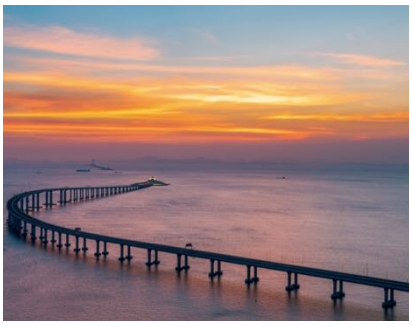
The 2nd **Greater Bay Area** Symposium on **Separation and Purification Technology** and
the 2nd **Greater Bay Area** Symposium on **Membranes and Membrane Processes**

# GBA-SPT 2023 and 2nd GBA-MMP Symposium

# Program Book



**Mode: Online**

**Date: 19-22 May, 2023**

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**Bart Van der Bruggen**
Professor
KU Leuven (Belgium)

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| **Peng-Fei Sun** | The University of Hong Kong |
| **Shuang Zheng** | The University of Hong Kong |
| **Hao Guo** | Tsinghua University Shenzhen International Graduate School |
| **Jianquan Luo** | Institute of Process Engineering, Chinese Academy of Sciences |
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| **Jiangnan Shen** | Zhejiang University of Technology |
| **Feiyun Sun** | Harbin Institute of Technology (Shenzhen) |
| **Linbin Sun** | Nanjing University of Technology |
| **Xin Tong** | Tongji University |
| **Yaoming Wang** | University of Science and Technology of China |
| **Yong Wang** | Nanjing University of Technology |
| **Chongchen Wang** | Beijing University of Civil Engineering and Architecture |
| **Jianji Wang** | Henan Normal University |
| **Li Wang** | Tongji University |
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| **Chunfei Wu** | Queen's University Belfast |
| **Liang Wu** | University of Science and Technology of China |
| **Shengji Xia** | Tongji University |
| **Zongli Xie** | Commonwealth Scientific and Industrial Research Organisation（CSIRO） |

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| **Yangying Zhao** | Xiamen University |
| **Junyong Zhu** | Zhengzhou University |

# Day 1 | 19 May, 2023 (Fri)

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|---|---|
| 08:15-08:30 | **Opening Ceremony** |
| 08:30-09:10 | **[Plenary 01]**<br>**Continuous Biomanufacturing – New Opportunities for Membrane Technology**<br>**Professor Andrew Zydney, The Pennsylvania State University**<br>Moderator: Professor Zhiwei Wang<br>Zoom link: https://elsevier.zoom.us/j/95054810770?pwd=TmN1Rzg3OUdEcVRFZVFvOE55VnJvQT09<br>Meeting ID: 950 5481 0770 Passcode: 051923 |
| 09:10-09:40 | **Coffee Break (30 mins)** |

| Zoom link | https://hku.zoom.us/j/5589696111 | https://hku.zoom.us/j/4195256654 | https://hku.zoom.us/j/3872089343 | https://hku.zoom.us/j/2108924298 |
|---|---|---|---|---|
| Sessions | Parallel 01<br>**A12-1**<br>**Bio-inspired Ion Channel** | Parallel 02<br>**A3-1**<br>**Electro-driven & Ion-exchange Membrane** | Parallel 03<br>**B5-1**<br>**Adsorptive Separation of Hydrocarbons** | Parallel 04<br>**B5-2**<br>**Adsorptive Separation of Hydrocarbons** |
| Chairs | **Shuang Zheng / Jianquan Luo** | **Yaoming Wang / Yan Zhao / Jiangnan Shen** | **Linbing Sun / Jin Shang / Zongbi Bao** | **Linbing Sun / Jin Shang / Zongbi Bao** |
| 09:40-10:05 | [KN-1] Covalent Organic Framework Membranes<br>**Prof. Jiang Zhongyi**<br>Tianjin University | [KN-1] Designing Selective Membranes and Adsorbents for Electrochemical Wastewater Refining<br>**Prof. William A. Tarpeh**<br>Stanford University | [KN-1] Microporous MOFs and HOFs for Gas Separation<br>**Prof. Banglin Chen**<br>University of Texas at San Antonio | [KN-1] Nanospace Engineering of Metal-Organic Frameworks for Selective Gas Adsorption<br>**Prof. Shengqian Ma**<br>University of North Texas |
| 10:05-10:30 | [KN-2] Bioinspired Multi-Scale Pore/Channel Systems<br>**Prof. Hou Xu**<br>Xiamen University | [KN-2] Confinement enhanced ionic transport through 2D nanochannels<br>**Prof. Xinsheng Peng**<br>Zhejiang University | [KN-2] Engineering MOF Pore Structure for Separation of Industrially Important Hydrocarbons via Molecular Sieving<br>**Prof. Jing Li**<br>Rutgers University | [KN-2] Engineering pore structure and functionality in microporous materials for hydrocarbon separation and carbon capture<br>**Prof. Huabin Xing**<br>Zhejiang University |
| 10:30-10:50 | [INV-1] Bio-inspired ion-selective channels enabled by metal-organic frameworks<br>**Prof. Huacheng Zhang**<br>RMIT University | [INV-1] Angstrom-scale Confined Ion Separation Membranes<br>**Prof. Xinya Li**<br>University of Science Technology of China | [INV-1] Light Hydrocarbons Separation in Metal-Organic Framework: Synthesis and Performance Regulation<br>**Prof. Libo Li**<br>Taiyuan University of Technology | [INV-1] Pore Engineering on Adsorbents for Gas Separations<br>**Prof. Jun Wang**<br>Nanchang University |
| 10:50-11:10 | [INV-2] Bioinspired Nano-confined Channels for Ion Transport Regulation<br>**Prof. Xiangyu Kong**<br>Technical Institute of Physics and Chemistry, CAS | [INV-2] Miscible polymer blends containing pyrrolidone moiety towards superior anion exchange membranes for diffusion dialysis<br>**Prof. Tao Luo**<br>Sichuan University | [INV-2] Metal–organic frameworks with 3D aliphatic linkers for effective separation of similar molecules<br>**Prof. Qiwei Yang**<br>Zhejiang University | [INV-2] Photomodulation on Active Sites of Adsorbents<br>**Associate Prof. Peng Tan**<br>Nanjing Tech University |
| 11:10-11:20 | **Morning Break (10 mins)** | | | |
| Sessions | Parallel 05<br>**A1-1**<br>**RO, NF, MF, UF and FO** | Parallel 06<br>**A3-2**<br>**Electro-driven & Ion-exchange Membrane** | Parallel 07<br>**C5-1**<br>**Crystallization and Evaporation** | Parallel 08<br>**C7-1**<br>**Ionic liquid: Novel Separation and Reaction Processes** |

