

# International Membrane Conference in Taiwan 2023

暨台灣薄膜學會年會與低碳水循環技術論壇

Place: College of Engineering, National Ilan University, Yilan, Taiwan

Date: JUNE 30<sup>rd</sup>,2023

## A. Student Oral Presentation Contest

Oral Session – 工 112 / 工 113 (12:30-15:00)

Time	工學院工 112	工學院工 113
12:30-12:45	<p><b>OR-01</b> X-ray detectors based on amorphous InGaZnO thin films Ting-Ci Li (Department of Applied Materials and Optoelectronic Engineering, National Chi Nan University)</p>	<p><b>OR-02</b> Highly sensitive and stable room-temperature gas sensors based on the photochemically activated p-type CuAlO<sub>2</sub> thin films Shu-Han Yuan (Department of Applied Materials and Optoelectronic Engineering, National Chi Nan University)</p>
12:45-13:00	<p><b>OR-03</b> The Formation of Cellulose Acetate Membrane with Various Solvents and Carbon Quantum Dots Incorporation Hong-Li Yang (Department of Chemical Engineering, Chung Yuan University)</p>	<p><b>OR-04</b> Photocatalytic MIL-88B(Fe,Co)@Al<sub>2</sub>O<sub>3</sub> membrane reactor for phenol removal with high permeance flux Lee-Lee Chang (Department of Chemical Engineering, National Taiwan University)</p>
13:00-13:15	<p><b>OR-06</b> Preparation of highly permeable loose nanofiltration membranes using Aluminium Based Metal Organic Framework CAU-10H/P84 polyimide for effective dye/salt fractionation from industrial wastewater. Netsanet Kebede Hundessa (Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology)</p>	<p><b>OR-05</b> TiO<sub>2</sub>@CQDs/ Polyethersulfone Tubular Membrane for Metal Ion-Containing Wastewater Treatment You-Syuan Wang (Department of Chemical Engineering, Chung Yuan University)</p>

13:15-13:30	<p style="text-align: center;"><b>OR-08</b></p> <p>Graphene-based Phra Phrom like membrane for simultaneously water and energy regeneration with multifunction</p> <p style="text-align: center;">Tsung-Han Huang (Graduate Institute of Applied science and Technology, National Taiwan University of Science and Technology)</p>	<p style="text-align: center;"><b>OR-07</b></p> <p>Preparation of NH<sub>2</sub>-UiO-66/Polyethersulfone /Polyetheretherketone Thin Film Composite Membrane for Dye Wastewater Treatment</p> <p style="text-align: center;">Shao-Feng Ou (Department of Chemical Engineering, Chung Yuan University)</p>
13:30-13:45	<p style="text-align: center;"><b>OR-09</b></p> <p>PVD-Engineered the nanopyramid-like stainless-steel membrane toward ultra-high permeable oil/ water emulsions separation</p> <p style="text-align: center;">Yi-Jui Yeh (Department of Chemical Engineering, National Taiwan University)</p>	<p style="text-align: center;"><b>OR-10</b></p> <p>Investigation of the pH-induced changes in the properties of polyethyleneimine-crosslinked graphene oxide membranes for desalination and heavy metal ions separation</p> <p style="text-align: center;">Hannah Faye M. Austria (Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology)</p>
13:45-14:00	<p style="text-align: center;"><b>OR-11</b></p> <p>Achieving stereoscopic cell imaging through different modes of a thin film metamaterial perfect absorber</p> <p style="text-align: center;">Zheng-Ting Huang (Department of Materials Engineering, Ming Chi University of Technology)</p>	<p style="text-align: center;"><b>OR-12</b></p> <p>Photochemically activated p-type CuGaO<sub>2</sub> thin films for highly stable room-temperature gas sensors</p> <p style="text-align: center;">Zi-Chun Tseng (Department of Applied Materials and Optoelectronic Engineering, National Chi Nan University)</p>
14:00-14:15	<p style="text-align: center;"><b>OR-13</b></p> <p>Mixed-matrix membranes comprising imidazole-functionalized UiO-66<sup>+</sup> and polybenzimidazole for high-temperature proton exchange membrane fuel cells</p> <p style="text-align: center;">M.H. Tran (Department of Chemical and Materials Engineering, National Kaohsiung University of Science and Technology)</p>	<p style="text-align: center;"><b>OR-14</b></p> <p>Preparation of fluorine-free superhydrophobic cellulose composites for effective oil/water mixtures and emulsions separations</p> <p style="text-align: center;">Guyita Berako Belachew (Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology)</p>

