

Second Singapore-China Joint Symposium on AI & Sustainability

Young Scientists Forum Poster Programme

30 Sep 2025, 12:00 to 14:00

S/N	Session	Details
A01	Resource Recovery	Finding The Gaps Between Climate Change Experts and General Audiences Using AI-driven Approaches <u>Cuc Duong</u> , Erik Cambria, Charles Yang Chun Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore
B02	Membrane Technology	Dual resistance Janus PDA/PVDF membrane for removal of short- and long-chain perfluoroalkyl substances by membrane distillation <u>Siyoung Byun</u> , Sanghyun Jeong Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore
B03	Membrane Technology	Influences of substrate properties and liposome integration on high-flux thin-film composite desalination membranes <u>Clover Yong Le Lim</u> , Daniel Yee Fan Ng, Can Li, Jaime Torres, Rong Wang Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore
B04	Membrane Technology	Resource Recovery from Seawater Reverse Osmosis (SWRO) Desalination Brine <u>Wen Yi Chia</u> , Wei Liang Tan, Truong Vinh Hien, Tzyy Haur Chong Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore
B05	Membrane Technology	Visible-Light-Responsive TiO₂@Polydopamine–PVDF Membranes: Influence of Integration Strategy on Photocatalytic Performance <u>Thi My Hanh Le</u> , Yi-Ning Wang, Can Li, Rong Wang, Sermpong Sairiam Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore
B06	Membrane Technology	Engineering Hollow Fiber Thin-Film Composite Membranes with Enhanced CO₂ Separation Performance <u>Shan Xu</u> , Kunli Goh, Rong Wang Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore
B07	Membrane Technology	Catalyst-assisted secondary polymerization for fabricating positively charged polysulfonamide hollow fiber nanofiltration membrane with robust acid resistance <u>Yifei Wei</u> , Can Li, Daniel Yee Fan Ng, Choon-Hong Tan, Rong Wang Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore
B08	Membrane Technology	Pilot-scale harvesting of purple phototrophic bacteria during food waste valorization <u>Huijuan Xu</u> , Daniel Yee Fan Ng, Rong Wang Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore
B09	Membrane Technology	Tailoring PVDF Membrane Piezoelectricity via Incorporation of Polydopamine-Modified BaTiO₃ Nanoparticles <u>N. Misdan</u> , Y. P. Su, T. H. Chong Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore
B10	Membrane Technology	Fabrication of High-performance Hollow Fiber Membrane for CO₂/N₂ Separation <u>Yuxuan Dai</u> , Kunli Goh, Rong Wang Singapore Membrane Technology Centre, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore 637141, Singapore
D11	Bio-technology & Bio-processes	Microbial Interactions in Marine Plasticsphere Saesha Verma School of Civil and Environmental Engineering, Nanyang Technological University, Singapore
D12	Bio-technology & Bio-processes	Establishment of Plastic-associated Microbial Community from Superworm Gut Microbiome <u>Yi-Nan Liu</u> School of Civil and Environmental Engineering, Nanyang Technological University, Singapore
D13	Bio-technology & Bio-processes	The Impact of Big Data on Precision Medicine: Prospective and Challenge <u>Ziheng Zhang</u> School of Data Science, the Chinese University of Hongkong (Shenzhen), Shenzhen, China
E14	Environmental AI & Modelling	Model Predictive Control of Batch Crystallization using Physics-Informed Machine Learning <u>Guoquan Wu</u> , Zhe Wu National University of Singapore, Singapore
E15	Environmental AI & Modelling	Adaptive robust nonlinear model predictive control for wastewater treatment process with previewed disturbances <u>Jialin Qi</u> , Xunyuan Yin Nanyang Technological University, Singapore
E16	Environmental AI & Modelling	Data-Enabled Economic Predictive control of Wastewater Treatment Processes <u>Mingxue Yan</u> , Xunyuan Yin Nanyang Technological University, Singapore

