

# Sunday, 29 July 2018

## ARRIVAL OF DELEGATES & REGISTRATION

<b>ALL DAY</b>	ARRIVAL OF DELEGATES: SHUTTLE SERVICE FROM OR TAMBO AIRPORT TO HOTELS
<b>14:00 – 18:00</b>	Registration at the Link Area (Thamsanqa Kambule Auditorium) UNISA Science Campus
<b>18:00 – 19:00</b>	Welcome Evening

# Monday, 30 July 2018

<b>07:30 – 08:30</b>	<b>REGISTRATION</b>	Link Area (Thamsanqa Kambule Auditorium)
	<b>OPENING CEREMONY</b>	Thamsanqa Kambule Auditorium
<b>08:30 – 08:40</b>	<b>Opening Remarks by AMSIC-2 Conference Chair: Prof. Edward Nxumalo</b>	
<b>08:40 – 08:45</b>	<b>Address from AMSIC-2 President: Dr. Abdoulaye Doucouré</b>	
<b>08:45 – 09:00</b>	<b>Address from the Dean of the College of Science, Engineering and Technology (CSET), UNISA: Prof. Bhekie Mamba</b>	
<b>09:00 – 09:30</b>	<b>Address from Vice-Principal: Research, Postgraduate Studies, Innovation and Commercialisation, UNISA: Prof. Thenjiwe Meyiwa</b>	
<b>09:30 – 10:30</b>	<b>PL1: Prof. Glenn Lipscomb</b> <i>Department of Chemical Engineering, University of Toledo, USA</i> <b>Spacers for spiral wound modules</b>	
<b>10:30 – 11:00</b>	<b>TEA BREAK &amp; GROUP PHOTO</b>	Link Area

Symposium	Session 1 Desalination and Drinking Water	Session 2 Fabrication and Surface Modification	Session 3 Catalytic Membranes and Membrane Bioreactors
Venue	Thamsanqa Kambule Auditorium	Council Chambers	GJ GerwelC 3-01
Session Chair	Prof. Rong Wang	Prof. André Deratani	Dr.R Vijayakumar
11:00 – 11:30	<p><b>KN1: Prof. Raja Ben Amar</b> <i>Faculté des Sciences de Sfax, Tunisia</i></p> <p>Development of new ceramic membranes from low-cost materials: application to wastewater treatment and water desalination</p>	<p><b>KN2: Prof. Mamadou S. Diallo</b> <i>Korea Advanced Institute of Science &amp; Technology, South Korea</i></p> <p>New directions in mixed matrix membranes</p>	<p><b>KN3: Prof. Lingam Pillay</b> <i>Stellenbosch University, South Africa</i></p> <p>Energy reduction in membrane bioreactors-some novel findings</p>
11:30 – 11:50	<p><b>OP1: Dr. Ahmad Al-Sairafi</b> <i>Kuwait Institute for Scientific Research, Kuwait</i></p> <p>Hydrophobically modified PVDF nanocomposite membranes for seawater desalination via direct contact membrane distillation</p>	<p><b>OP5: Ms. Nozipho Gumbi</b> <i>University of South Africa, South Africa</i></p> <p>Fabrication of macrovoid-free polyethersulfone/sulfonated polysulfone/o-MWCNT support UF membranes with improved mechanical strength, antifouling and performance properties</p>	<p><b>OP9: Dr. Alex Kuvarega</b> <i>University of South Africa, South Africa</i></p> <p>Catalytic mixed matrix PVDF membranes based on in-situ generated PAMAM dendrimer microparticles</p>
11:50 – 12:10	<p><b>OP2: Ms. Mokgadi F Bopape</b> <i>Tshwane University of Technology, South Africa</i></p> <p>Modification of polyether sulfone-based membranes with novel nanocellulose crystal powder NCC for purification of potable water</p>	<p><b>OP6: Prof. Yuzhong Zhang</b> <i>Tianjin Polytechnic University, China</i></p> <p>Development of novel membranes</p>	<p><b>OP10: Ms. Koketjo M Shaku</b> <i>University of Johannesburg, South Africa</i></p> <p>Photocatalytic membrane embedded on hyperbranched polyethyleneimine host and bismuth vanadate nanoparticles for the removal of organic pollutants in water</p>
12:10 – 12:30	<p><b>OP3: Mr. Machodi Mathaba</b> <i>University of Johannesburg, South Africa</i></p> <p>Effect of chitosan on the heavy metal removal efficiency of chitosan-modified polyether sulfone (PES) membrane during treatment of acid mine drainage</p>	<p><b>OP7: Ms. Charmaine Tshangana</b> <i>University of South Africa, South Africa</i></p> <p>Study and synthesis of modified electrospun membranes for application in novel solar-driven water purification system.</p>	<p><b>OP11: Dr. Abaynesh Gebreyohannes</b> <i>KU Leuven, Belgium</i></p> <p>Membrane bioreactors: in microalgae harvesting, in-situ fouling degradation and bioethanol production</p>
12:30 – 12:50	<p><b>OP4: Dr. Rajesh Kumar</b> <i>Kuwait Institute for Scientific Research, Kuwait</i></p> <p>A pilot scale study of forward osmosis desalination system for Arabian Gulf seawater desalination</p>	<p><b>OP8: Ms. Kate Kotlhao</b> <i>University of Johannesburg, South Africa</i></p> <p>Evaluation of Ag-ZnO modified polyamide thin-film composite membranes for removal of 2,4-dichlorophenol from water</p>	<p><b>OP12: Mr. Lwazi Ndlwana</b> <i>MINTEK/University of Johannesburg, South Africa</i></p> <p>Towards Pd@Fe@HPEI/PMAA-PES and Pd@FeAg@HPEI/PMAA-PES nano-multicatalytic composite membranes for the rapid degradation of methyl orange in water</p>
12: 50 – 14: 00	<b>LUNCH BREAK</b>		Exhibition Hall