14:15-14:30	<p style="text-align: center;"><b>OR-16</b></p> <p style="text-align: center;">Ultrathin Polyamide Nanocomposite Membrane Mediated by MoS<sub>2</sub> Conjugated with Thiol Molecules for Improved Pervaporation Dehydration</p> <p style="text-align: center;">Marwin Gallardo (Department of Chemical Engineering, Chung Yuan University)</p>	<p style="text-align: center;"><b>OR-15</b></p> <p style="text-align: center;">2D LDH nanosheet incorporated in ternary mixed matrix membrane for CO<sub>2</sub> capture</p> <p style="text-align: center;">P. C. Wu (Department of Chemical Engineering, National Taiwan University)</p>
14:30-14:45	<p style="text-align: center;"><b>OR-17</b></p> <p style="text-align: center;">Suppressed Lithium Dendrite Growth via Self-Healing Polymer Coatings for Anode-Free Lithium Metal Battery</p> <p style="text-align: center;">C. H. Chung (Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology)</p>	<p style="text-align: center;"><b>OR-18</b></p> <p style="text-align: center;">A High-Performance of Zwitterionic Copolymer Electrolyte Membranes for Solid-State Lithium-ion Batteries</p> <p style="text-align: center;">Badril Azhar (Department of Chemical Engineering, National Taiwan University of Science and Technology)</p>
14:45-15:00	<p style="text-align: center;"><b>OR-19</b></p> <p style="text-align: center;">Synergistic Effect of Combining UIO-66 nanoparticles and Mxene nanosheets in Pebax Mixed Matrix Membranes for CO<sub>2</sub> Separation</p> <p style="text-align: center;">Eyasu Gebrie Ajebe (Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology)</p>	<p style="text-align: center;"><b>OR-21</b></p> <p style="text-align: center;">Three-dimensional spherical invisible cloak based on dielectric thin film metamaterials</p> <p style="text-align: center;">Juan, He-Jiun (Department of Materials Engineering, Ming Chi University of Technology)</p>
15:00-15:15	<p style="text-align: center;"><b>OR-20</b></p> <p style="text-align: center;">Fluoro-Functionalized Mesoporous Silica Thin Membranes Supported on Macroporous AAO with Ultrahigh Organic Solvent Permeance Suitable for Efficient Organic Solvent Nanofiltration</p> <p style="text-align: center;">Sher Ling Lee (Department of Materials Engineering, Ming Chi University of Technology)</p>	