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E17	Environmental AI & Modelling	Real-time optimization of membrane bioreactor process via meta-trained adaptive Koopman modeling and economic predictive control <u>M. T. Hoang</u> , X. Li, R. Tan, M. Han, A. W.-K. Law, X. Yin Nanyang Technological University, Singapore
E18	Environmental AI & Modelling	Robust Moving Horizon Estimation via Kernel Methods for Nonlinear Systems <u>Zenghong Huang</u> , Xunyuan Yin Nanyang Technological University, Singapore
E19	Environmental AI & Modelling	Distributed state estimation for dynamical systems subject to unknown inputs <u>Ganghui Cao</u> , Xunyuan Yin Nanyang Technological University, Singapore
E20	Environmental AI & Modelling	Enhancing Data-Driven Method with Neural RPCA: Outlier Removal in Hankel Matrices <u>Jingshi Yao</u> , Xunyuan Yin Nanyang Technological University, Singapore
E21	Environmental AI & Modelling	Deep Koopman-Based Reinforcement Learning for Control of industrial processes <u>Minghao Han</u> , Mingxue Yan, Xunyuan Yin Nanyang Technological University, Singapore
E22	Environmental AI & Modelling	Process Design of Power-to-Methanol Based on Long-Term Renewable Energy Forecast Uncertainty <u>Ziqing Guo</u> , Dat-Nguyen Vo, Xunyuan Yin Nanyang Technological University, Singapore
E23	Environmental AI & Modelling	Generalizable modeling for process systems via in-context learning <u>Xiaoqiao Chen</u> , Xunyuan Yin Nanyang Technological University, Singapore
E24	Environmental AI & Modelling	Efficient operation strategy for the thermal plants via hierarchical MPC based on reduced-order Koopman modeling <u>Zihang Xu</u> , Xiaodong Xu Central South University, Changsha, China
E25	Environmental AI & Modelling	Deep bilinear Koopman model predictive control with smart tuning based on dream optimization algorithm: application on load frequency control system <u>Zijia Meng</u> , Xiaodong Xu Central South University, Changsha, China
E26	Environmental AI & Modelling	A Reinforcement Learning Approach to System Identification for HVAC Control <u>Jiajun Chen</u> , Zhantao Liang, Yuan Yuan, Xiaodong Xu, and Stevan Dubljevic Central South University, Changsha, China
E27	Environmental AI & Modelling	Robust Bidirectional Moving Horizon Estimation with Finite-Time Convergence for Linear Discrete-Time Systems <u>Zhihao Liu</u> , Xiaodong Xu Central South University, Changsha, China
E28	Environmental AI & Modelling	Sim-to-Real Reinforcement Learning for Membrane System Control <u>Yujie Shi</u> , Xunyuan Yin Nanyang Technological University, Singapore
E29	Environmental AI & Modelling	Identifying the Threshold Effect of Female Executives on Firm Performance in China's Listed Companies <u>Deyang Jing</u> , Yan Li, Linting Gu, Nazimah Hussin Universiti Teknologi Malaysia, Kuala Lumpur, Malaysia
E30	Environmental AI & Modelling	Bayesian Natural Actor-Critic Primal-Dual Method for Probabilistic-Constrained MDPs <u>Zhantao Liang</u> , Yuan Yuan, Xiaodong Xu, Stevan Dubljevic Central South University, Changsha, China
F31	Environmental Chemistry & Materials	CoO_x clusters-decorated IrO₂ electrocatalyst activates NO₃⁻ mediator for benzylic C-H activation <u>Ziyu Mi</u> , Wan Ru Leow School of Chemistry, Chemical Engineering and Biotechnology, Nanyang Technological University, Singapore; Institute of Sustainability for Chemicals Energy and Environment (ISCE2), Agency for Science, Technology and Research (A*STAR), Singapore 627833
F32	Environmental Chemistry & Materials	Bromide ions removal in seawater reverse osmosis (SWRO) desalination process <u>Pooi Ling Koo</u> , Lee Nuang Sim, Tzyy Haur Chong Singapore Membrane Technology Centre, Nanyang Environmental and Water Research Institute, Nanyang Technological University, Singapore; School of Civil and Environmental Engineering, Nanyang Technological University, Singapore
F33	Environmental Chemistry & Materials	Tailoring the Pore Surface of Covalent Organic Frameworks for Efficient Carbon Dioxide Capture <u>Jingjing Guo</u> , Yanli Zhao, Rong Wang Singapore Membrane Technology Center, Nanyang Environment and Water Research Institute, Nanyang Technological University, Singapore; School of Chemistry, Chemical Engineering and Biotechnology, Nanyang Technological University, Singapore
F34	Environmental Chemistry & Materials	Pyrrole-bearing porous network polymers synthesized via halogen-bond-assisted radical solid-phase polymerization for highly efficient and selective adsorption of lithium ion <u>Hong Tho Le</u> School of Chemistry, Chemical Engineering and Biotechnology, Nanyang Technological University, Singapore
F35	Environmental Chemistry & Materials	Electrodialysis Extraction of Lithium from Seawater Using Solid-State Electrolyte-on-Ceramic Membrane with High Areal Capacity <u>Kun Zhang</u> , Hongtian Liu, Changan Lu, Kian Ping Loh Department of Chemistry, National University of Singapore, Singapore 117543, Singapore