

Full Program (Day 1)

Time		4 th July 2022 (Day 1)															
Venue: TCT																	
Registration																	
Welcome and Opening Rong WANG & Tay Hour CHONG ANG & MEMSIS																	
Opening Speech by Guest of Honour Cher Ming FANG Chief Engineering & Technology Officer PUB, Singapore's National Water Agency																	
Group Photo Taking																	
Coffee Break																	
Plenary Session Session Chair: Rong WANG & Song D. NGHEM																	
Plenary Lecture 1 Nonstructured and functionalized membranes for water and aerosol applications Dibakar BHATTACHARYYA University of Kentucky, USA																	
Plenary Lecture 2 Membrane bioreactors - what's next? Faisal HAI University of Wollongong, Australia																	
Break																	
Venue: TCT		Venue: L7B		Venue: L77		Online (L715) - Lai SHI		Online (L716) - Yining WANG		Online (L717) - Huijuan XU		Online (L718) - Daniel NG					
Special Session in Honour of Prof. Neal Chong Session Chair: Rong WANG & Sui ZHANG		Session A: Bio-Separation and Application Session Chair: Hiroto OKUYAMA & Chun Heng LOH		Session B: Desalination and Water Treatment I Session Chair: Gwo Sung LUI & Yan ZHAO		Online Session OA: Gas Separation & CO ₂ Capture I Session Chair: YI LIU & EKI KAMUO		Online Session OB: Membrane Fouling & Degradation I Session Chair: Le HAN & Linyan YANG		Online Session OC: Membrane Bioreactor and Wastewater Treatment Session Chair: Yuan LIAO & Justin Chun Te LIN		Online Session OD: Novel Membrane I Session Chair: Wangji FANG & Daniel NG					
11:20 - 11:45		Keynote Lecture A Hydrogel and emulsion of functionalized hollow fiber as catalyst membrane: Fundamental research to commercialization Ravi WICKRAMARAJU University of Arkansas, USA		Keynote Lecture B Industrial application of spin-coated graphene oxide membrane Peter Vlieg Netherlands, Australia		Keynote Lecture OA Six-Dim. Transport Properties of 2D of Membrane with Superior and Proton-Resistant CMAC/PEI Separation Application Yi Liu Dalian University of Technology, China		Keynote Lecture OB Internal fouling of dense and porous membrane obtained via electrochemical deposition Le Han Chongqing University, China		Keynote Lecture OC Mitigation of membrane fouling via immobilizing Au-NiO on composite membrane support for extraction membrane bioreactor Yuan Liao Nankai University, China		Keynote Lecture OD Hydrophilic microcapsule polymer membranes with high permeability for gas and molecular separations Wangji Fang Surfoux Institute of Nano-Tech and Nano-Biotech, China					
11:45 - 12:05		SPO1 Keynote Lecture (Online) Committee of The Film Composite Hollow Fiber Membrane with Surface Permeance Performance Yan WANG Nanchang University of Science & Technology, China		Oral A1 A multi-layer-impregnated membrane for selective capture of antimicrobial Leticia DAVIS Wageningen University, United Arab Emirates		Oral B1 Thermo-responsive nanocomposite membranes for water desalination in seawater desalination plants for high salinity water treatment Yan Xu Nanchang Technological University, Singapore		Oral OA1 Facile design engineering of multi-dimensional frameworks for seawater desalination membrane separation application Hengxing An Sapung University, South Korea		Oral OB1 Ultrasoft membranes with bioinspired patterns for enhanced antifouling resistance Chao Han YOD Sapung University, South Korea		Oral OC1 Flexibility of polymeric bioactive as fouled media for membrane bioreactor membrane fouling treatment Minsook Kim Hwa University, South Korea		Oral OD1 Polymeric/hollow fiber composite ultrafiltration membrane prepared on porous support for organic dyes removal Alian DSGATE Hwaik University, Cambodia, Myanmar			
12:05 - 12:25		SPO2 2D membrane for molecular separations Cheng Rong WANG & Neal CHONG		Oral A2 Stitch-imposed membrane with grafted polymer for protein separation Pengfei GAO Eindhoven University of Technology, Belgium		Oral B2 Analysis of water removal from filtration with the characteristic of hydrogel membrane involving the multilayer membrane structure Hiroyuki KAWAOKA Aichi Kansai Medical, Japan		Oral OA2 Three-armed poly(ethylene glycol) network based on ion membrane for CO ₂ separation Seung-Ho Lee Kobe University, Japan		Oral OB2 Impact of physical, chemical and biological fouling on membrane separation performance Song Li University of Toronto, Canada		Oral OC2 Biofouling prevention of CO ₂ membranes in wastewater treatment with micro-robotic particle capture from the cost saving Song Li Georgia Institute of Advanced Technology, China		Oral OD2 Thermally cross-linked ultra-thin carbon membranes for particulate removal and enhanced permeability Hao Ling TO Singapore University, South Korea			
12:25 - 12:45		SPO3 Tailoring green membranes for efficient molecular separations Wu Fen YONG Korea University Malaysia, Malaysia		Oral A3 Membrane-based biosensor using solution permeation: Towards high sensitive and rapid diagnosis Hiroshi OKUMURA Tokyo Institute of Technology, Japan		Oral B3 Influence of water transport on conductivity-remotely-tuned gel membranes selectively in electrodes Jiang LI Nanchang Technological University, Singapore		Oral OA3 Tailored architecture of carbon membrane by varying polymer composition for improved gas separation performance and enhanced electro-thermocharacterization Yu Ting LI National Chung Cheng University, Taiwan		Oral OB3 Degradation of polymeric membranes under disinfection conditions: Changes of physicochemical properties and physical performance Liqun WANG East China University of Science and Technology, China		Oral OC3 Membrane fouling and regeneration analysis of a full-scale membrane bioreactor for the treatment of domestic wastewater Justin Chan Te LIN Rong Chiu University, Taiwan		Oral OD3 Enhancing membrane performance of flat sheet membrane by embedding TiO ₂ /ZnO composite for physical adsorption in aqueous solution membrane separation process Mahmoud SAMI Northwestern Polytechnical University, China			
12:45 - 14:00 Lunch Break																	
Venue: TCT		Venue: L7B		Venue: L77		Venue: L74		Online (L715) - Lai SHI		Online (L716) - Yining WANG		Online (L717) - Huijuan XU		Online (L718) - Daniel NG			
