invited) Activated carbon enhanced hydrophobic/hydrophilic dual-layer nanofiber composite membranes for direct contact membrane distillation</p>	<p>4:10PM Prof. Jingxia Wang (Invited) Electrowetting-induced morphological evolution of metal-organic inverse opals towards a water-lithography approach</p>
<p>4:25PM Prof. Feng Xiao Understanding the mechanism of coagulation-UF membrane filtration process</p>	<p>4:25PM Prof. Huanting Wang Ultrathin nanocomposite membranes for gas separation and water desalination</p>
<p>4:35PM Prof. Deyin Hou Dual-layer composite membrane with underwater-superoleophobic/hydrophobic asymmetric wettability for robust oil-fouling resistance in membrane distillation</p>	<p>4:40PM Prof. Chunrui Wu Preparation of PVDF super-hydrophobic membrane for MD purpose via hydroxyl induced crystallization-phase inversion</p>

4:50PM-5:30PM

Poster Session

Day 3
25 January 2018 (Thursday)

8.00AM-8.30 AM

Registration

Plenary 3

Venue: Room State 3

Chair: Prof. Vicki Chen

8:40AM Plenary Talk: Dr. Anita Hill
Architecturing nanospace for highly efficient gas separations

9:15AM Plenary Talk: Prof. Dongyuan Zhao
Functional mesoporous nanomaterials: fabrication and enhanced bioapplications

9:50AM

Morning Tea

Concurrent Session 4A

Venue: Room State 3

Innovative Energy-efficient Separation

Chairs: Prof. Vicki Chen & Prof. Lingxue Kong

Concurrent Session 4B

Venue: Room State 1

Water & Wastewater Treatment

Chairs: Prof. Mikel Duke & Prof. Hokyong Shon



10:10AM Prof. Vicki Chen (Keynote) Spatial positioning of enzymatic cascades to achieve efficient conversion and transport	10:10AM Prof. Mikel Duke (Keynote) High performance membranes in challenging applications
10:35AM Prof. Lingxue Kong (Keynote) Design, fabrication, and simulation of well aligned nanoporous structures for improved separation	10:35AM Prof. Hokyoung Shon (Keynote) Nanomaterial-incorporated osmotic membranes for water treatment and energy production
11:00AM A. Prof Matthew Hill (Invited) Nanoporous materials: enabling the translation from high performance polymers to high performance membranes	11:00AM Prof. Shengji Luan (Invited) A new model for river restoration
11:15AM Dr. Haolan Xu (Invited) Solar-thermal water treatment	11:15AM Dr. David Wang (Invited) Design of photocatalytic, rapid thermal processed inorganic membranes for water treatment
11:30AM Dr. Yi Wang Dopamine incorporated composite forward osmosis membranes with enhanced selectivities and anti-fouling properties	11:30AM Prof. Jianhua Yang Flat NaA zeolite membranes supported on Al ₂ O ₃ sheet for seawater desalination
11:40AM Prof. Zhuang Liu Ion-responsive smart gating membranes	11:40AM Dr. Dongjian Cheng Anti-wetting study of novel composite PTFE membrane with a polyurethane layer in direct contact membrane distillation for wastewater treatment

11:50AM	Lunch
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Concurrent Session 5A Venue: Room State 3 Bio-inspired Smart Materials Chairs: Prof. George Simon & Prof. Guanglei Cui	Concurrent Session 5B Venue: Room State 1 Synthetic, Biomimetic and Bioinspired Membranes (III) Chairs: Prof. Suzana Pereira Nunes & Prof. Jian Jin
1:00PM Prof. George Simon (Keynote) Forward osmosis using hydrogels as draw media	1:00PM Prof. Suzana Pereira Nunes (Keynote) Artificial channels and bioinspired porous structures based on block copolymers
1:25PM Prof. Guanglei Cui (Keynote) "Rigid-flexible coupling" solid polymer batteries: From fundamental research to deep sea power system	1:25PM Prof. Jian Jin (Keynote) Precise control of membrane structure for high-performance separation
1:50PM Prof. Yongmei Zheng (Invited) Bioinspired wettability surfaces: From design to functions	1:50PM Prof. Qianhong She (Invited) Exploring the differences between forward osmosis and reverse osmosis membrane fouling during wastewater filtration
2:05PM Dr. Dewei Chu (Invited) Bio-inspired multi-functional memory device	2:05PM Dr. Ludovic Dumeé (Invited) Fabrication of composite Ti/Ta oxides nanotubes as a photocatalytic substrate towards pesticide removal from agricultural wastewater