| Chairs | Zhe Yang / Hao Guo / Ruobin Dai | Yaoming Wang / Yan Zhao / Jiangnan Shen | Xiaobin Jiang / Xin Gao | Jianji Wang / Hongyan He |
|---|---|---|---|---|
| 11:20-11:45 | [KN-1] Application of cellulose nanomaterials in water treatment membranes<br>**Prof. Langming Bai / Prof. Heng Liang**<br>Harbin Institute of Technology | [KN-1] Selective electrodialysis: a promising technology for waste acid recovery<br>**Prof. Yaoming Wang**<br>University of Science Technology of China | [KN-1] Enantiomeric separation of chiral pharmaceuticals and process intensification<br>**Prof. Junbo Gong**<br>Tianjin University | [KN-1] Highly adhesive ionic liquids<br>**Prof. Shiguo Zhang**<br>Hunan University |
| 11:45-12:10 | [KN-2] Thermodynamic mechanisms of membrane fouling and fabrication of new membranes for membrane-based water treatment process<br>**Prof. Hongjun Lin**<br>Zhejiang Normal University | [KN-2] Target Mono-valent Cation (Li+/K+) Separation via Electrodialysis with Selective Ion-Exchange Membranes<br>**Prof. Jiangnan Shen**<br>Zhejiang University of Technology | [KN-2] Study on Evaporation Process Enhanced by microwave Energy<br>**Prof. Shaohua Ju**<br>Kunming University of Science and Technology | [KN-2] Design and Applications of Ionic Liquid-based Materials for gas Separation and Recovery<br>**Prof. Shaojuan Zeng**<br>Institute of Process Engineering, CAS |
| 12:10-12:30 | [INV-1] Nanofiltration-based Membrane Bioreactor Operated under Ultra-low Flux: Fouling Behavior and Feasibility Toward a Low-Carbon System for Municipal Wastewater Reuse<br>**Dr. Shao Senlin**<br>Wuhan University | [INV-1] Novel membrane coating electrode for defluorination from groundwater via capacitive deionization<br>**Prof. Longfei Ren**<br>Shanghai Jiaotong University | [INV-1] New technology for intelligence management of solar-driven interfacial evaporation process<br>**Associate Prof. Qing-Yun Wu**<br>Sun Yat-sen University | [INV-1] Light switchable ionic liquids systems for reaction-separation coupling<br>**Associate Prof. Zhiyong Li**<br>Henan Normal University |
| 12:30-12:50 | [INV-2] Antibiofouling microfiltration membranes modified by antimicrobial peptides: antibacterial mechanisms and fabrication strategies<br>**Dr. Xingran Zhang**<br>Donghua University | [INV-2] Electro-membrane processes and engineering systems: from lab to factory<br>**Prof. Weiming Zhang**<br>Wenzhou University | [INV-2] Fluorescence-based mechanistic study on microwave induced enhancement of flash separation<br>**Dr. Zhenyu Zhao**<br>Tianjin University | [INV-2] Mechanism of Efficient Gas Separation by Ionic Liquids<br>**Associate Prof. Yanlei Wang**<br>Institute of Process Engineering, CAS |
| 12:50-14:30 | **Lunch Break (100 mins)** | | | |
| **Zoom link** | https://hku.zoom.us/j/5589696111 | https://hku.zoom.us/j/4195256654 | https://hku.zoom.us/j/3872089343 | https://hku.zoom.us/j/2108924298 |
| Sessions | Parallel 09<br>**A1-2**<br>**RO, NF, MF, UF and FO** | Parallel 10<br>**A3-3**<br>**Electro-driven & Ion-exchange Membrane** | Parallel 11<br>**A2-1**<br>**Membrane Transport Phenomena and Process Simulation** | Parallel 12<br>**A11-1**<br>**Membrane-based Water and Energy Applications** |
| Chairs | Zhe Yang / Hao Guo / Ruobin Dai | Yaoming Wang / Yan Zhao / Jiangnan Shen | Weiyi Li / Li Wang / Feiyun Sun / Xianhui Li | Xin Tong / Yangying Zhao |
| 14:30-14:55 | [KN-1] Sequential Ultrafiltration-Catalysis Membrane<br>**Prof. Jiansheng Li**<br>Nanjing University of Science & Technology | [KN-1] A new approach of using electrodialysis: colloidal adjustment and removal in aqueous phase<br>**Prof. Yang Zhang**<br>Qingdao University of Science and Technology | [KN-1] Theory of reverse osmosis of single salt solutions and the question: Which model is right, solution-diffusion, or solution-friction?<br>**Prof. Maarten Biesheuvel**<br>Wetsus, Leeuwarden, Netherlands | [KN-1] Low-carbon Integrated membrane process for ammonia recovery from waste water<br>**Prof. Le Han**<br>Chongqing University |
| 14:55-15:20 | [KN-2] Recent Advance in the Preparation of Interlayered Thin Film Nanocomposite (i-TFN) Membranes<br>**Prof. Q. Jason Niu**<br>Shenzhen University | [KN-2] Electro-driven membranes for sustainable ion-resource recovery<br>**Dr. Yan Zhao**<br>KU Leuven | [KN-2] Revisiting the pore blocking laws for membrane fouling<br>**Prof. Kang Xiao**<br>University of Chinese Academic of Science | [KN-2] Developing high performance composite membranes for water treatment<br>**Prof. Liang Shen**<br>Southwest University |

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| 15:20-15:40 | [INV-1] Investigation on the positive role of modification and structural construction of the skin layer in membrane materials for the separation performance<br>**Prof. Changkun Liu**<br>Shenzhen University | [INV-1] Ion Selective Polymeric Nano-based Membranes Modified with Confined Growth of Zeolitic Imidazolate Frameworks<br>**Prof. Yanli Ji**<br>Zhejiang University of Technology / KU Leuven | [KN-3] Pyro-layering Heterostructured Nanosheets as Molecular Sieving Membrane for Selective Hydrogen Transport<br>**Dr. Ze-Xian Low**<br>Monash University | [INV-1] Construction of high-performance nanofiltration membranes by two-dimensional metal–porphyrin frameworks<br>**Assistant Prof. Yanling Liu**<br>Tongji University |
| 15:40-16:00 | [INV-2] Porous polymer networks incorporated PTMSP membrane with enhanced selectivity for organic solvent nanofiltration (OSN)<br>**Dr. Qin Liu**<br>Jimei University, Xiamen | [INV-2] Ionic control of functional zeolitic imidazolate framework-based membrane for selectivity towards target ion<br>**Dr. Lei Xia**<br>KU Leuven | | |
| 16:00-16:20 | **Afternoon Break (20 mins)** | | | |
| Sessions | Parallel 13<br>**C7-2**<br>**Ionic liquid: Novel Separation and Reaction Processes** | Parallel 14<br>**A1-3**<br>**RO, NF, MF, UF and FO** | Parallel 15<br>**A2-2**<br>**Membrane Transport Phenomena and Process Simulation** | Parallel 16<br>**C7-3**<br>**Ionic liquid: Novel Separation and Reaction Processes** |
| Chairs | **Jianji Wang / Hongyan He** | **Zhe Yang / Hao Guo / Ruobin Dai** | **Weiyi Li / Li Wang / Feiyun Sun / Xianhui Li** | **Jianji Wang / Hongyan He** |
| 16:20-16:45 | [KN-1] Recent Progress on Processing and Functionalization of Cellulose with Ionic Liquids<br>**Prof. Jun ZHANG**<br>Institue of Chemistry, CAS | [KN-1] Temporary retention of disinfection byproducts in RO membrane: an overlook phenomenon harming long-term performance<br>**Prof. Baiyang Chen**<br>Harbin Institute of Technology | [KN-1] MXene-PVA-$TiO_2$-based photothermal-catalytic membrane with high structural stability for efficient desalination and photodegradation<br>**Prof. Alicia An**<br>City University of Hong Kong | [KN-1] Electrodialysis for the separation and purification of active ingredient from the saline eluent of Traditional Chinese Medicine<br>**Prof. Haiyang Yan**<br>Anhui University of Chinese Medicine |
| 16:45-17:10 | [KN-2] Ionic Liquid Based lignocellulosic biomass Separation and Conversion<br>**Prof. Jian Sun**<br>Beijing Institute of Technology | [KN-2] Boron Nitride Nanosheets Based Membrane for Molecular Separation<br>**Prof. Cheng Chen**<br>Auhui Agricultural University | [KN-2] Water and ion transport in electrodialysis: implications for osmotic electrolysis<br>**Asst. Prof. Qianhong She**<br>Nanyang Technological University | [KN-2] Tailoring the structure of ionic functional materials for separation<br>**Dr. Xian Suo**<br>Zhejiang University |
| 17:10-17:30 | [INV-1] Porous ionic liquids for extractive desulfurization of fuel oils<br>**Associate Prof. Peiwen Wu**<br>Jiangsu University | [INV-1] Desalination performance enhanced by in-situ growing ordered mesoporous ZIF-8 nanoparticles into thin-film composite reverse osmosis membranes<br>**Dr. Zhuo Fan Gao**<br>Changjiang River Scientific Research Institute | [INV-1] Design and preparation of the high ion conductivity film for Li+ screening<br>**Honglong Zhan**<br>Qinghai Institute of Salt lakes, CAS | [INV-1] Gas capture and separation by ionic liquid-based functional green solvents<br>**Associate Prof. Guokai Cui**<br>Zhejiang University of Technology |
| 17:30-17:50 | [INV-2] Ionic liquids-assisted construction of Prussian blue for cesium recovery from aqueous solutions<br>**Dr. Shangqing Chen**<br>Institute of Process Engineering, CAS | [INV-2] Guanidinium manipulated interfacial polymerization for Polyamide Nanofiltration Membranes with high Permselectivity<br>**Dr. Shuting Xu**<br>Chinese Academy of Sciences | [INV-2] Initial fouling behavior on the pressure-driven membrane surface with 2D and 3D patterns<br>**Dr. Wentao Shang**<br>Jinan University | [INV-2] Computer-aided screening and design of ionic liquids as advanced solvents for separation process<br>**Dr. KunChi Xie**<br>East China University of Science and Technology |
| 19:00-20:00 | **[Plenary 02]** [Co-organized with **HKU Civil Engineering Distinguished Lectures**]<br>**Membrane-Based Minus Approach to Minimize Safety Risks in Treated Drinking Water**<br>**Professor Yongsheng Chen, Georgia Institute of Technology**<br>Moderator: Professor Chuyang Tang<br>Zoom link: https://hku.zoom.us/j/99618966690 | | | |