<b>Session Chair</b>	<b>Prof. Raja Ben Amar</b>		Thamsanqa Kambule Auditorium
<b>14:00 – 15:00</b>	<b>PL2: Prof. Jas Pal Badyal</b> <i>Department of Chemistry, Durham University, UK</i> <b>Scalable smart surfaces for water harvesting and purification</b>		
<b>Symposium</b>	<b>Session 4</b> Desalination and Drinking Water	<b>Session 5</b> Fabrication and Modification	<b>Session 6</b> R&D, Composites and Hybrid and Integrated Processes
<b>Venue</b>	Thamsanqa Kambule Auditorium	Council Chambers	GJ Gerwel C3-01
<b>Session Chair</b>	<b>Prof. Raja Ben Amar</b>	<b>Prof. Mamadou S. Diallo</b>	<b>Dr. Richard Moutloali</b>
<b>15:00 – 15:30</b>	<b>IN1: Dr. André Deratani</b> <i>Université de Montpellier, France</i> Desalination performance of PV powered stand-alone OSMOSUN® unit under intermittent operating conditions	<b>OP16: Prof. Titus Msagati</b> <i>Nanotechnology and Water Sustainability Research Unit, University of South Africa, South Africa</i> Novel MWCNT-PVDF membranes for desalination by membrane distillation: Effect of solvent composition	<b>IN2: Prof. Chris Buckley</b> <i>Pollution Research Group, University of KwaZulu-Natal, South Africa</i> Implementation of membrane R&D - A retrospective view
<b>15:30 – 15:50</b>	<b>OP13: Mr. Christopher Chukwuati</b> <i>University of Johannesburg, South Africa</i> The effect of PEI component on PES/GO/PEI/Ag NPS nanocomposite membranes for the treatment of organic dyes and removal of heavy metals in water	<b>OP17: Mr. Simanye Sam</b> <i>University of Johannesburg, South Africa</i> Cadmium(2) removal from water using carbon nanodots embedded on polyethersulfone membrane and detection using anodic stripping voltammetry	<b>OP20: Sina F Torbati</b> <i>Tarbiat Modares University, Iran</i> Investigations of the effect of incorporation of TiO <sub>2</sub> on the performance of PES ultrafiltration membranes for oily water treatment
<b>15:50 – 16:10</b>	<b>OP14: Jingshi Wang</b> <i>Deakin University, Australia</i> Ultra-thin semi-permeable polymer alloy membranes for low cost desalination	<b>OP18: Mr. Sinethemba Xabela</b> <i>University of Johannesburg, South Africa</i> Grafting of PSBMA on graphene oxide surface for modification of cellulose acetate membranes for water treatment	<b>OP21: Mr. Nyiko M Chauke</b> <i>University of Johannesburg, South Africa</i> Intrinsic features of ZSM-22 zeolite/polyethersulfone composite as support membrane
<b>16:10–16:30</b>	<b>OP15: Dr. Machawe Motsa</b> <i>University of South Africa, South Africa</i> Surface modification of low pressure NF membranes via LBL-assembly: characterization and application in brackish water treatment	<b>OP19: Ms. Azile Nqombolo</b> <i>University of Johannesburg, South Africa</i> Poly(m-phenyleneisophthalamide) ultrafiltration membrane incorporating graphene oxide-metal organic framework with improved water flux and antifouling properties	<b>OP22: Dr. Gomotsegang Molelekwa</b> <i>Tshwane University of Technology, South Africa</i> Uptake of membrane technology by the public sector in South Africa
<b>16:30 – 17:00</b>	<b>TEA BREAK</b>		Link Area
<b>17:00 – 18:00</b>	<b>POSTER SESSION</b>		Exhibition Hall
<b>18:00 – 20:00</b>	<b>Welcome Cocktail</b>		<b>Struben venue, Roodepoort Theatre</b>