Special Session in Honour of Prof. Neal Chong Session Chair: Wai Fen YONG & Jian ZUO		Session C: Membrane Distillation Session Chair: Eun Tae YANG & Zhan LI		Session D: Reverse Osmosis/Fouling and Demulsification Session Chair: Zhe YANG & Jing Yi CHONG		Session E: Ion Exchange Membrane and Process Session Chair: Xing YANG & Bing WU		Online Session OE: Gas Separation & CO ₂ Capture II Session Chair: JONG HAK KIM & Hui-Hsin TSENG		Online Session OF: Membrane Fouling & Degradation II Session Chair: Kazuki AKAMATSU & Keizo NARAGAWA		Online Session OG: Desalination and Water Treatment I Session Chair: Tian LI & Myoung Jun PARK		Online Session OH: Novel Membrane II Session Chair: Ying-Ling LIU & Xiaohu REN			
14:00 - 14:25		SPO4 Keynote Lecture Chemical separations in membrane James JIANG National University of Singapore, Singapore		Keynote Lecture C Evaluation of integrated electro-transport membrane and direct contact membrane distillation process for produced water treatment Ravi WICKRAMARAJU University of Arkansas, USA		Keynote Lecture D Highly robust polyamide composite membrane process membranes for challenging applications Jiang Yi CHONG Nanchang Technological University, Singapore		Keynote Lecture E High throughput ion exchange membrane characterization in downstream bioprocessing Xing YANG RWTH Aachen, Belgium		Keynote Lecture OF Constructing highly porous functionalized transport and selective carbon membrane for separation application Hai-Hsin TSENG National Chung Cheng University, Taiwan		Keynote Lecture OG Development of novel PVP Membranes blended with PEG/PVP hydrophilic copolymer as support for membrane fouling mitigation Tian Li Korea University, Japan		Keynote Lecture OH A pilot study of membrane for high quality drinking water production Ying-Ling Liu National Tsing Hua University, Taiwan			
14:25 - 14:45		SPO5 PVP membrane composite for membrane recovery from wastewater treatment Xiao LI Nanyang Technological University, Singapore		Oral C1 Performance improvement in membrane distillation using a 2D porous carbon membrane electrodeposition Sungsoo CHUNG Pusan National University, South Korea		Oral D1 Development of CO ₂ permeable hollow fiber membranes for membrane-based carbon capture and post-combustion CO ₂ separation Sungsoo CHUNG Kobe University, Japan		Oral E1 Development of highly stable poly(amide-imine) ion exchange membrane containing hydrophilic groups for fuel cell Do Young KIM Gyeongsang National University, South Korea		Oral OE1 GTA-280 mixed matrix membrane incorporation of CO ₂ permeable mixed matrix membrane for ethylene/propylene separation S. S. CHEN Nanchang Tech University, China		Oral OF1 Allylic-like composite membrane with superior antifouling and mechanical strength for PDA/peptide Yuan Tian Nankai University, China		Oral OG1 Collaborative design of porous membrane for active groundwater filtration Sungsoo CHUNG Zhejiang University of Technology, China		Oral OH1 Microfluidic integrated design and preparation of glucose-responsive membrane for protein separation Zhe ZHU Zhejiang University of Technology, China	
14:45 - 15:05		SPO6 Thin-film membrane distillation for a zero-liquid discharge wastewater desalination Jian ZUO Singapore Institute of Technology, Singapore		Oral C2 Facile hydrophilic modification of hydrophilic membrane by zwitterionic coating for direct contact membrane distillation Yuan ZHANG Nanchang Technological University, Singapore		Oral D2 High recovery, energy-efficient membrane distillation using highly permeable and anti-fouling hollow fiber membrane module for heat salt by-pilot Feng LI National University of Singapore, Singapore		Oral E2 Low-cost high assembly of polyimide for the fabrication of non-woven selective carbon exchange membrane Patrick Marc BURA RWTH Aachen, Belgium		Oral OE2 Effective functionalization of porous polymer films to enhance CO ₂ /N ₂ separation performance of mixed matrix membrane Yuehan LI Korea Advanced Institute of Science and Technology, South Korea		Oral OF2 Subsequent functionalized membrane reactor to understand organic fouling and fouling control for protein separation Minsook ALAM Inha University, South Korea		Oral OG2 Gas-actuated TFC coated polymer membranes for membrane distillation Nai-Yi WANG National Chung Cheng University, Taiwan		Oral OH2 Porous Membranes of Hydrogel and Graphene Oxide Membranes for Vacuum Membrane Distillation Chen-Chi LIU Ming Chi University of Technology, Taiwan	
15:05 - 15:25		SPO7 Microstructural membrane engineering for green energy applications Ali AKINCI National University of Singapore, Singapore		Oral C3 Performance enhancement of PVP membrane by a facile coating method for reverse osmosis membrane distillation Zhan LI Kobe University, Japan		Oral D3 Integrated thin-film non-woven membrane (TFM) for highly efficient desalination and water reuse Zhe YANG The University of Hong Kong, Hong Kong		Oral E3 Homogeneous anion exchange membranes for ionic and non-ionic electrodes Yoshitaka YOSHIDA Yokohama National University, Japan		Oral OE3 RAM/TGA TFC mixed matrix membranes for enhanced CO ₂ /N ₂ separation performance Tian-Hao TAO National Chung Cheng University, Taiwan		Oral OF3 "One-pot" synthesis of zwitterionic poly(amide-imine)s for efficient fouling mitigation membrane with enhanced fouling for water desalination Lichuan HU Sun Yat-sen University, China		Oral OG3 Porous-activated Carbon Fabrication of Graphene Oxide Membranes with Antifouling Property for Membrane Distillation Haimin CHEN Nanchang Tech University, China		Oral OH3 Construction of microstructure of network fiber as porous membrane for water separation Haoxing LIU Kobe University, Japan	
15:25 - 15:45		SPO8 Novel PVP membrane for water product energy harvesting: Towards zero and/or slight addition of salt and non-molecule Gulistan CHAKRABARTY IITM Chennai, Singapore		Oral C4 Surface modification by UV-crossed organ-solvent monomer radical polymerization of PVP for enhanced membrane distillation Mahdi SHARROOF Victoria University, Australia		Oral D4 New insights of the role of substrate properties and AGP-membrane combinations in tracking the performance of seawater reverse osmosis (SWRO) membranes Yan ZHAO Nanchang Technological University, Singapore		Oral E4 Efficient poly(ethylene oxide) electrochromic nitrogen recovery efficiency demonstrated in pilot scale Mariana RODRIGUES Wageningen, The Netherlands		Oral OE4 Ladder-structured poly(amide-imine)s/graphene-based carbon molecular sieve membranes for gas separation In-Ho SHIN Sejong University, South Korea		Oral OF4 Ladder-structured CMAC composite membranes with photocatalytic antifouling property for water treatment Keizo NARAGAWA Kobe University, Japan		Oral OG4 Fabrication of thin film composite polyamide membrane for water purification via high pressure of membrane and solvent ratio Myoung Jun PARK University of Technology Sydney, Australia		Oral OH4 Micro-mesoporous Ag-SiO ₂ modified ultra-thin membrane for desalination Xiaohu REN Chongqing University, China	