# Day 2 | 20 May, 2023 (Sat)

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| 08:30-09:10 | [Plenary 03]<br>**Development of Anti-fouling Methods in MBRs**<br>**Professor How Yong Ng, Beijing Normal University**<br>Moderator: Professor Zhiwei Wang<br>Zoom link: https://elsevier.zoom.us/j/95054810770?pwd=TmN1Rzg3OUdEcVRFZVFvOE55VnJvQT09<br>Meeting ID: 950 5481 0770 Passcode: 051923 | | | | |
| 09:10-09:40 | **Coffee Break (30 mins)** | | | | |
| Zoom link | https://hku.zoom.us/j/6963304751 | https://hku.zoom.us/j/8255481112 | https://hku.zoom.us/j/8023365568 | https://hku.zoom.us/j/5526676348 | https://hku.zoom.us/j/4061787789 |
| Sessions | Parallel 17<br>**C1-1**<br>**Data Science/Artificial Intelligence** | Parallel 18<br>**C4-3**<br>**Ions Separation** | Parallel 19<br>**B1-1**<br>**Biomass, Bioproduct, and Bioenergy** | Parallel 20<br>**A4-1**<br>**Two-dimensional Membrane Materials and Processes** | Parallel 21<br>**A**<br>**Membrane-based Separation** |
| Chairs | **Yongsheng Chen / Xiaonan Wang** | **Yong Wang / Shihong Lin / Yan Zhao** | **Benkun Qi / Ranil Wickramasinghe / Xiaoqing Lin** | **Yanying Wei / Kaige Zhou / Xin Li** | **Zhe Yang / Peng-Fei Sun** |
| 09:40-10:05 | [KN-1] Modeling environmentally relevant chemical reactions with machine learning<br>**Prof. Judy Zhang**<br>Case Western University | [KN-1] Design of polyamide membranes for precise ion separation<br>**Prof. Jian Jin**<br>University of Science and Technology of China | [KN-1] Model-assisted process development of ion-exchange chromatography for protein separation<br>**Prof. Dongqiang Lin**<br>Zhejiang University | [KN-1] Responsive 2D Membranes for Liquid Gating and Smart Molecular Separation<br>**Prof. Yong Zhao**<br>Beihang University | [KN-1] Study on continuous preparation of membranes for bioseparation with nips+vips integrated process<br>**Prof. Hongchen Song**<br>Guangzhou Institute of Advanced Technology |
| 10:05-10:30 | [KN-2] Generative Artificial Intelligence and It's Potential Environmental Applications<br>**Prof Ming Xu**<br>Tsinghua University | [KN-2] Nanofiltration membranes for Mg2+/Li+ separation<br>**Prof. Qiang Zhao**<br>Huazhong University of Science and Technology | [KN-2] Designing green processes for efficiency fractionation and transformation of lignocellulosic components<br>**Prof. Zhimin Xue**<br>Beijing Forestry University | [KN-2] Mass transport at nanoscale for osmotic power generation<br>**Prof. Sheng Hu**<br>Xiamen University | [KN-2] Fermentation coupled with pervaporation membrane separation for bioalcohols production--from fundamental to pilot<br>**Prof. Senqing Fan**<br>Sichuan University |
| 10:30-10:50 | [INV-1] Exploring the Knowledge Attained by Machine Learning on Organics and Ion Transport across Polyamide Membranes Using Explainable Artificial Intelligence<br>**Assistant Prof. Tiezheng Tong**<br>Colorado State University | [INV-1] A novel positively charged nanofiltration membrane stimulated by amino-functionalized MXene Ti3C2Tx for high rejection of water hardness ions<br>**Prof. Jianfeng Zhang**<br>Hohai University | [INV-1] Separation and purification of glabridin from a deep eutectic solvent extract of Glycyrrhiza glabra residue by macroporous resin and its mechanism<br>**Prof. Jun Zhou**<br>Nanjing Tech University | [INV-1] MXene stacks with adjustable interlayer distance for precise molecular separation<br>**Prof. Jian Li**<br>Jiangnan University | [INV-1] Hybrid capacitive deionization for superior lithium recovery from brine<br>**Dr. J. Si**<br>Xinjiang University |
| 10:50-11:10 | [INV-2] Computer-aided solvent design combining computational chemistry and machine learning method<br>**Prof. Lei Zhang**<br>Dalian University of | [INV-2] Preparation of Adsorptive Membranes for Cesium Adsorption<br>**Prof. Zhiqian Jia**<br>Beijing Normal University | [INV-2] Comprehensive reutilization of Herbal Extraction Residues (HERs) for high value–added chemical production<br>**Associate Prof. Caixia Wang**<br>Institute of Chinese | [INV-2] Reduced graphene oxide and its membrane for highly-efficient gold recovery<br>**Prof. Yang SU**<br>Tsinghua University | [INV-2] Ionic liquid-Induced Deep Grafting of Polyelectrolyte to Reform Polyamide Layer of Nanofiltration Membrane<br>**Dr. Lulu Liu**<br>Institute of Process |