# Tuesday, 31 July 2018

07:30 – 08:00	ARRIVAL		
08:00 – 08:10	ANNOUNCEMENTS		Thamsanqa Kambule Auditorium
Session Chair	Prof. Lingam Pillay		
08:10 – 09:10	<b>PL3: Prof. Dr. Mihail Barboiu</b> <i>Institut Européen des Membranes, Université de Montpellier</i> <b>Rubbery organic frameworks-molecular control of CO<sub>2</sub> capture with elastomeric membranes</b>		
Symposium	Session 7 Ultra/Microfiltration	Session 8 Membrane Material Characterization	Session 9 Air Filtration and Gas Separation
Venue	Council Chambers	GJ Gerwel 301	GJ Gerwel 06-085
Session Chair	Prof. Lingam Pillay	Mr. Simon Sibiya	Dr. Rachida Chemini
09:10 – 09:40	<b>KN4: Dr. Abdoulaye Doucouré</b> <i>Hollingsworth &amp; Vose Company, USA</i>  A Roadmap for advancing the field of membrane and filtration sciences in Africa	<b>KN5: Prof. Mathias Ulbricht</b> <i>University of Duisburg-Essen, Germany</i>  Increasing separation performance by integration of tailored functional polymeric layers in established filtration membranes and modules	<b>IN3: Dr. Richard Moutloali</b> <i>DST/MINTEK Nanotechnology Innovation Center – UJ Water Research Node, South Africa</i> Modulating membrane selectivity: A comparative study
09:40 – 10:00	<b>OP23: Ms. Thollwana Makhetha</b> <i>University of Johannesburg, South Africa</i>  Ultrafiltration Membrane Composites Tailored by ZIF@GO with highly improved organic dye rejection performances	<b>OP25: Mr. Itumeleng Block</b> <i>Anton Paar, South Africa</i>  Use of zeta potential measurement to monitoring membrane fouling and enhance membrane separation performance	<b>OP27: Prof. Michael Daramola</b> <i>University of Witwatersrand, South Africa</i>  Nanocomposite sodalite/ceramic membrane for pre-combustion CO <sub>2</sub> capture from integrated gasification combined cycle (IGCC)
10:00 – 10:20	<b>OP24: Dr. Sana Gassara</b> <i>Université de Montpellier, France</i>  Physicochemical properties monitoring of UF hollow fiber membrane during fabrication and aging	<b>OP26: Mr. Majid Jahdi</b> <i>University of South Africa, South Africa</i>  Photocatalytic TiO <sub>2</sub> co-doped nanomaterials for water treatment applications	<b>OP28: Dr. Neil Stacey</b> <i>Institute for the Development of Energy for African Sustainability (IDEAS), UNISA, South Africa</i>  Reduction in greenhouse water usage through inlet CO <sub>2</sub> enrichment
10:20 – 10:50	TEA BREAK		Link Area