15:45 - 16:15 Coffee Break																	
Venue: TCT																	
Plenary Session Session Chair: CHUNG LI & TAKA YAMAGUCHI																	
Plenary Lecture 3 (Online) Two-dimensional MXene membranes for separation Haihui WANG Tsinghua University, China																	
Plenary Lecture 4 Molecular transport phenomena and development of micro porous ceramic membranes Tomoyuki YOSHIOKA Kobe University, Japan																	
17:45 Walk to The Hive																	
18:00 - 19:30 Welcome Reception Venue: The Hive, Level 3, NTU																	

Time zone is Singapore Time (SGT), +8 GMT, +8 UTC

Full Program (Day 2)

5 th July 2022 (Day 2)								
Venue: TCT								
Penalty Session Session Chair: Sang Yong NAM & Chuyang TANG								
08:40 - 09:20	Penalty Lecture 5 Moving membranes forward in desalination Seungwan HONG Korea University, South Korea							
09:20 - 10:00	Penalty Lecture 6 (Online) Bio-inspired zwitterionic membranes: Molecular design and medical applications Chung Yuan Christian University, Taiwan							
10:00 - 10:30	Coffee Break							
Venue: TCT	Venue: LT8	Venue: LT7	Venue: LT4	Online (LT15) - Lei SHI	Online (LT16) - Yining WANG	Online (LT17) - Huijun XU	Online (LT18) - Daniel NG	
Session F: Membrane Synthesis & Fabrication I Session Chair: Shuwen GONG & Mahmoud ABDUL HAMID	Session G: Desalination and Water Treatment II Session Chair: Qianhong SHE & Yi LI	Session H: Membrane Fouling I Session Chair: Vitally GITIS & Tao HUIA	Session I: Gas Separation & CO ₂ Capture I Session Chair: Tae-Hyun BAE & Xu JIANG	Online Special Session in Honour of Prof. Neal Chung Session Chair: Lu SHAO & Jingqiao LIU	Online Session OI: Organic Solvent Separation Session Chair: Hong WU & Yanqiu ZHANG	Online Session OJ: Membrane Application I Session Chair: Kuo-Lun TUNG & Wenzhong MA	Online Session OK: Novel Membrane III Session Chair: Jun-Tai CHEN & Ya-Kai LIN	
10:30 - 10:55	Keynote Lecture F Introducing thin film nanocomposite membranes: Mechanisms, separation performance, applications, and design criteria Chuyang TANG The University of Hong Kong, Hong Kong	Keynote Lecture G State-of-the-art and future research progress for thin energy desalination Qianhong SHE Nanyang Technological University, Singapore	Keynote Lecture H Mitigation of membrane fouling with hierarchical morphology on dielectric and piezoelectric properties Vitally GITIS Ben-Gurion University of the Negev, Israel	Keynote Lecture I Engineered Aggregated porous polymers for advanced CO ₂ separation membranes Tae-Hyun BAE Korea Advanced Institute of Science & Technology, Korea	OSPO1 Keynote Lecture Porous-Derived embedded separator membranes Lu SHAO Wuhan Institute of Technology, China	Keynote Lecture OI Gradient organic framework-based ultrathin nanofiltration membranes Hong WU Tsinghua University, China	Keynote Lecture OJ Reducing ultrathin silica membranes with straight-through channels for high-performance nanofiltration Kuo-Lun TUNG National Taiwan University, Taiwan	Keynote Lecture OK Photocurable Composite Polymer Electrolytes Using Graphene-Incorporated Nanoporous Membranes Jun-Tai CHEN National Tsing Hua Univ, Taipei, Taiwan, Taiwan
10:55 - 11:15	Oral F1 Development of a composite membrane for water vapor and VOC separation Hyungho SHIM Korea Institute of Energy Research, South Korea	Oral G1 Hollow fiber membrane module for high-flux water Yuhan YIM Korea Institute of Energy Research, South Korea	Oral H1 Anti-fouling polymeric PVD membrane: Effect of morphology on dielectric and piezoelectric properties Yi-Ping SU Nanyang Technological University, Singapore	Oral I1 Polymer/flow PPSO copolymer based membranes: Effect of chemical structure and membrane structure on gas permeation and separation Fan FENG National University of Singapore, Singapore	OSPO2 Sieve 2D COF membrane for molecular separation Jingqiao LIU University of Science and Technology of China, China	Oral OI1 High flux water vapor PVD membranes for organic solvent vapor separation Huijun XU Kagoshima University, Japan	Oral OJ1 Five-layered MOF-5 membrane for high-flux and high-selectivity water vapor separation Rongqing LI Shanghai Advanced Research Institute, China	Oral OK1 Study on the construction and separation performance of ion-exchange membranes for CO ₂ capture & E-oxidation Huan-Huan WU Zhejiang University of Technology, China
11:15 - 11:35	Oral F2 Gradient organic framework-based nanofiltration membranes for enhancing molecular sieving capability Yungho SHIM Korea Institute of Energy Research, South Korea	Oral G2 A diffusion nanofiltration membrane assisted ZIF-8 MOF process for seawater desalination and brine management Yuhan YIM Korea Institute of Energy Research, South Korea	Oral H2 Electrical impedance spectroscopy for non-destructive detection of wetting, fouling, and scaling in membrane distillation Yuhua HONG Indian Institute of Technology, India	Oral I2 Comparative life cycle assessment on metal-organic frameworks for CO ₂ capture Jingqiao LIU Hubei University, China	OSPO3 Fabrication of PVD-CO ₂ MOF hybrid membrane for gas separation Jingqiao LIU Hubei University, China	Oral OI2 Membrane-based carbon dioxide separation using graphene-like membrane with enhanced separation performance by chemically introducing the inorganic polymer Huijun XU Kagoshima University, Japan	Oral OJ2 Advanced substrate based thin film composite nanofiltration membrane with improved separation performance by chemically introducing the inorganic polymer Rongqing LI Shanghai Advanced Research Institute, China	Oral OK2 High flux composite CO ₂ composite membrane fabricated by using nanofiber substrate Jun-Tai CHEN National Tsing Hua University, Taiwan