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| | Technology | | Materia China Academy of Chinese Medical Sciences | | Engineering, CAS |
| 11:10-11:20 | Morning Break (10 mins) | | | | |
| Sessions | Parallel 22<br>**C2-1**<br>**Electrochemical Separations** | Parallel 23<br>**C4-2**<br>**Ions Separation** | Parallel 24<br>**A4-4**<br>**Two-dimensional Membrane Materials and Processes** | Parallel 25<br>**A4-2**<br>**Two-dimensional Membrane Materials and Processes** | Parallel 26<br>**A**<br>**Membrane-based Separation** |
| Chairs | **Jinxing Ma / Changyong Zhang / Xiaowei Yang / Xiaogang Hao** | **Yong Wang / Shihong Lin / Yan Zhao** | **Yanying Wei / Kaige Zhou / Xin Li** | **Yanying Wei / Kaige Zhou / Xin Li** | **Zhe Yang / Peng-Fei Sun** |
| 11:20-11:45 | [KN-1] Transport selectivity of like-charged ions in hydrophobic-polymer-modified ion-exchange membranes<br>**Prof. Xitong Liu**<br>George Washington University | [KN-1] Separation: fast and slow<br>**Prof. Tao He**<br>Shanghai Advanced Research Institute, CAS | [KN-1] Electrically Modulated Smart Nanofiltration Membrane Based on Reduced Graphene<br>**Prof. Kaige Zhou**<br>Tianjin University | [KN-1] Monolayer and laminar 2D membranes for challenging separations<br>**Prof. Sui Zhang**<br>National University of Singapore | [KN-1] Catalytic membrane with enhanced purification and anti-fouling performance<br>**Dr. Yu Yang**<br>Beijing Normal University |
| 11:45-12:10 | [KN-2] Supported ionic liquid membrane contactor for Mg2+/Li+ selective separation from aqueous solution<br>**Prof. Jianxin Li**<br>Tiangong University | [KN-2] Ensemble machine learning reveals key features governing ion selectivity of polyamide nanofiltration membranes<br>**Prof. Lin Zhang**<br>Zhejiang University | [KN-2] Lamellar membranes with regular channels for highly efficient solvent permeation<br>**Prof. Jingtao Wang**<br>Zhengzhou University | [KN-2] Mass Transport Based on Covalent Organic Frameworks<br>**Prof. Xiao Feng**<br>Beijing Institute of Technology | [KN-2] Hierarchically oriented anode with open, straight pores for efficient protonic ceramic fuel cell<br>**Dr. Tong Liu**<br>Wuhan Institute of Technology |
| 12:10-12:30 | [KN-3] Development of membrane capacitive deionization technology for desalination and water reclamation: From Fundamental Investigation onto pilot-scale demonstration<br>**Prof. Chia-Hung Hou**<br>National Taiwan University | [INV-1] Development of Highly Selective Monovalent Ion Transport Enabled by Self-assembled High-performance Cation Exchange Membrane<br>**Prof. Yuqing Lin**<br>East China University of Science and Technology | [INV-1] Constructing a Hierarchical hydrophilic Crosslink Network on the Surface Of a polyvinylidene Fluoride Membrane for Efficient Oil/Water Emulsion Separation<br>**Dr. Ruixian Zhang**<br>Guangxi Minzu University | [INV-1] Design and construction of two-dimensional channels for sieving strategic element<br>**Prof. Zhan Li**<br>Lanzhou University | [INV-1] Superior performance C 9N7 nanosheets for CO2 /C2H2 separation by combining charge and strain strategy<br>**Dr. Xue Li**<br>China University of Petroleum-Beijing |
| 12:30-12:50 | [INV-2] Defect engineering in effective photoelectrode design<br>**Dr. Zhiliang Wang**<br>The University of Queensland | [INV-2] Mono-valent Anion Selective Ion-Exchange Membranes: From Heterogeneous Structure to Homogeneous Structure<br>**Prof. Junbin Liao**<br>Zhejiang University of Technology | [INV-2] Fast hydrogen purification through graphitic carbon nitride nanosheet membranes<br>**Dr. Jian Xue**<br>South China University of Technology | [INV-2] Two-dimensional covalent organic framework nanosheets for advanced gas separation membranes<br>**Prof. Guangwei He**<br>Tianjin University | [INV-2] Diffusion mechanism of co-solvent-mediated interfacial polymerization for nanofiltration membrane<br>**Dr. Yinlu Ye**<br>Ningbo Institute of Materials Technology and Engineering, CAS |
| 12:50-14:30 | Lunch Break (100 mins) | | | | |
| **Zoom link** | https://hku.zoom.us/j/6963304751 | https://hku.zoom.us/j/8255481112 | https://hku.zoom.us/j/8023365568 | https://hku.zoom.us/j/5526676348 | https://hku.zoom.us/j/4061787789 |
| Sessions | Parallel 27<br>**C3-1**<br>**Extractive Separations** | Parallel 28<br>**C4-1**<br>**Ions Separation** | Parallel 29<br>**B2-1**<br>**Adsoption-based Gas Separation and CO2** | Parallel 30<br>**A4-3**<br>**Two-dimensional Membrane Materials and** | Parallel 31<br>**B**<br>**Adsorption-based Separation** |

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| | | | Capture | Processes | |
| Chairs | Qiwei Yang / Xiaoqing Lin | Yong Wang / Shihong Lin / Yan Zhao | Chunfei Wu / Jin Shang / Yanguang Chen / Xia Jiang | Yanying Wei / Kaige Zhou / Xin Li | Yan Zhao / Shuang Zheng |
| 14:30-14:55 | [KN-1] Machine Learning Based Solvent Property Prediction and High-Throughput Screening for Extraction Processes<br>**Prof. Zhiwen Qi**<br>East China University of Science and Technology | [KN-1] Advanced reduction as key techniques for the degradation of pollutants of emerging concern<br>**Prof. Raf Dewil**<br>University of Oxford & KU Leuven | [KN-1] Li4SiO4 Sorbents from Spent Li-Ion Batteries and Application in ICCU-Methanation<br>**Prof. Changlei Qin**<br>Chongqing University | [KN-1] Crystalline Porous Organic Membranes<br>**Prof. Qi Sun**<br>Zhejiang Universoty | [KN-1] Effect of biomass adsorbent on non-thermal plasma activated treatment of oil-based drilling cutting<br>**Prof. Shaojun Xu**<br>Hefei University of Technology |
| 14:55-15:20 | [KN-2] Extraction and separation of bioactive compounds using liquid-liquid and solid-liquid extraction systems based on ionic liquids and deep eutectic solvents<br>**Prof. Zhijian Tan**<br>Chinese Academy of Agricultural Sciences | [KN-2] Construction of ion-selective transport channels in membranes for flow batteries<br>**Prof. Gaohong He**<br>Dalian University of Technology | [KN-2] Development of adsorption processes for methane and helium recovery<br>**Prof. Gongkui Xiao**<br>The University of Western Australia | [KN-2] External Fields Regulated Ion Transport in Functional Two-Dimensional Materials<br>**Prof. Xiangyu Kong**<br>Technical Institute of Physics & Chemistry, CAS | [KN-2] Construction of nonporous adaptive crystal materials of hybridarenes and study on their adsorption and separation of hydrocarbons<br>**Prof. Jiong Zhou**<br>Northeastern University |
| 15:20-15:40 | [INV-1] Micro-environment in ionic liquids enhanced selective separation of typical natural product<br>**Prof. Hui Wang**<br>Institute of Process Engineering, CAS | [KN-3] Covalent Organic Framework Membranes for Molecular Separation in Liquids<br>**Dr. Xiansong Shi**<br>National University of Singapore | [INV-1] Amine impregnation on oxidized commercial<br>**Prof Liying Liu**<br>Northeastern University | [INV-1] Bioinspired two-dimensional materials gating separation membranes<br>**Prof. Jingchong Liu**<br>University of Science ang Technology Beijing | [INV-1] Stable LDH membrane assisted by interlayer lanthanum alginate pillar for preferable phosphate removal<br>**Dr. Jing Yang**<br>Shandong University of Technology |
| 15:40-16:00 | [INV-2] Valence extraction: Inspired by the extraction order of different valences of metal ions<br>**Prof. Guoping Hu**<br>Ganjiang Innovation Academy, CAS | | [INV-2] Multiscale simulation of atomic layer deposition for fabrication of gas separation membranes<br>**Dr. Liwei Zhuang**<br>East China University of Science and Technology | [INV-2] Voltage-mediated water dynamics enables on-demand transport of monosaccharide in two-dimensional channels<br>**Prof. Xiaoli Zhao**<br>Tongji University | [INV-2] Membrane pre-concentration as an efficient tool to enhance the enrichment of rare earth by MgO precipitation<br>**Dr. Yuxuan Liu**<br>Ganjiang Innovation Academy, CAS |
| 16:00-16:20 | Afternoon Break (20 mins) | | | | |
| Sessions | Parallel 32<br>**C6-1**<br>**Advanced Distillation** | Parallel 33<br>**C8-1**<br>**Oil/Water Separation** | Parallel 34<br>**B4-1**<br>**Heavy Metal Removal** | Parallel 35<br>**A9-1**<br>**MD, Pervaporation, Hydrophobic Membrane, and Processes** | Parallel 36<br>**C**<br>**Green and sustainable separation and purification technology** |
| Chairs | Xin Gao / Weifeng Shen | Wangliang Li / Shuang Zheng / Liangliang Dong | Chongchen Wang / Zhongying Wang / Jing Xiao | Xiaobin Jiang / Shuangliang Zhao / Jiahui Shao / Zhangxin Wang | Yan Zhao / Shuang Zheng |
| 16:20-16:45 | [KN-1] Optimization and Control of Dividing Wall Column for Fractionation of Fluid Catalytic Cracking Gasoline<br>**Prof. Lanyi Sun**<br>China University of Petroleum (Huadong) | [KN-1] Construction of advanced membranes for highly-efficient oil-water separations<br>**Prof. Lu Shao**<br>Harbin Institute of Technology | [KN-1] Reliable Metal Stabilization and Recovery Strategies Assisted by Quantitative Mineral Phase Analysis Technique<br>**Prof. Kaimin Shih**<br>The University of Hong Kong | [KN-1] Slippery superhydrophobic membranes: Scaling, wetting resistance<br>**Prof. Tao He**<br>Shanghai Advanced Research Institute | [KN-1] Selective capacitive deionization in Pseudocapacitor Electrode<br>**Prof. Hongjian Zhou**<br>Institute of Solid State Physics, CAS |
| 16:45-17:10 | [KN-2] The hybrid reactive-extractive distillation: Challenges and | [KN-2] Bio-inspired Super-Wetting Nanofibers Membranes for Liquid | [KN-2] Highly selective capture of lithium ions in wastewater by | [KN-2] Computational insights on molecular transport in nanopores | [KN-2] Layered Double Hydroxides with Enhanced Interlayer |