2:20PM Prof. Liping Heng Smart control of the droplet motion on SLIPS	2:20PM Dr. Mingmei Ding Nitrogen-doped GO/TiO ₂ nanocomposite ultrafiltration membranes for improved photocatalytic performance
2:30PM Dr. Cunming Yu Bioinspired interfacial materials for controllable and smart manipulation of gas bubbles in aqueous environment	2:30PM Dr. Saren Qi Fabrication of aquaporin-based biomimetic membrane (ABM) through spray technique
2:40PM Prof. Wei Wang Controllable microfluidic fabrication of bioinspired functional microfibers	2:40PM Dr. Yibin Wei g-C ₃ N ₄ intercalated rGO nanofiltration membranes for water treatment

2:50PM	Afternoon Tea
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Concurrent Session 6A Venue: Room State 3 Nanostructured Functional Materials Chairs: Prof. Zongping Shao & Prof. Graeme J. Millar	Concurrent Session 6B Venue: Room State 1 Innovative Energy-efficient Separation (II) and 3MT Chair & 3MT Judges: Prof. Shaomin Liu, Prof. Jianfeng Yao & Prof. Gyorgy Szekely
3:10PM Prof. Zongping Shao (Keynote) Development of functional materials from biomass for efficient energy storage, conversion and waste water treatment	3:10PM Prof. Shaomin Liu (Keynote) Palladium membrane reactors for one-step benzene hydroxylation to phenol
3:35PM Prof. Graeme J. Millar (Keynote) Energy efficient separation systems for associated water treatment in the coal seam gas industry	3:25PM Prof. Jianfeng Yao (Keynote) Graphene oxide/UiO-66-NH ₂ gas separation membranes with enhanced hydrogen separation performance
4:00PM Prof. Qunfeng Cheng (Invited) Bio-inspired graphene-based nanocomposites	3:40PM Dr. Gyorgy Szekely (Keynote) Nanofiltration-assisted sustainable pharmaceutical separations
4:15PM Prof. Fanxin Kong Role of organics on hollow fiber polypropylene membrane fouling in membrane distillation process for shale gas fracturing flowback water treatment	3:55PM Binbin Qian Synthesis of high-purity MgO nano-sheets from Victorian brown coal fly ash
4:25PM A. Prof. Nyu Wang Functional micro/nanofibers prepared by electrospinning	4:00PM Bakti Berlyanto Sedayu Semi-refined carrageenan-based film for food packaging purposes
4:35PM Dr. Huacheng Zhang Periodic gating of nanofluidic devices by chemical oscillators	4:05PM Dongyun Wu Synthesis of co-polyimide membrane with rigid CO ₂ -philic crown ether for enhancement of CO ₂ selectivities
4:45PM Dr. Ranwen Ou Hydrophilic microfiber-polymer hydrogel monolith as forward osmosis draw agent	4:10PM Hongjia Zhou Membrane enhanced on COD degrade in pulp wastewater using Cu ₂ O/H ₂ O ₂ heterogeneous Fenton process



<p>4:55PM Dr. Stefan Smith Aging control in membranes through polymer-additive interactions</p>	<p>4:15PM M. Abdul Quader Cost-optimal helium capture ratio from different natural gas sources by integrated membrane process designs</p>
<p>5:05PM Dr. Bhuvana Shanbhag Self-assembled enzyme nanoparticles for membrane based CO₂ capture</p>	<p>4:20PM Riyadh Al-Attabi The use of electrospun nanofiber membranes for air filtration application</p> <p>4:25PM Sungil Lim High power density and low fouling propensity in dual-layered nanocomposite membranes with graphene oxide and halloysite nanotubes for osmotic energy production</p> <p>4:30PM Van Huy Tran Sulfur-containing air pollutants as draw solution for fertilizer drawn forward osmosis desalination process for irrigation use.</p> <p>4:35PM Wang Zhao Nylon microfiltration membrane supported thin film nanocomposite membranes with the incorporation of graphene oxide and multiwall carbon nanotubes layer for forward osmosis applications</p> <p>4:40PM Xing Wu Improved filtration performance and antifouling property of polyethersulfone ultrafiltration membranes by blending with carboxylic acid functionalized polysulfone</p> <p>4:45PM Yun Xia Novel solar-driven continuous steam generation and salt harvesting</p> <p>4:50PM Meipeng Jian High performance nanofiltration membrane based on large area, few-layer 2D metal-organic framework nanosheets</p> <p>4:55PM Yuan Kang The mechanisms of water-ion transport in two-dimensional laminar membranes, a review</p> <p>5:00PM Yue Liu Hydrothermal generated 2D based TiO₂-C₃N₄ heterojunction for photocatalytic water disinfection</p>

5:15PM-5:45PM **Award and Closure of Conference**
Venue: Room State 3





7:00PM-10:00PM **Conference Dinner**
River Room, Level 1 Crown Towers, Crown Melbourne,
8 Whiteman Street, Southbank, VIC 3006
(Shuttle bus departs at 6:30PM from Pullman Albert Park)

Day 4
26 January 2018 (Friday) - Australia Day

Day 5
27 January 2018 (Saturday)

9:30AM-12:00PM **Campus Tour**
New Horizons Research Centre, Green Chemical Futures & Australian Synchrotron