**B. Poster Session – 工 114 / 工 115 (12:30-14:00)****B1 Student Poster Presentation Contest**

Number	Title of Abstract	Name	Affiliation
SP-01	Hydrogel Anion Exchange Membranes in Electrodialysis for Concentration of Sodium Bicarbonate and Formic Acid	Chueh-Yu Peng	Department of Chemical Engineering and Materials Science, Yuan Ze University
SP-02	Tuning Polyethersulfone Membrane Structure: Examining Non-Solvent Addition and Vapor Exposure Time to Improve Performance and Durability for Pressure Operation	Chen-Wei Hsu	Department of Chemical Engineering, Chung Yuan University
SP-03	Study on the PES Membrane Formation by Nonsolvent Induced Phase Separation Process: Effect of PVP and Water Addition on the Membrane Morphology	Min-Hsun Wu	Department of Chemical Engineering, Chung Yuan University
SP-04	$\alpha$ -Ga <sub>2</sub> O <sub>3</sub> prepared by LPD on n-GaAs with aluminum-base annealing processes	Yi-Cheng Lee	Department of Microelectronics Engineering, National Kaohsiung University of Science and Technology
SP-05	Forming bi-continuous and bioinert PVDF membranes by in-situ modification with zwitterionic copolymer	Lai,Ren-Min	Department of Chemical Engineering, Chung Yuan Christian University
SP-06	Advancing Ceramic Membrane Technology: 3D Printing of ZTA Ultrafiltration Membranes for Enhanced Performance and Design Flexibility	Peng-Jen Lai	Department of Chemical and Materials Engineering, National Ilan University
SP-07	Combination of In Situ Transformation of SiC/SiO <sub>2</sub> and 3D Printing for SiC Oil/Water Separation Membranes	Yu-Ting Lin	Department of Chemical and Materials Engineering, National Ilan University
SP-08	Zwitterionic Carbon Quantum Dots Modification onto Cellulose Acetate Membrane Surface for Oily Wastewater Treatment	Yu-Xin Hsu	Department of Chemical Engineering, Chung Yuan University
SP-09	Fabrication of Composite Membrane Based on Deposition of Sodium Alginate-Modified MoS <sub>2</sub> on PTFE for Oil-Water Emulsions Separation	Sheena Mae de Leon	School of Chemical, Biological, and Materials Engineering and Sciences, Mapúa University
SP-10	Alginate/ZnS Quantum Dots Mixed Matrix Membranes for Enhanced Water/Isopropanol Pervaporation Performance	Jun-Wei Wu	Department of Chemical Engineering, National Chung Hsing University

SP-11	Efficient Water/Isopropanol Pervaporation through Alginate Membranes by Incorporating Sea Urchin-like CuO Particles	P.-H. Lu	Department of Chemical Engineering, National Chung Hsing University
SP-12	Efficient Pervaporation for Acrylic acid Dehydration Using Alg/TiO <sub>2</sub> and ALG/BaTiO <sub>3</sub> Mixed Matrix Membranes	M.-K. Tsai	Department of Chemical Engineering, National Chung Hsing University
SP-13	Adjusting the morphology of poly(vinylidene fluoride) membrane by the vapor-induced phase separation process for competitive direct contact membrane distillation	Kuo-Yun Chang	Department of Chemical Engineering, Chung Yuan University
SP-14	Double wetted carbon fiber for capacitive seawater desalination	Jian-Lin Huang	Department of Materials Engineering, Ming Chi University of Technology
SP-15	Polyketone/Nylon Electrospun-Hot Pressed Nanofiber Membrane for Depth Filtration of Nanosuspension.	Yu-Chi Yang	Department of Chemical and Materials Engineering, National Ilan University
SP-16	Enhancing the separation performance of ultrafiltration membranes by incorporating zwitterionic metal-organic framework	T. J. Cheng	Department of Chemical and Materials Engineering, National Ilan University
SP-17	The performance of thin film nanocomposite membrane based on amino-functionalized metal-organic frameworks for nanofiltration	Y. T. Chu	Department of Chemical and Materials Engineering, National Ilan University
SP-18	Amino-Functionalized ZIF-8-Polyamide Composite Membrane for Pervaporation Separation of Isopropanol Aqueous Solution	C. Y. Lu	Department of Chemical and Materials Engineering, National Ilan University
SP-19	Zwitterionic Carbon Quantum Dots Modification on Cellulose Acetate Tubular Membrane for Oil/Water Separation	Gabriel Villas Carballo	School of Chemical, Biological, and Materials Engineering and Sciences, Mapúa University
SP-20	Performance of Zwitterionic Silicon Quantum Dots-Polyamide Composite Nanofiltration Membrane for Dye/Salt Separation	P. H. Wu	Department of Chemical and Materials Engineering, National Ilan University
SP-21	Performance of polyamide composite membranes with monoamines containing carboxylic terminal groups for dye/salt separation	G. L. Feng	Department of Chemical and Materials Engineering, National Ilan University
SP-22	Zwitterionic Nitrogen-Doped Graphene Quantum Dots-Polyamide Composite Nanofiltration Membrane for Dye/Salt Separation	L. L. Lin	Department of Chemical and Materials Engineering, National Ilan University