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| | | opportunities<br><br>**Prof. Zongyang Kong / Dr. Ao Yang**<br>Sunway University, Malaysia | | Separation<br><br>**Prof. Yong Zhao**<br>Beihang University | | directionally self-assembled fluorine-functionalized organic polymer hydrogels<br><br>**Prof. Liming Yang**<br>Nanchang Hangkong University | | <br><br>**Prof. Shuangliang Zhao**<br>Guangxi University | | Space for Electrochemical Energy Storage and Deionization<br><br>**Prof. Yang Wang**<br>Tianjin University |
| 17:10-17:30 | [INV-1] | Integrated metal-organic framework and pressure-swing adsorption process design<br><br>**Prof. Teng Zhou**<br>The Hong Kong University of Science and Technology (Guangzhou) | [INV-1] | Superwetting Porous Membranes for Separation of Immiscible Liquids<br><br>**Prof. Wang Yang**<br>Jilin University | [INV-1] | Functionalization of metal-organic frameworks for selective capture of heavy metal ions<br><br>**Prof. Xudong Zhao**<br>Taiyuan University of Science and Technology | [INV-1] | Integrated membrane electrochemical reactor-membrane distillation process for enhanced landfill leachate treatment<br><br>**Prof. Zhongsen Yan**<br>Fuzhou University | [INV-1] | Structural Designing of Organic Solvent Nanofiltration Membranes for Precise Molecular Separation<br><br>**Pof. Yi Li**<br>Sun Yat-sen University |
| 17:30-17:50 | [INV-2] | Monte Carlo Simulation on the Vapor-Liquid Equilibrium for Uranium hexafluoride Distillation<br><br>**Prof. Dongyang Li**<br>Zhengzhou University | [INV-2] | Self-cleaning superhydrophobic photocatalytic PDMS/BiOBr@Fe hierarchical microsphere-nanofiber hybrid membrane fabrication for oil/water separation<br><br>**Dr. Jiaxin Guo**<br>Xi'an Jiaotong University | [INV-2] | Capacitive Deionization: An Emerging Electrochemical Platform for Metal Ions Capture<br><br>**Prof. Xingtao Xu**<br>Zhejiang Ocean University | [INV-2] | Emerging photothermal membrane distillation (PMD) process and engineering membranes with different surface wettability to alleviate membrane scaling<br><br>**Prof. Yuan Liao**<br>Nankai University | [INV-2] | Acid resistance amyloid lysozyme assembly-mediated surface functionalization of magnetic spheres for highly efficient removal of Cr(VI)<br><br>**Dr. Zehong Li**<br>Xi'an Jiaotong University |

# Day 3 | 21 May, 2023 (Sun)

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| 08:30-09:10 | [Plenary 04]<br>**MXene Membrane for Separation**<br>**Professor Haihui Wang, Tsinghua University**<br>Moderator: Professor Shouliang Yi<br>Zoom link: https://elsevier.zoom.us/j/95054810770?pwd=TmN1Rzg3OUdEcVRFZVFvOE55VnJvQT09<br>Meeting ID: 950 5481 0770 Passcode: 051923 | | | |
| 09:10-09:40 | **Coffee Break (30 mins)** | | | |
| Zoom link | https://hku.zoom.us/j/4885873175 | https://hku.zoom.us/j/3020606026 | https://hku.zoom.us/j/4071802183 | https://hku.zoom.us/j/7890648653 |
| Sessions | Parallel 37<br>**A12-2**<br>**Bio-inspired Ion Channel** | Parallel 38<br>**A10-1**<br>**Integrated Membrane Processes and Membrane Antifouling Strategies** | Parallel 39<br>**A5-1**<br>**Novel Membrane Materials and Processes** | Parallel 40<br>**A11-2**<br>**Membrane-based Water and Energy Applications** |
| Chairs | **Shuang Zheng / Jianquan Luo** | **Hongjun Lin / Shipeng Sun / Peng-Fei Sun** | **Yanshuo Li / Gongping Liu / Zhongde Dai** | **Xin Tong / Yangying Zhao** |
| 09:40-10:05 | [KN-1] Biomimetic micro/nanochannel materials and devices<br>**Prof. Liping Wen**<br>Technical Institute of Physics and Chemistry, CAS | [KN-1] Contribution of heterotrophic denitrification in a hydrogen-based membrane biofilm reactor treating nitrate contaminated groundwater<br>**Prof. Hee-Deung Park**<br>Korea University | [KN-1] Ultraselective polymer membranes for enhanced carbon capture<br>**Prof. Richard Spontak**<br>NC State University | [KN-1] Breathable Superhydrophobic Surface by Sparsely-aligned Electrospun Fibers with Nanopores<br>**Prof. Hesheng Yu, Prof. Zhongchao Tan**<br>China University of Mining and Technology |
| 10:05-10:30 | [KN-2] Bioinpired superspreading interfaces and their applications in membrane seperation<br>**Prof. Tian Ye**<br>Technical Institute of Physics and Chemistry, CAS | [KN-2] Application of membrane processes in lithium resource extraction<br>**Prof. Min Wang**<br>Qinghai Institute of Salt Lakes, Chinese Academy of Sciences | [KN-2] Microporous membranes for the energy revolution<br>**Prof. Zhi Xu**<br>East China University of Science and Technology | [KN-2] Nanomaterials applied in Water treatment membranes: An evolution from additives to construction material<br>**Associate Prof. Langming Bai**<br>Harbin Institute of Technology |
| 10:30-10:50 | [INV-1] Anomalous Ion Transport across Angstrom-scale 2D Channels<br>**Dr. Mingzhan Wang**<br>University of Chicago | [INV-1] Ion-distillation for isolating lithium from lake brine<br>**Associate Prof. Chenxiao Jiang**<br>University of Science and Technology of China | [INV-1] In Situ Synthesis of Large-Area Graphdiyne-Based Composite Membranes for Nanofiltration<br>**Prof. Hongwei Fan**<br>Beijing University of Chemical Technology | [INV-1] Advanced oxidation processes coupled with ceramic membrane for water purification<br>**Assiciate Prof. Yueping Bao**<br>Nankai University |
| 10:50-11:10 | [INV-2] Construction of Bioinspired Membranes and Their Application in Efficient Salinity Gradient Energy Conversion<br>**Dr. Weipeng Chen**<br>Technical Institute of Physics and Chemistry, CAS | [INV-2] Development of antifouling membranes with greener approaches<br>**Associate Prof. Wai Fen Yong**<br>Xiamen University Malaysia | [INV-2] Incorporation of Crown ether-an Effective Method for Tuning the Pore Stucture of Polyimide Membrane<br>**Prof. Chunhai Yi**<br>Xi'an Jiaotong University | [INV-2] Engineering nanoporous block copolymer membranes toward ultrafast molecular separation<br>**Prof. Leiming Guo**<br>Donghua University |
| 11:10-11:20 | **Morning Break (10 mins)** | | | |
| Sessions | Parallel 41<br>**C10-1**<br>**Advanced Oxidation Technology** | Parallel 42<br>**C10-2**<br>**Advanced Oxidation Technology** | Parallel 43<br>**C11-1**<br>**3D printing technology for novel membrane technology and** | Parallel 44<br>**A7-2**<br>**Membrane Fabrication and Characterization** |