11:35 - 11:55	Oral F3 Scale-up of graphene-based functionalized separator membrane for high-flux water vapor and VOC separation Chuyang TANG The University of Hong Kong, Hong Kong	Oral G3 Analysis and optimization of membrane according to membrane area and transport cost of thin channel Sun-Ahn Kyungpook National University, South Korea	Oral H3 Fouling mitigation of membrane module with wetting-resistant polymer for antifouling Yuhan YIM Korea Institute of Energy Research, South Korea	Oral I3 Highly crosslinked functional polymer molecular sieve membranes for efficient CO ₂ separation Huijun XU Korea Advanced Institute of Science and Technology, South Korea	OSPO4 Genetically derived porous membranes for molecular separation Jingqiao LIU Wuhan Institute of Technology, China	Oral OI3 Highly porous polymer-based nanofiltration membrane using a polyimide support for organic solvent separation Chao WANG University of Technology Sydney, Australia	Oral OJ3 Novel positively charged polyamide nanofiltration membrane for efficient nanofiltration separation Huijun XU Korea University, South Korea	Oral OK3 LTA quality membrane with high desalination performance for high-flux water vapor and VOC separation Yungho SHIM Korea Institute of Energy Research, South Korea
11:55 - 12:15	Oral F4 Mitigation of the permeability of membrane modules for practical molecular sieving in organic solvent Mahmoud ABDUL HAMID King Fahd University of Petroleum & Minerals, Saudi Arabia	Oral G4 The potential of gel-based membrane assisted water desalination (GAWD) for separation concentrated mineral streams (MSO) process for cost-effective high recovery desalination Yuhan YIM Korea Institute of Energy Research, South Korea	Oral H4 Organic membrane module for water vapor and VOC separation: From lab prototype to pilot plant Tae-Hyun BAE Korea Advanced Institute of Science and Technology, South Korea	Oral I4 Sieve coating - A facile way to mitigate long-range thin film composite membranes toward gas separation Jingqiao LIU Wuhan Institute of Technology, China	OSPO5 Catalytic membrane reactor for the synthesis of bio-ethanol Kuo-Lun TUNG National Taiwan University, Taiwan	Oral OI4 Development of flexible composite polymer coating membrane for organic solvent separation Yungho SHIM Korea University, South Korea	Oral OJ4 Solvent resistant polyamide composite membrane prepared by interfacial polymerization for nanofiltration desalination Wenzhong MA Changchun University, China	Oral OK4 Effect of surface quality on the membrane fouling mechanism of cellulose acetate membrane Huijun XU Korea University, South Korea
12:15 - 12:35	Oral F5 (Online) Fouling mitigation of polyethersulfone/ultrathin polyamide-imide membrane through surface plasma-treated TiO ₂ -CNT nanofibers Mahmoud ABDUL HAMID University of Al-Qadisiyah, Iraq	Oral G5 MOF-5 supported on polyimide membrane for high-flux water vapor and VOC separation Yuhan YIM Korea Institute of Energy Research, South Korea	Oral H5 Mitigation of fouling in membrane bioreactors for industrial wastewater treatment by quantum computing Huijun XU Korea Advanced Institute of Science and Technology, South Korea	Oral I5 Carbon nanotube supported 3D-oriented 2D membrane for effective ethylene/propene separation Jingqiao LIU Hubei University, China	OSPO6 Omni-impregnated Membrane Technologies for Water Separation and Renewable Energy Production Jingqiao LIU Hubei University, China	Oral OI5 TMC modified TiO ₂ on PVD membrane for alpha-pinene/acetone solvent separation Jingqiao LIU National Taiwan University, Taiwan	Oral OJ5 Membrane with interconnected MOF nanochannels via covalent cross-polymer on MOF-immobilized inert foil Gang WANG Nanjing Tech University, China	Oral OK5 Advanced manufacturing of polyimide hollow fiber membrane for thermally induced phase separation method Yungho SHIM Korea Institute of Energy Research, South Korea
Lunch Break								
Venue: TCT	Venue: LT8	Venue: LT7	Venue: LT4	Online (LT15) - Lei SHI	Online (LT16) - Yining WANG	Online (LT17) - Huijun XU	Online (LT18) - Daniel NG	
Session J: WA-MS Session Session Chair: Mikael DUKE & Rami WIKERMANSHINGHE	Session K: Membrane Synthesis & Fabrication II Session Chair: Miao WANG & Kezhong GUAN	Session L: Machine Learning, Simulation & Modeling Session Chair: Jin Cai SU & Miao WANG	Session M: Gas Separation & CO ₂ Capture II Session Chair: Tae-Hyun BAE & Xu JIANG	Online Special Session in Honour of Prof. Neal Chung Session Chair: Da-Ming WANG & Shi-Peng SUN	Online Session OI: Desalination and Water Treatment II Session Chair: Lei YAO & Lijun MENG	Online Session OJ: Membrane Application I Session Chair: Zhenyu CHU & Atsushi MATSUOKA	Online Session OK: Novel Membrane IV Session Chair: Masakiyo KANEZASHI & Jingtao LI	
13:50 - 14:15	Keynote Lecture J Welcome, AMI and WA-MS Keynote Lecture J Development of double skin thin film composite membranes for high-flux water vapor and VOC separation Miao WANG Tsinghua University, China	Keynote Lecture K Guiding membrane design and development by machine learning Jin Cai SU National University of Singapore, Singapore	Keynote Lecture L Structure Formation of Polymer Membranes: Role of Solution Structure and Mass Transport in Membrane Formation Tae-Hyun BAE National Taiwan University, Taiwan	OSPO7 Keynote Lecture Structure Formation of Polymer Membranes: Role of Solution Structure and Mass Transport in Membrane Formation Tae-Hyun BAE National Taiwan University, Taiwan	Keynote Lecture OI Recent research approach for modeling the performance of membrane separation Lei YAO Wuhan Institute of Technology, China	Keynote Lecture OJ Separation membrane structure for dynamic, whole-blood analysis Zhenyu CHU Nanjing Tech University, China	Keynote Lecture OK Molecular sieve separation of hydrocarbons using organic membranes via utilization of unactivated pores Masakiyo KANEZASHI Membrane Institute, Japan	