SP-23	The performance of cellulose triacetate membrane with carboxyl-functionalized silicon quantum dots for oil/water emulsion separation	X. Y. Peng	Department of Chemical and Materials Engineering, National Ilan University
SP-24	Effect of Zwitterionic Carbon Quantum Dots Precursor on the Oil/Water Emulsion Separation Performance of Cellulose Acetate Membrane	Hsin-Yi Lin	Department of Chemical Engineering, Chung Yuan University
SP-25	Silicon Quantum Dots Incorporated Polyamide Membrane Preparation for Pervaporation Dehydration of Isopropanol	Chih-Ching Huang	Department of Chemical Engineering, Chung Yuan University
SP-26	TiO <sub>2</sub> @CQDs/Polyethersulfone Hollow Fiber Membrane Preparation for Oil/Water Separation	Tien-Chi Huang	Department of Chemical Engineering, Chung Yuan University
SP-27	Study on Removal of Chelated Copper by UiO-66-(COOH) <sub>2</sub> Doped Cellulose Triacetate Ultrafiltration Membrane	Yueh-Hung Chen	Department of Chemical Engineering, Chung Yuan University
SP-28	One-step growth LDHs carbon electrode on waste cellulose derived membrane using laser sintering method for capacitive deionization	Yu-Zi Chang	Department of Materials Engineering, Ming Chi University of Technology
SP-29	Tetracycline removal by combining separation processes and photocatalysis degradation in a photocatalytic membrane reactor	Shih-Hong Liou	Department of Chemical Engineering, Chung Yuan University
SP-30	Fabrication of Thin-Film Composite Nanofiltration Membranes with Spirobisindane Diamine Monomers for Dye/Salt Separation	Marco A. Orda	School of Chemical, Biological, and Materials Engineering and Sciences, Mapúa University
SP-31	Anti-biofilm coatings: Atmospheric Pressure Plasma Jet-induced graft polymerization of poly(acrylic acid)-gelatin hydrogel and Immobilization of Chinese Herb Extracts On 3D Printed Polymer Surfaces	Yu Qi Huang	Department of Biomedical Engineering, Dayeh University
SP-32	Ag-Containing MAO Coatings and multiple surface treatments on Pure Ti for Antibacterial Properties	Tzu Chieh Huang	Department of Chemical and Materials Engineering, National Central University
SP-33	Highly entangled zwitterionic hydrogel	Ying-Chieh Chuang	Department of Chemical and Materials Engineering, National Central University
SP-34	Application of Aqueous Phase Ring Opening Reaction Modified PVDF Membrane in Bio-inert	Ying-Tzu Chiu	Department of Chemical Engineering, Chung Yuan