Symposium	Session 10 Hybrid and Integrated Processes	Session 11 Nanotechnology and Membranes / Membrane Modelling	Session 12 Workshop on Air-filtration
Venue	Council Chambers	GJ Gerwel301	GJ Gerwel 06-085
Session Chair	Prof. Mathias Ulbricht	Prof. Jas Pal Badyal	Dr. Abdoulaye Doucouré and Prof Sabelo Mhlanga
10:50 – 11:10	<b>OP29: Mr. Simon M Sibiyi</b> <i>Rand Water, South Africa</i>  Ultrafiltration for potable water production-pilot plant experiences at Rand Water	<b>OP34: Dr. Neil Stacey</b> <i>Institute for the Development of Energy for African Sustainability (IDEAS), UNISA.</i>  Novel graphical design methods membrane separations systems	<b>OP39: Xin Feng / Dr. R Vijayakumar</b> <i>China Academy of Building Research, China</i>  A novel long-life air cleaning unit and its continuous operation performance analysis
11:10 – 11:30	<b>OP30: Dr. Ludovic Dumée</b> <i>Deakin University, Australia</i>  Ultra-thin and high adsorption capacity composite nanofiber membranes for virus removal	<b>OP35: Mr. Sakhile Dube</b> <i>University of Johannesburg, South Africa</i>  Synthesis and characterization of hyperbranched polyethyleneimine multiwalled carbon nanotube incorporated with Fe-Cu bimetallic nanoparticles for water treatment	<b>Workshop on Air-filtration</b>  <b>Dr. R Vijayakumar</b>  Introduction to air filters
11:30 – 11:50	<b>OP31: Prof. Efrem Curcio</b> <i>University of Calabria, Italy</i>  Salinity gradient power generation by reverse electrodialysis: System performance using natural feed streams	<b>OP36: Prof. Seyed S Hosseini</b> <i>Tarbiat Modares University, Iran</i>  Improvement in efficiency of electroplating wastewater treatment through development and modification of PAN nanofiltration membranes	
11:50 – 12:10	<b>OP32: Prof. Lingam Pillay</b> <i>University of Stellenbosch, South Africa</i>  Low energy, low maintenance membrane systems for developing economies-recent developments	<b>OP37: Ms. Ngozi Enemuo</b> <i>University of the Witwatersrand, South Africa</i>  Nickel and cobalt-modified nanocomposite polysulfone membranes and their leaching studies	
12:10 – 12:30	<b>OP33: Dr. Bhekani Mbuli</b> <i>University of Johannesburg, South Africa</i>  Adsorption-desorption of Pb (II) heavy metal ions from water using antifouling pH-responsive PA-TFC membranes	<b>OP38: Dr Michael Daramola</b> <i>University of the Witwatersrand, South Africa</i>  Synthesis and application of carbon nanotube-infused polymer membrane (CNT/PSF/PVA) in the treatment of phenol-containing refinery wastewater	
12:30 – 13:40	<b>LUNCH BREAK</b>		Exhibition Hall