14:15 - 14:35	Oral J1 MOF supported hollow fiber membrane with ZIF-8 pore Miao WANG Tsinghua University, China	Oral K1 Establishing the effect of carbon on the separation of polyethylene glycol and dextran S. Gnanasekaran Wageningen University, The Netherlands	Oral L1 Ultra-thin nanofiltration membranes for molecular separation Yanqiu ZHANG Wuhan Institute of Technology, China	OSPO8 Molecular design of thin film nanocomposite (TFN) membranes for desalination and wastewater desalination Donghai ZHANG Zhejiang Normal University, China	Oral OI1 A general method for high-resolution membrane characterization of molecular weight distribution Yungho SHIM Korea University, South Korea	Oral OJ1 Experimental and theoretical study of scaling and fouling on effect during membrane desalination for high-flux water vapor and VOC separation Jun-Tai CHEN National Tsing Hua University, Taiwan	Oral OK1 Porous organic polymer membranes with nanochannel for high-flux water vapor and VOC separation Kuo-Lun TUNG National Taiwan University, Taiwan	
14:35 - 14:55	Oral J2 Membrane Fouling and Cleaning Session Chair: Mahmoud ABDUL HAMID King Fahd University of Petroleum & Minerals, Saudi Arabia	Oral K2 A comparative study of thin theory and numerical models in predicting concentration polarization for membrane gas separation Kathleen TOO University of Malaya, Malaysia	Oral L2 Molecular design of thin film nanocomposite (TFN) membranes for desalination and wastewater desalination Donghai ZHANG Zhejiang Normal University, China	OSPO9 Molecular design of thin film nanocomposite (TFN) membranes for desalination and wastewater desalination Donghai ZHANG Zhejiang Normal University, China	Oral OI2 Experimental and theoretical study of scaling and fouling on effect during membrane desalination for high-flux water vapor and VOC separation Jun-Tai CHEN National Tsing Hua University, Taiwan	Oral OJ2 Advanced substrate based thin film composite nanofiltration membrane with improved separation performance by chemically introducing the inorganic polymer Rongqing LI Shanghai Advanced Research Institute, China	Oral OK2 Scale construction of polyimide membrane via assembly of graphene oxide-based cross-linker assisted by high-flux water vapor and VOC separation Yungho SHIM Korea Institute of Energy Research, South Korea	
14:55 - 15:15	Oral J3 Open discussion and session closure Session Chair: Mikael DUKE & Rami WIKERMANSHINGHE	Oral K3 Accelerating the discovery of high-flux thin film membranes via a deep learning approach Miao WANG Tsinghua University, China	Oral L3 Constructing flexible nanofiltration membranes by molecular recognition strategy based on crosslinked and nanochannel Yungho SHIM Korea University, South Korea	OSPO10 Keynote Lecture Constructing flexible nanofiltration membranes by molecular recognition strategy based on crosslinked and nanochannel Yungho SHIM Korea University, South Korea	Oral OI3 Experimental and theoretical study of scaling and fouling on effect during membrane desalination for high-flux water vapor and VOC separation Jun-Tai CHEN National Tsing Hua University, Taiwan	Oral OJ3 Fundamental investigation on controlling factors of membrane fouling by dynamic gel permeation chromatography Huijun XU Korea University, South Korea	Oral OK3 Micro porous framework membranes for gas separation Yungho SHIM Korea Institute of Energy Research, South Korea	
Coffee Break								
Poster Session								
15:50 - 16:50	Bus Ride to Restaurant - Free Time							
17:50 - 18:30	Conference Dinner Venue: Parkroyal Marina Bay, Level 4, Peppercorn Restaurant							

Time zone is Singapore Time (SGT), +8 GMT, +8 UTC

Full Program (Day 3)

Time		6 th July 2022 (Day 3)							
		Venue: TCT							
		Plenary Session Session Chair: Ingo PRINZ & Dibakar BHATTACHARYA							
		Plenary Lecture 7 Polymeric membrane for gas separation: Prospects, challenges and opportunities for CO ₂ capture Abdul LATIF AHMAD Universiti Sains Malaysia, Malaysia							
		Plenary Lecture 8 Mixed matrix membranes - Unlimited scope for targeted surface modifications Chivukula Narayana MURTHY The Maharaja Sayajirao University of Baroda, India							
09:00 - 09:40		Coffee Break							
09:40 - 10:20		Coffee Break							
10:20 - 10:50		Coffee Break							
		Venue: TCT	Venue: L18	Venue: L17	Venue: L14	Online (LT15) - Lai SHI	Online (LT16) - Yining WANG	Online (LT17) - Huijuan XU	Online (LT18) - Daniel NG
		Session L1 Organic Solvent Separation Session Chair: Xin LI & György SZÉKELY	Session M1 Desalination and Water Treatment III Session Chair: Edward N. NORMAND & Ludovic OLMECE	Session N1 Membrane Synthesis & Fabrication III Session Chair: Gurupati CHAKRAVARTHY & Yali ZHAO	Session O1 Gas Separation & CO ₂ Capture II Session Chair: Rajabzadeh SAEDI & Muhammad SARFAZ	Online Session O2 Membrane Application II Session Chair: Yi-Ming SUN & Yang ZHANG	Online Session O3 Nanofiltration II Session Chair: Dan JIN & Kuosong LI	Online Session O4 Novel Membrane V Session Chair: Baowei SU & Yuanhui TANG	Online Session O5 Composite Membrane Session Chair: Tuying LIH & Daniel NG
10:50 - 11:15		Keynote Lecture L (Online) Organic solvent separation using flexible porous membranes Hideo MATSUMURA Kobe University, Japan	Keynote Lecture M Slightly blue and transparent photo-electrochromic ion-exchange membranes for energy storage Ludovic OLMECE Khalifa University, United Arab Emirates	Keynote Lecture N Computational membrane engineering: membrane design and optimization Zhigang LIH King Abdullah University of Science and Technology (KAUST), Saudi Arabia	Keynote Lecture O Effect of membrane surface pore size and porosity on CO ₂ absorption flux in membrane contactors Rajabzadeh SAEDI Kobe University, Japan	Keynote Lecture OO Liquid extraction and membrane fractionation from oil and other hydrophobic mixtures Yi-Ming SUN Yuan Ze University, Taiwan	Keynote Lecture OP Understanding and optimizing hydrophilic polyimide membranes for nanofiltration Dan JIN Southwest University, China	Keynote Lecture OQ Preparation and properties of high-efficiency composite membranes for the separation of organic pollutants Baowei SU Dalian University of Technology, China	Keynote Lecture OR The underlying mechanism insights into the synergistic effect of membranes and adsorbents on micro-membrane filtration for desalinating ultra-polluted wastewater with high-performance membrane fouling property Tuying LIH East China University of Science and Technology, China