	Surface		University
SP-35	Enhancing the thermal stability and mitigating biofouling of PVDF membranes by sulfobetaine methacrylamide amphiphilic utilization	Yi-Ling Wu	Department of Chemical Engineering, Chung Yuan University
SP-36	Study on Bio-Inert Property of Bi-Continuous PVDF Membrane with Thermostable Zwitterionic Copolymer Prepared by Vapor-Induced Phase Separation	Deng-Shin Chen	Department of Chemical Engineering, Chung Yuan University
SP-37	In situ modification for antifouling material of temperature-induced phase separation membrane with tertiary and quaternary amide groups	Yi-Hsuan Chien	Department of Chemical Engineering, Chung Yuan University
SP-38	Mixed matrix membranes comprising 6FDA-TFDB polyimide and UiO-66 for gas separations	Xuan-Hao Lin	Department of Chemical and Materials Engineering, National Kaohsiung University of Science and Technology
SP-39	Effect of Dopamine Nanoparticle Modification on Pervaporation Separation of Polyamide Composite Membranes Prepared by Vacuum-Assisted Interfacial Polymerization	Ching-Hsuan Huang	Department of Chemical Engineering, Chung Yuan University
SP-40	Fabrication of Graphene Oxide Membrane Intercalated with UiO-66-PEI MOF for Pervaporation Dehydration	Ivan Jerome Panis	School of Chemical, Biological, and Materials Engineering and Sciences, Mapúa University,
SP-41	Thin-Film Composite Membrane Incorporated with Zwitterionic UiO-66 MOF for Pervaporation Dehydration	Charlston Rex Garrido Falcutilla	School of Chemical, Biological, and Materials Engineering and Sciences, Mapúa University
SP-42	Sulfonated Chitosan based Multi-layer Composite Membrane for Potassium Conducting Membrane (PCM) in Hydrogen Evolution	Bei-Ni Chen	Department of Materials Science and Engineering, National Taiwan University
SP-43	Zeolite nanosheets as organic solvent reverse osmosis (OSRO) membranes for ethanol/water separation	Yen-Yung Wu	Department of Chemical Engineering, National Taiwan University

## B2 Poster Presentation

Number	Title of Abstract	Name	Affiliation
P-01	A transparent heater with an Indium Tin Oxide Film	Zi-hsuan Peng	Department of Electrical Engineering, National University of Tainan
P-02	Characteristics of GeSe films grown by chemical vapor deposition	Yi-Shan Lu	Department of Electronic Engineering, National Changhua University of Education
P-03	A study of quantum dots combined with photodetectors and humidity sensors of SnS <sub>2</sub> thin films	Li-Yun Hsu	Department of Electronic Engineering, National Changhua University of Education
P-04	Zwitterionic Poly(Sulfobetaine Methacrylate-co-Acrylic Acid) Assisted Simultaneous Anti-wetting and Anti-fouling Membranes for Membrane Distillation	Yueh-Han Huang	Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology
P-05	Meldrum's acid-Containing Polyamide through Interfacial Polymerization as the Selective Layer of Thin-Film Composite Membranes for Pervaporation Desalination	T. H. Hsiang	Department of Chemical Engineering, National Tsing Hua University
P-06	Simulation and experimental study on ammonia removal and recovery from aqueous solution by flat sheet membrane distillation	Chan, Cheng-Hsun	Department of Chemical Engineering and R&D Center for Membrane Technology
P-07	Improving the Biological Inertness of Polypropylene Fibrous Membranes by Using Zwitterionic zP(ODA-r-4VP)	Hao-Tung Lin	Department of Chemical Engineering, Chung Yuan Christian University
P-08	Zwitterionic gradient double-network hydrogel membranes with superior biofouling resistance for sustainable osmotic energy harvesting	Kang-Ting Huang	Department of Chemical and Materials Engineering, National Central



			University
P-09	Co-continuous structure design of mixed matrix membranes based on immiscible 6FDA-based polyimide blends with enhanced the gas separation performance	Li-Cheng Jheng	Department of Chemical and Materials Engineering, National Kaohsiung University of Science and Technology
P-10	Preparation of Carbon Quantum Dot/Titanium Dioxide Nanofibers by Electrospinning for Treatments of Volatile Organic Compounds and Particulate Matter	Shih-Chieh Lin	Department of Chemical and Materials Engineering, National Ilan University
P-11	Investigations On Novel Biodegradable Polymer Composites with Preferable Crystallization Behaviors and Potential for Future Membrane Applications	Li-Ting Lee	Department of Materials Science and Engineering, Feng Chia University, Taichung