| | | | structuring absorbents | |
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| Chairs | Xiyan Xu / Baiwen Ma | Xiyan Xu / Baiwen Ma | Jin Shang / Zhe Yang / Libo Li | Fusheng Pan / Xuesong Li / Junyong Zhu |
| 11:20-11:45 | [KN-1] Carbon nanotube electrified membranes for contaminant degradation and transformation in water<br>**Assistant Prof. Xiaoxiong Wang**<br>Tsinghua University | [KN-1] Actinide Separation over Lanthanides via Aluminium Cathode Based Electrolysis in LiCl-KCl eutectic<br>**Prof. Weiqun Shi**<br>The Institute of High Energy Physics, CAS | [KN-1] Design of 3D-printed Monolithic Agitating Paddles for Adsorption and Catalysis Applications<br>**Prof. Guowu Zhan**<br>Huaqiao University | [KN-1] In situ visualization of membrane fouling evolution during ultrafiltration using label-free optical approaches<br>**Prof. Meng Zhang**<br>Beihang University |
| 11:45-12:10 | [KN-2] Alumina membrane catalysts for fenton-like oxidation of emerging organic pollutants from water<br>**Associate Prof. Yan Wang**<br>RCEES, CAS | [KN-2] Adsorptive-catalytic treatment of pollutants in waters<br>**Associate Prof. Xiyan Xu**<br>Beijing Institute of Technology | [KN-2] Polyamide membranes fabricated by selective laser sintering for oill water separation<br>**Prof. Shushan Yuan**<br>Huazhong University of Science and Technology | [KN-2] Lamellar membranes with regular channels for highly efficient solvent permeation<br>**Prof. Jingtao Wang**<br>Zhengzhou University |
| 12:10-12:30 | [INV-1] Solar-driven Wastewater Resourcation<br>**Prof. Qingyi Zeng**<br>University of South China | [INV-1] Degradation of microcystins in water using catalysts<br>**Prof./Vice Dean Xinjiang Hu**<br>Central South University of Forestry and Technology | [INV-1] Designing and Constructing Hierarchically Monolithic Zeolites Based on 3D Printing Technology<br>**Dr. Shuang Wang**<br>Luoyang Normal University | [INV-1] Hydrophilic microporous polymer membranes for fast ionic and molecular separations<br>**Prof. Wangxi Fang**<br>Suzhou Institute of Nano-Tech and Nano-Bionics |
| 12:30-12:50 | [INV-2] Membrane fouling alleviation by combination of sodium percarbonate (SPC) oxidation and coagulation during microfiltration of shale gas produced water<br>**Associate Prof. Haiqing Chang**<br>Sichuan University | [INV-2] Activation of periodate by chalcopyrite for efficient degradation of tetracycline hydrochloride<br>**Prof. Ying Xiong**<br>Changsha University of Science and Technology | [INV-2] 3D-printed Monolithic Agitating Paddles with Nanomaterials for Advanced Oxidation Process and Adsorption Applications<br>**Dr. Zining Zhou**<br>Huaqiao University | [INV-2] Degradation of polyamide nanofiltration membranes by free chlorine and halide ions: kinetics, mechanisms, and implications<br>**Associate Prof. Linyan Yang**<br>East China University of Science and Technology |
| 12:50-13:10 | [INV-3] Controllable valence regulation of metal nodes in metal-organic framework for selective adsorption<br>**Dr. Yu-Xia Li**<br>Nanjing Tech University | [INV-3] Single-atom Ru loaded on layered double hydroxide catalyzes peroxymonosulfate for effective E. coli inactivation<br>**Assistant Prof. Jiajia Wang**<br>Hunan University | | |
| 13:10-14:30 | **Lunch Break (80 mins)** | | | |
| **Zoom link** | https://hku.zoom.us/j/4885873175 | https://hku.zoom.us/j/3020606026 | https://hku.zoom.us/j/4071802183 | https://hku.zoom.us/j/7890648653 |
| Sessions | Parallel 45<br>**A6-1**<br>**Inorganic Membrane for Gas and Liquid Separations** | Parallel 46<br>**B3-1**<br>**Resource Recovery** | Parallel 47<br>**A7-1**<br>**Membrane Fabrication and Characterization** | Parallel 48<br>**A8-1**<br>**Membrane-based Gas Separations and CO2 Capture** |
| Chairs | Yi Liu / Xuefeng Zhu | Yu Liu / Chao He / Jianming Pan | Fusheng Pan / Xuesong Li / Junyong Zhu | Yatao Zhang / Heqing Jiang / Xuerui Wang / Canghai Ma |
| 14:30-14:55 | [KN-1] Molecular sieve membranes made of multi-dimensional building blocks<br>**Prof. Weishen Yang**<br>Dalian Institute of Chemical Physics | [KN-1] Photocatalytic Green Recovery of Precious Metals from Solid Waste<br>**Prof. Zhenfeng Bian**<br>Shanghai Normal University | [KN-1] Modulating the interfacial polymerization process for advanced separation membranes<br>**Prof. Hong Wu**<br>Tianjin University | [KN-1] Constructing low-resistance gas transmission pathway in MMMs for CO2 capture<br>**Prof. Gaohong He**<br>Dalian University of Technology |
| 14:55-15:20 | [KN-2] Industrialization of hollow fiber zeolite membranes for organic | [KN-2] Photocatalytic recovery of organophosphorus pollutant to | [KN-2] Interfacial engineering of the microporous materials towards | [KN-2] Design and Fabrication of CO2 Separation Membranes |