11:15 - 11:35		Oral L1 Polyketone imide-based photocatalytic membranes for organic solvent separation SHI Nanyang Technological University, Singapore	Oral M1 Investigation of aqueous and organic ion-exchange membranes for energy storage Ludovic OLMECE Khalifa University, Singapore	Oral N1 Fabrication of superhydrophobic, omniphobic, and self-cleaning membranes for water and oil separation Gurupati CHAKRAVARTHY Indian Institute of Technology Bombay, India	Oral O1 Functionalized two-dimensional g-C ₃ N ₄ nanosheets in mixed matrix membranes for gas separation Hui Chen XU Xiamen University Malaysia, Malaysia	Oral O2 An ionic-liquid-based porous membrane for organic solvent separation Yi-Ming SUN Korea University, South Korea	Oral O3 Intrinsic porous organic polymer-based membranes for high-efficiency separation of organics and inorganics Hui Chen XU Zhejiang University of Technology, China	Oral O4 Effect of membrane structure on the performance of membranes for nanofiltration Baowei SU Nanyang Technological University, China	Oral O5 Effect of membrane structure on the performance of membranes for nanofiltration Baowei SU Nanyang Technological University, China
11:35 - 11:55		Oral L2 Sustainable membranes for organic solvent and oil separation György SZÉKELY King Abdullah University of Science and Technology (KAUST), Saudi Arabia	Oral M2 Multilayered membrane for organic solvent and oil separation Ludovic OLMECE Khalifa University, Singapore	Oral N2 Enhancing the adsorption efficiency and stability of membrane-based adsorbents for organic solvent separation Gurupati CHAKRAVARTHY Indian Institute of Technology Bombay, India	Oral O2 Supermolecular polymer network membranes with molecular sieving capabilities for efficient gas separation Hui Chen XU National University of Singapore, Singapore	Oral O3 Recovery of ethylene glycol from wastewater produced in traditional Chinese medicine industries by pervaporation Yi-Ming SUN Guangdong Institute of Advanced Technology, China	Oral O4 A novel polyimide membrane with Tunable Chemical Structure for Nanofiltration Dan JIN Marshall University, Australia	Oral O5 Effect of membrane structure on the performance of membranes for nanofiltration Baowei SU National Kaohsiung University of Science and Technology, Taiwan	Oral O6 Tunable membrane-based organic solvent separation membranes by controlling adsorbent structure Tuying LIH Zhejiang University of Technology, China
11:55 - 12:15		Oral L3 Development of polyimide-based composite membranes for organic solvent separation Kun-Hyung GOH Kobe University, Japan	Oral M3 A multifunctional and low-energy electrochromic membrane system for chemical separation of organic solvents Ludovic OLMECE Khalifa University, Singapore	Oral N3 Engineering artificial water channels in membrane separation Gurupati CHAKRAVARTHY Indian Institute of Technology Bombay, India	Oral O3 Carbon capture via high-performance 2D-3D/DF structured composite membranes Muhammad SARFAZ University of Engineering and Technology Lahore, Pakistan	Oral O4 Ultrapure recovery from aqueous solution via capacitive desalination using 2D/3D hybrid membranes Yi-Ming SUN University of Technology Sydney, Australia	Oral O5 Separation of organic solvents from wastewater by membrane distillation Dan JIN Marshall University, Australia	Oral O6 One-step synthesis of a PDMS-graphitic copolymer on the side surface of hollow fiber membrane via DFT process using spin-coating process Fenghui ZHANG Kobe University, Japan	Oral O7 Membrane-based organic solvent separation membranes by controlling adsorbent structure Tuying LIH Zhejiang University of Technology, China
12:15 - 12:35		Oral L4 Membrane-based organic solvent separation membranes for organic solvent separation Yanyu LI National University of Science and Technology, Singapore	Oral M4 Graphene Oxide Anticorrosion/Adsorption Membranes for Gas Separation Ludovic OLMECE Khalifa University, Singapore	Oral N4 Novel sandwich structure hollow fiber membrane for high efficiency membrane distillation and water-oil separation Gurupati CHAKRAVARTHY Indian Institute of Technology Bombay, India	Oral O4 Photochemical-enhanced ion-exchange functionalized polyethersulfone hollow fiber membranes for propylene and propane separation Can Zeng LANG National University of Science and Technology, Singapore	Oral O5 Selective recovery of lithium from spent lithium battery using polymer inclusion membrane (PIM) membranes Yi-Ming SUN Qingdao University of Science and Technology, China	Oral O6 Elucidating the dominant mechanism in the pervaporation separation of aqueous ammonia-water and propylene glycol by nanofiltration membranes Dan JIN Tongji University, China	Oral O7 Multiple functionalities of polyimide membrane distillation as phase inversion process based on diphasic particle growth Yuanhui TANG China University of Mining and Technology, China	
12:35 - 13:00		Lunch Break							
		Venue: TCT	Venue: L18	Venue: L17	Venue: L14	Online (LT15) - Lai SHI	Online (LT16) - Yining WANG	Online (LT17) - Huijuan XU	Online (LT18) - Daniel NG
		Session P1 Membrane Synthesis & Fabrication IV Session Chair: Shoji MITANI & Sowjanya BHUVANA	Session Q1 Membrane Bioreactor and Wastewater Treatment Session Chair: Bing WU & Sanghyun JEONG	Session R1 Membrane Fouling II Session Chair: Tao HUA & Lee Nisang SIM	Session S1 Gas Separation & CO ₂ Capture III Session Chair: Dun Yan KANG & Chieh-Chih HU	Online Session O6 Gas Separation & CO ₂ Capture III Session Chair: Dun Yan KANG & Chieh-Chih HU	Online Session O7 Desalination and Water Treatment III Session Chair: Linda ZOU & Deqing ZHAO	Online Session O8 Novel Membrane VI Session Chair: Gang HAN & Huijuan XU	Online Session O9 Membrane Application III Session Chair: Jane WANG & Xiaobin YANG
13:00 - 14:15		Keynote Lecture P (Online) New solvent platform for PDMS membrane preparation with excellent thermal stability for ultra-low water vapor permeance applications Alberto FIGUEROA Institute on Membrane Technology, Italy	Keynote Lecture Q Recent developments in membrane bioreactors: Effect of membrane material and configuration on process performance Bing WU University of Twente, The Netherlands	Keynote Lecture R New tools to understand and control fouling in conventional and novel membrane bioreactors Lee Nisang SIM University of Technology Sydney, Australia	Keynote Lecture S Carbon capture via high-performance 2D-3D/DF structured composite membranes Muhammad SARFAZ University of Engineering and Technology Lahore, Pakistan	Keynote Lecture OS MCP membrane for gas separation and pervaporation Dun Yan KANG National Taiwan University, Taiwan	Keynote Lecture OT Highly Permeable M22 Nanofiltration Membranes for Organic Mixture Removal Linda ZOU Khalifa University of Science and Technology, United Arab Emirates	Keynote Lecture OU Controlling membrane chemistry to enhance selectivity of ion-exchange membranes for water separation Gang HAN Nankai University, Taiwan	Keynote Lecture OV Design and fabrication of biodegradable, nutrient permeable vascular graft through 3D printing Jane WANG National Tsing Hua University, Taiwan