<b>Session Chair</b>	<b>Prof. Titus Msagati</b>		Thamsanqa Kambule Auditorium
<b>13:40 – 14:40</b>	<b>PL4: Prof. Jianxin Li</b> <i>State Key Laboratory of Separation Membranes and Membrane Processes, School of Materials Science and Engineering, Tianjin Polytechnic University, China</i> <b>Recent developments on membranes for water treatment and industrial separation</b>		
<b>Symposium</b>	<b>Session 13 Modelling and Simulation</b>	<b>Session 14 Air Filtration, Gas Separation and Solar Evaporation</b>	<b>Session 12 Workshop on Air-filtration</b>
<b>Venue</b>	Council Chambers	GJ Gerwel 301	GJ Gerwel 06-085
<b>Session Chair</b>	<b>Prof. Dr. Mihail Barboiu</b>	<b>Dr. Sana Gassara</b>	<b>Dr. Abdoulaye Doucouré and Prof Sabelo Mhlanga</b>
<b>14:40 – 15:00</b>	<b>OP40: Dr. Amos Adeniyi</b> <i>Tshwane University of Technology, South Africa</i> Predictic the fouling tendency of RO/NF membranes using fractal analysis and membrane autopsy	<b>OP43: Ing. Katerina Setnickova</b> <i>Institute of Chemical Process Fundamentals of the Cas, v.v.i, Czech Republic</i> Novel membranes with ordered nanowell structure for gas separation	<b>Workshop continues</b>
<b>15:00 – 15:20</b>	<b>OP41: Dr. Rachida Chemini</b> <i>University of Science and Technology Houari Boumediene, Algeria</i> Simulation of water treatment plants in the petroleum industry	<b>OP44: Mr. Javad A Dehkordi</b> <i>Tarbiat Modares University, Iran</i> An investigation on the important role of porous support layer in the performance of gas separation membrane modules	
<b>15:20 – 15:40</b>	<b>OP42: Prof. Alexander Anim-Mensah</b> <i>Illinois Tool Works, USA</i> Relating key parameters in a membrane separation system and performance prediction ( <i>via Video Conference</i> )	<b>OP45: Ms. Ellen Kwenda</b> <i>University of South Africa, South Africa</i> Carbon sphere-assisted solar evaporation of urine for the recovery of nutrients	
<b>15:40 – 16:00</b>	<b>KN6: Prof. Woei-Jye J Lau</b> <i>University Teknologi Malaysia, Malaysia</i> Development of thin-film nanocomposite (TFN) membrane for water applications	<b>OP46: Ms. Palesa Menze</b> <i>Air Products South Africa, South Africa</i> Air Products in South Africa: Fundamentals and products	
<b>16:00 – 16:30</b>	<b>TEA BREAK</b>		
<b>16:30</b>	<b>TRANSFERS TO HOTELS</b>		
<b>18:00</b>	<b>TRANSFERS TO CONFERENCE DINNER</b>		
<b>18:00– 22: 00</b>	<b>CONFERENCE GALA DINNER</b>		Moyo Zoo Lake

# Wednesday, 1 August 2018

## CLOSING CEREMONY

Thamsanqa Kambule Auditorium

07:30 – 08:00	ARRIVAL
08:00 – 08:10	Announcements
Session Chair	Prof. Edward Nxumalo
08:10 – 09:10	<b>PL5: Prof. Rong Wang</b> <i>School of Civil and Environmental Engineering, Nanyang Technological University, Singapore</i> <b>Development of novel membranes for desalination and water reuse</b>
09:10 – 09:30	<b>Dr. Lueta De Kock</b> <i>Nanotechnology and water Sustainability Research Unit, University of South Africa, South Africa</i>
09:30 – 09:40	Conference Awards
09:40 – 09:50	<b>CLOSING REMARKS: AMSIC President and Conference Chair</b>
09:50 – 10:20	UNISA Facility Tour
10:20 – 10:50	TEA BREAK
10:50	EXCURSIONS AND DEPARTURE

Note: **PL** – Plenary Lecture by Invited Speaker; **KN** – Keynote by Invited Speaker; **IN** – Invited Speaker; **OP** – Oral Presentation