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| | dehydration<br>**Prof. Xuehong Gu**<br>Nanjing Tech University | gaseous fuels enabled by selective C-X bond scission<br>**Prof. Hu Li**<br>Guizhou University | more efficient separation<br>**Prof. Jingwei Hou**<br>University of Queensland | **Prof. Canghai Ma**<br>Dalian University of Technology |
| 15:20-15:40 | [INV-1] Highly stable ceramic membranes for hydrogen purification<br>**Prof. Heqing Jiang**<br>Qingdao Institute of Bioenergy and Bioprocess Technology | [INV-1] Experimental and DFT studies for the selective separation of scandium (III) from rare earth elements using novel quaternary ammonium based ionic liquids.<br>**Dr. Vishakha Kaim**<br>Tampere University, Finland | [INV-1] High-flux loose nanofiltration membranes for efficient separation of dye/salt mixtures<br>**Prof. Junyong Zhu**<br>Zhengzhou University | [INV-1] Controlling transport pathway of microporous membranes for gas separation<br>**Associate Prof. Wanbin Li**<br>Jinan University |
| 15:40-16:00 | [INV-2] Microporous Materials for Gas Separation Membranes<br>**Prof. Xiaoqin Zou**<br>Northeast Normal University | [INV-2] Recent advances in transforming waste into functional materials for environmental catalysis<br>**Dr. Wen Da Oh**<br>Universiti Sains Malaysia | [INV-2] Oriented covalent organic framework membranes for ion transport and osmotic energy conversion<br>**Dr. Li Cao**<br>KAUST | [INV-2] Management of Liquids for Reliable CO2 Separation Membranes<br>**Associate Prof. Yifan Li**<br>Zhengzhou University |
| 16:00-16:20 | **Afternoon Break (20 mins)** | | | |
| Sessions | Parallel 49<br>**A6-2**<br>**Inorganic Membrane for Gas and Liquid Separations** | Parallel 50<br>**B3-2**<br>**Resource Recovery** | Parallel 51<br>**A5-2**<br>**Novel Membrane Materials and Processes** | Parallel 52<br>**A8-2**<br>**Membrane-based Gas Separations and CO2 Capture** |
| Chairs | **Yi Liu/Xuefeng Zhu** | **Yu Liu/Chao He/Jianming Pan** | **Yanshuo Li/Gongping Liu/Zhongde Dai** | **Yatao Zhang/Heqing Jiang/Xuerui Wang/Canghai Ma** |
| 16:20-16:45 | [KN-1] Solid Lithium Superconductive Membranes for Seawater Lithium Extraction<br>**Prof. Zhiping Lai**<br>KAUST | [KN-1] Functional Porous Materials for Separation and Enrichment of Radionuclides<br>**Prof. Daoben Hua**<br>Soochow University | [KN-1] Covalent Organic Framework Membranes<br>**Prof. Zhongyi Jiang**<br>Tianjin University | [KN-1] Network Polymer Membranes for Hot H2 Purification<br>**Prof. Xinlei Liu**<br>Tianjin University |
| 16:45-17:10 | [KN-2] Monolithic zeolite membranes for gas separation<br>**Prof. Rongfei Zhou**<br>Nanjing Tech University | [KN-1] Application of Selectively Imprinted Adsorbent Materials in Urban Mine Resourceization<br>**Prof. Xudong Zheng**<br>Changzhou University | [KN-2] Scalable synthesis of atomic thick membrane for carbon capture<br>**Dr. Kumar Varoon Agrawal**<br>École Polytechnique Fédérale de Lausanne (EPFL) | [KN-2] Hierarchically microporous membranes for advanced helium recovery from natural gas<br>**Prof. Shuangjiang Luo**<br>Institute of Process Engineering, CAS |
| 17:10-17:30 | [KN-3] Engineering of Molecule-Level Crystal Boundary Structures for Molecular Sieve MOF Membranes<br>**Prof. Yujie Ban**<br>Dalian Institute of Chemical Physics | [KN-3] Bioinspired construction of magnetic nanorobots for rapid capture of precious metals<br>**Prof. Hao Li**<br>Jiangsu university | [INV-1] Novel MOF glass membranes for selective gas separation<br>**Prof. Hua Jin**<br>Ningbo University | [INV-1] Advanced Porous Materials in Mixed Matrix Membranes forEfficient CO2 Capture<br>**Dr. Youdong Chen**<br>KAUST |
| 17:30-17:50 | | | [INV-2] Bifunctional membrane nanochannels for blood separation and diagnosis<br>**Prof. Zhenyu Chu**<br>Nanjing Tech University | [INV-2] Remarkable gas separation performance of a thermally rearranged membrane derived from an alkynyl self-crosslinkable precursor<br>**Prof. Xiaohua Ma**<br>Tiangong University |

# Day 4 | 22 May, 2023 (Mon)

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| 08:30-09:10 | [Plenary 05]<br>**Ultramicroporous Ion-exchange Membranes Enables Long-term Operation in Electrochemical Energy Devices**<br>**Professor Tongwen Xu, University of Science & Technology of China**<br>Moderator: Professor Shouliang Yi<br>Zoom link: https://elsevier.zoom.us/j/95054810770?pwd=TmN1Rzg3OUdEcVRFZVFvOE55VnJvQT09<br>Meeting ID: 950 5481 0770 Passcode: 051923 | | | |
| 09:10-09:30 | **Coffee Break (20 mins)** | | | |
| Zoom link | https://hku.zoom.us/j/9047994513 | https://hku.zoom.us/j/2262728525 | https://hku.zoom.us/j/2197667700 | https://hku.zoom.us/j/8505055222 |
| Sessions | Parallel 53<br>**Student-A1**<br>**RO, NF, MF, UF and FO** | Parallel 54<br>**Student-A3**<br>**Electro-driven Membrane Technology and Ion-exchange Membrane** | Parallel 55<br>**Student-B2&3**<br>**Adsorption-based Gas Separation and CO2 capture, Resource Recovery** | Parallel 56<br>**Student-C1, 7, 8, 11**<br>**Separation and purification technology** |
| Chairs | **Lu Elfa Peng** | **Yan Zhao** | **Hai Zhu / Lingyue Zhang** | **Shuang Zheng** |
| 09:30-09:45 | [Oral-1] Does surface roughness necessarily increase fouling propensity of polyamide reverse osmosis membranes by humic acid?<br>**Qimao Gan**<br>The University of Hong Kong | [Oral-1] Ionic resource capture from semiconductor wastewaters using a dual-driven membrane system<br>**Yangbo Qiu**<br>Shanghai Jiao Tong University | [Oral-1] U-Co bimetallic MOFs materials are used in the study of SO2/CO2 separation<br>**Liecheng Guo**<br>East China University of Technology | [Oral-1] Multi-scale calculation based on process simulation to screen zeolites on PSA air separation<br>**Boyan Wen**<br>Wuhan Institute of Technology |
| 09:45-10:00 | [Oral-2] Removal of tramadol hydrochloride, an emerging pollutant, from aqueous solution using gamma irradiation combined by nanofiltration<br>**Sabrine Ghazouani**<br>University of Carthage | [Oral-2] Electrodialysis for simultaneously pre-treating wastewater and enriching ammonium nutrient: Investigation of cation transport behaviors<br>**Dingchang Yang**<br>Nanyang Technological University | [Oral-2] Tandem vacuum pressure swing adsorption for efficient ethylene separation<br>**Shuai Yuan**<br>SINOPEC Research Institute of Petroleum Processing Co.,LTD | [Oral-2] Scalable and switchable CO2-responsive membranes with high wettability for separation of various oil/water systems<br>**Yangyang Wang**<br>Jiangnan University |
| 10:00-10:15 | [Oral-3] Confined and mediated intercalation of nanoparticles in graphene oxide membrane to fine-tune desalination performance<br>**Siyu Zhou**<br>Kobe University | [Oral-3] Surface Modification of MOF-808 for Efficient Heavy Metal Adsorption<br>**Xiulei Li**<br>Beijing Normal University | [Oral-3] Ionic liquid-based biphasic solvents for CO2 capture and anti-corrosion<br>**Jiaming Mao**<br>Beijing Forestry University | [Oral-3] Hydrogen-bonded scissors cut and pull the interfacial film for efficient oil/water separation<br>**Yuxuan Tian**<br>Northeast Petroleum University |
| 10:15-10:30 | [Oral-4] N.A.<br>**Shu-Ya Pang**<br>Southwest petroleum university | [Oral-4] Specific Ion Selectivity in Sulfonated Polystyrene Membranes Near the Percolation Threshold<br>**Yuxuan Huang**<br>Columbia University | [Oral-4] Adsorption properties of CO2/N2 and CO2/CH4 binary systems in Zr-based MOFs containing nitrogen<br>**Wenyu Li**<br>Wuhan Institute of Technology | [Oral-4] Bioinspired Superwettable Membranes for Highly Efficient Separation of Oil/Water Emulsions<br>**Jian Li**<br>Northwest Normal University |
| 10:30-10:45 | [Oral-5] Improving permeability and anti-fouling performance in reverse osmosis application of polyamide thin film nanocomposite membrane modified with functionalized carbon nanospheres | [Oral-5] Study on Preparation and Magnesium/lithium Ion Separation Performance of Poly(ethylene imine) Modified Cation Exchange Membrane | [Oral-5] Enhancement of oxygen separation performance through Pr0.6Sr0.4FeO3-δ perovskite by modulation of oxygen vacancies | [Oral-5] Electrosprayed thin film nanocomposite polyamide nanofiltration with homogeneous distribution of nanoparticles for enhanced separation performance |