14:15 - 14:35		Oral P1 Development of organophosphonic hybrid porous membranes for organic solvent separation Kwang Seop MO Gyeongsang National University, South Korea	Oral Q1 Feasibility of high flux anaerobic membrane bioreactor for domestic wastewater treatment by varying membrane energy Chuanming WANG National University of Science and Technology, Singapore	Oral R1 Evaluation of fouling characteristics by using real-time monitoring microscopy (QCM-D) in membrane bioreactor Alberto FIGUEROA Kortrijk University, Belgium	Oral S1 RMSF P2D gasifier system for selective and high-efficiency CO ₂ capture Jiangping LU Nanyang Technological University, China	Oral O6 Facile fabrication of GDP-PDMS membranes with high flux and stability for desalination by membrane distillation Yi-Ming SUN Nanyang Technological University, China	Oral O7 Facile fabrication of GDP-PDMS membranes with high flux and stability for desalination by membrane distillation Yi-Ming SUN Nanyang Technological University, China	Oral O8 Rapid construction of dual-layer ceramic microfiltration membranes from UV-curable epoxy via a co-curing process Tang CHEN Nanyang Technological University, China	Oral O9 Insights of dual separation membrane for light gas separation Jing-Hsiung HU National Chung Cheng University, Taiwan
14:35 - 14:55		Oral P2 Advanced flat transfer membranes in electro-osmotic membrane processes for sustainable lithium resource extraction and recovery Yao ZHANG Kobe University, Japan	Oral Q2 Effect of membrane material on the performance of membrane bioreactors Chuanming WANG National University of Science and Technology, Singapore	Oral R2 Effect of fouling characteristics on the performance of membrane bioreactors Lee Nisang SIM University of Technology Sydney, Australia	Oral S2 Composite membranes for direct capture and photocatalytic reduction of carbon dioxide from air Dun Yan KANG National Taiwan University, Taiwan	Oral O8 High performance membrane based low pressure nanofiltration membranes for water treatment Linda ZOU Khalifa University of Science and Technology, United Arab Emirates	Oral O9 Fabrication of ZnO nanoparticles coated ceramic microfiltration membranes for effective treatment of organics Huijuan XU Hasselt University of Belgium, Belgium	Oral O10 Membrane-based organic solvent separation membranes by controlling adsorbent structure Tuying LIH Zhejiang University of Technology, China	
14:55 - 15:15		Oral P3 (Online) Calculation hollow fiber microfiltration membranes prepared by thermally induced phase separation (TIPS) with appropriate solvent and coagulant for gas separation Shota TAKAO Daiichi, Japan	Oral Q3 Assembly electrochromic membranes for energy storage Ludovic OLMECE Khalifa University, Singapore	Oral R3 Fouling mitigation by rigid and flexible permeation and membrane cleaning in membrane bioreactors for nutrient recovery in wastewater treatment Lee Nisang SIM University of Technology Sydney, Australia	Oral S3 A new concept for preventing the selectivity decrease of Chabazite membranes in high pressure CO ₂ separation Fuyuhiko HIRAHARA Kagoshima University, Japan	Oral O10 Significance of microstructure of coagulated hollow fiber membranes in water purification under the operating pressure Tuying LIH Yuan Ze University, Taiwan	Oral O11 Protein exchange membranes of polyimide and polyethersulfone for the separation of organic solvents Ming-Di CHEN Ming Chi University of Technology, Taiwan	Oral O12 Membrane-based organic solvent separation membranes by controlling adsorbent structure Tuying LIH Zhejiang University of Technology, China	
15:15 - 15:45		Coffee Break							
		Venue: TCT							
15:45 - 16:45		Closing Tzyy Hour CHONG (MEMSIS) & ASEI (MEMSIS) Best Presentation and Poster Awards Rong WANG & Tzyy Hour CHONG AMS & MEMSIS Upcoming Events Promotion ICDM 2023 & AMS14 Bus Boarding							
16:55 - 17:00		SMT/Lab & Campus Tour							

POSTER PROGRAM

AMS13



5th July 2022 (15.15 - 16.45 pm) at the Pavilion

S/N	Details	S/N	Details
P01	Temperature dependence of gas permeability for mixed matrix membranes composed of PIM-1 and surface-modified silica nanoparticles <u>Mizuki Akatsuka</u> , Masafumi Yamato, Hiroyoshi Kawakami Tokyo Metropolitan University, Japan	P19	Effect of operating temperature and methanol addition on the performance of sequencing batch reactor (SBR) process for RO concentrate treatment <u>Jin-San Lee</u> , Sun-A An, Cheol-Gyu Park, Han-Seung Kim Myongji University, South Korea
P02	Preparation and evaluation of crosslinked anion exchange polymer membrane using chitosan with ammonium group and brominated polymer <u>Seong Min Han</u> , Tae Yang Son, Kwang Seop Im, Vijayalekshmi Vijayakumar, Sang Yong Nam Gyeongsang National University, South Korea	P20	Accelerated CO transport based on dual carriers in mixed-matrix membranes <u>So Youn Lee</u> , Du Ru Kang, Jeong-Hoon Kim, Jong Hak Kim Yonsei University, South Korea
P03	Preparing of SEBS-based ion exchange hybrid membrane using particles with increased ion exchange capacity <u>Seong Min Han</u> , Kwang Seop Im, Tae Yang Son, Sang Yong Nam Gyeongsang National University, South Korea	P21	Exploring the membrane fouling effects and cleaning strategies in osmotically assisted reverse osmosis processes Christian D. Peters, <u>Dan Li</u> , Zijing Mo, Nicholas P. Hankins, Qianhong She Nanyang Technological University, Singapore
P04	Preparation and characterization of anion exchange composite membranes prepared using polyphenylene oxide <u>Kwang Seop Im</u> , Ha Neul Jeong, Seong Min Han, Tae Yang Son, Sang Yong Nam Gyeongsang National University, South Korea	P22	Alternating spin-and-spray electrospun scaffold membranes with fractionated MIL-101(Cr) adsorbent for high-performance single-pass dye adsorption process <u>HuaiXun Lim</u> , Kunli Goh, Daniel Yee Fan Ng, Xu Jiang, Chong Yang Chuah, JW Chew, Rong Wang Nanyang Technological University, Singapore
P05	Imidazole derivatives controlled interfacial polymerization membrane for micropollutants sieving <u>Titik Istirokhatun</u> , Yuqing Lin, Hideto Matsuyama Kobe University, Japan	P23	Grafting an Amphiphilic Block Copolymer to Magnetic-Functionalized Carbon Nanotubes and Their Nanochannels in Membranes <u>Xiansyuan Song</u> , Wenzhong Ma, Sicheng Yin, Jing Zhong Changzhou University, China
P06	Evaluation of carbon dioxide gas separation characteristics of multilayer composite membrane prepared by blending POSS and PEBAX <u>Ha Neul Jeong</u> , Ji Hyeon Kim, Kwang Seop Im, Sang Yong Nam Gyeongsang National University, South Korea	P24	Ionic liquids based on styrenesulfonate having lower critical solution temperature as draw solute for forward osmosis process - Effect of alkyl chain length and central atom in quaternary cation <u>Jihyeon Moon</u> , Kyutae Seo, and Hyo Kang Dong-A University, South Korea
P07	Preparation and electrochemical evaluation of an anion exchange membrane using an anion exchange engineering polymer synthesized for use in a water electrolysis system <u>Ha Neul Jeong</u> , Tae Yang Son, Kwang Seop Im, Vijayakumar Vijayalekshmi, Sang Yong Nam Gyeongsang National University, South Korea	P25	Scaling-up defect-free asymmetric hollow fiber membranes to produce oxygen-enriched gas for integration into municipal solid waste gasification process Chong Yang Chuah, <u>Siti Nurhawa Binte Muhammad Anwar</u> , Piyyarat Weerachanchai, Tae-Hyun Bae, Kunli Goh, Rong Wang Nanyang Technological University, Singapore
P08	Mixed-matrix membranes fabricated with imidazole-based comb copolymer and ZIF-8 for high-performance CO ₂ capture <u>Miso Kang</u> , So Youn Lee, Jong Hak Kim Yonsei University, South Korea	P26	Enhancement of denitrification by sulfur-based carrier in Sequencing Batch Reactor (SBR) for advanced wastewater treatment <u>Cheol-Gyu Park</u> , Sun-A An, Jin-San Lee, Han-Seung Kim Myongji University, South Korea
P09	Flexible, adhesive electrolyte membranes based on partially fluorinated comb copolymer for solid-state supercapacitors <u>Du Ru Kang</u> , Miso Kang, Jong Hak Kim Yonsei University, South Korea	P27	Detection of membrane fouling in reverse osmosis using electrical impedance spectroscopy J. Seo, <u>L.N. Sim</u> , R. Y. Chia, H. G. L. Coster and T.H. Chong Nanyang Technological University, Singapore
P10	Autopsy study of gas-water separation membrane used for removing water vapor from flue gas in sludge drying process <u>Su-bin Kim</u> , Mi-Jin Jeon, Sang-chul Jung, Kiwook Kwon, Yong-Woo Jeon South Korea Testing Laboratory, South Korea	P28	Tannic acid reinforced interfacial polymerization fabrication of internal pressurized thin-film composite hollow fiber reverse osmosis membranes with high performance Xinghua Lv, <u>Enlin Wang</u> , Shaohao Liu, Liyang Liu, Yating Yin, Shuxuan Li, Baowei Su, Lihui Han Ocean University of China, China
P11	Highly CO ₂ -perm-selective DDR@CHA hybrid Zeolite membranes <u>Sejin Kim</u> , Jungkyu Choi South Korea University, South Korea	P29	Evaluation of membrane structure and water-in-oil emulsion separation performance of porous polyketone membranes <u>T. Watanabe</u> , K. Nakagawa, T. Kitagawa, A. Matsuoka, E. Kamio, T. Yoshioka, H. Matsuyama Kobe University, Japan
P12	A study on pore filled ion exchange membrane according to the characteristics of the substrate for anion exchange membrane fuel cell <u>Do Hyeon Kim</u> , Sang Yong Nam Gyeongsang National University, South Korea	P30	20+ years of drinking water related coagulation/flocculation-low pressure membrane studies: Knowledge gaps and recommendations for future research <u>Tyler Malkoske</u> , Pierre R. Bérubé, Robert C. Andrews University of Toronto, Canada
P13	Preparation of semi-alicyclic homo- and blended polyimides membranes and their gas separation properties Chae-Hee Seo, <u>Jeong-Hoon Kim</u> South Korea Research Institute of Chemical Technology, South Korea	P31	Feasibility of integrating pressure retarded osmosis with direct CO ₂ capture process: Membrane fouling and mitigation L. Guan, B. Wu University of Iceland, Iceland
P14	High separation performance of hierarchically structured MFI membrane: Effects of embedded extrinsic pores in MFI Zeolite membrane <u>Pyoseop Kim</u> , Jungkyu Choi South Korea University, South Korea	P32	Effect of anion structure of benzenesulfonate-based draw solute in forward osmosis process <u>DaEun Yang</u> , Yeonsoo Cho, and Hyo Kang Dong-A University, South Korea
P15	Preparing and characterization of organic solvent nanofiltration membrane using Polybenzimidazole <u>Seong Heon Kim</u> , Ji Hyeon Kim, Kwang Seop Im, Sang Yong Nam Gyeongsang National University, South Korea	P33	Development of a composite membrane with ultrathin ion gel layer for efficient CO ₂ separation <u>J. Zhang</u> , E. Kamio, A. Matsuoka, K. Nakagawa, T. Yoshioka, H. Matsuyama Kobe University, Japan
P16	Evaluation of suppliers and characteristics of polybenzimidazole (PBI) using electrospinning <u>Seong Heon Kim</u> , Kwang Seop Im, Ji Hyeon Kim, Ji Hye Jung, Sang Hoon Han, Seong Yong Ha, Sang Yong Nam Gyeongsang National University, South Korea	P34	Selective separation membranes (SSM) for fractionating organics and salts for industrial wastewater treatment <u>Meng Li</u> , Xuan Zhang Nanjing University of Science and Technology, China
P17	Preparation and permeation characteristics of PEI-based polymer hollow fiber membrane for hydrogen separation <u>Hyeon Woong Kwad</u> , Kwang Seop Im, Ji Hyeon Kim, Sang Hoon Han, Sang Yong Nam Gyeongsang National University, South Korea	P35	Modification and application of polypropylene hollow fiber membrane by embedment-entrapment method Zhenyu Xi, Xinmiao Zhang, Shaohua Li, Yiqun Liu, Yujie Wang Sinopec (Beijing) Research Institute of Chemical Industry, China
P18	Preparation and evaluation of Polybenzimidazole nanocomposite with improved performance prepared using NIPS <u>Hyeon Woong Kwad</u> , Ji Hyeon Kim, Kwang Seop Im, Sang Hoon Han, Seong Yong Ha, Sang Yong Nam Gyeongsang National University, South Korea		

Time zone is Singapore Time (SGT), +8 GMT, +8 UTC