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| | **Yanyi Wang**<br>Tsinghua Shenzhen International Graduate School, Tsinghua University | **Xiang-Yun Xie**<br>Zhejiang University of Technology | **Ao Wang**<br>South China University of Technology | **Yingyao He**<br>Ningbo Institute of Materials Technology & Engineering |
| 10:45-11:00 | [Oral-6] Development of zwitterionic antifouling membranes using green solvent and sugar for nanofiltration<br>**Siew Kei Lau**<br>Xiamen University | [Oral-6] Polyamide Modified Anion Exchange Membrane by Interfacial Polymerization for Nitrate and Phosphate Salt Separation<br>**Dan Sun**<br>Zhejiang University of Technology | [Oral-6] Core-Shell Structured Fe3O4@CuS for Effective Gold Capture and Recovery<br>**Jinsong Xia**<br>Queen' s University | [Oral-6] Extraction and separation of levulinic acid from lignocellulosic biomass hydrolysate<br>**Yinglin Mai**<br>Guangdong University of Technology |
| 11:00-11:20 | **Morning Break (20 mins)** | | | |
| Sessions | Parallel 57<br>**Student-A1**<br>**RO, NF, MF, UF and FO** | Parallel 58<br>**Student-A4**<br>**Two-dimensional Membrane Materials and Processes** | Parallel 59<br>**Student-C10**<br>**Advanced Oxidation Technology** | Parallel 60<br>**Student-C3, 4, 5, 7**<br>**Separation and purification technology** |
| Chairs | **Lu Elfa Peng** | **Yan Zhao** | **Yan Guo** | **Shuang Zheng** |
| 11:20-11:35 | [Oral-1] Complexation of cellulose nanocrystals and amine monomer for improved interfacial polymerization of nanofiltration membrane<br>**Shang Fang**<br>Kobe University | [Oral-1] Application of sulfonic acid modified covalent organic framework membranes in organic solvents nanofiltration<br>**Xiaohe Tian**<br>Guangxi Normal University | [Oral-1] Boosted Cu/Co dual redox cycle by CW/Co/BNQDs for enhanced PMS activation: Performance, intermediates and mechanism<br>**Ruyao Chen**<br>Jiangnan University | [Oral-1] Extracion of natural astaxanthin from Haematococcus pluvialis by deep eutectic solvents: Comparing with organic solvents<br>**Wanting Cheng**<br>Guangdong Pharmaceutical University |
| 11:35-11:50 | [Oral-2] Facial surface modification of polyamide reverse osmosis membrane for enhanced and regenerative chlorine resistance<br>**Jiancong Lu**<br>Zhejiang University | [Oral-2] Continuous fabrication of Ti3C2Tx MXene nanofiltration membranes<br>**He Li**<br>Dalian University of Technology | [Oral-2] Dual Role of ·OH: Synthesis of Highly Dispersed NaP Zeolite and Efficient Removal for Rhodamine B<br>**Yanan Zhang**<br>Northeast Petroleum University | [Oral-2] Separation of gallium from alkali leaching solution of brown corundum dust with solvent extraction<br>**Xujie Hui**<br>Wuhan University of Science and Technology |
| 11:50-12:05 | [Oral-3] Regenerated cellulose membranes for efficient separation of organic mixtures<br>**Zifan Song**<br>Fujian Agriculture and Forestry University | [Oral-3] Low-pressure loose graphene oxide membrane with tannic acid nanotube intercalation for ultrafast dyes/salt separation<br>**Yan Zhang**<br>Tiangong University | [Oral-3] Co3O4 decoration on iron-incorporated biochar composite fabricated by co-pyrolysis of red mud and spent coffee ground: A synergistic hybrid for peroxymonosulfate activation toward the degradation of RhB<br>**Xiaojing Sun**<br>Qingdao University of Science & Technology | [Oral-3] Assessment of COSMO-RS for Predicting Liquid–Liquid Equilibrium in Systems Containing Deep Eutectic Solvents<br>**Kai Wang**<br>Technical University of Munich |
| 12:05-12:20 | [Oral-4] Inhibiting Polyamide Intrusion of Thin Film Composite Membranes: Strategies and Environmental Implications<br>**Yukun Qian**<br>Zhejiang University | [Oral-4] In situ assembly of g-C3N4/polypyrrole in a thin-film nanocomposite membrane with highly enhanced permeability and durability<br>**Mengni Ge**<br>Hohai University, KU Leuven | [Oral-4] Towards removal of PPCPs by advanced oxidation processes: a review<br>**Xiaoqian Chen**<br>Guangzhou University | [Oral-4] Construction of new porous organic polymer membranes based on 4,4',4'',4'''-methane tetrakis(benzene-1,2-diamine) and their antibiotic desalination performance<br>**Haohao Liu**<br>Jiangnan University |
| 12:20-12:35 | [Oral-5] Regeneration of Aramid Nanofibers with Acetone for High-Performance Organic Solvent Nanofiltration Membranes<br>**Yuxi Ma**<br>Deakin University | [Oral-5] Integration of Life Cycle Assessment and Techno-economic Analysis for Sustainable Membrane Fabrication<br>**Seang Uyin Hong**<br>Xiamen University | [Oral-5] Green and efficient synthesis of lithium acetate by electrodialysis metathesis<br>**LI Xu**<br>Hefei University | [Oral-5] Design of spherical crystallization for carbamazepine multicomponent crystals via different methods: preparation, characterization, mechanism<br>**Lishan Liu**<br>East China University of Technology |
| 12:35-12:50 | [Oral-6] Self-cleaning Co3O4/PES nanofiltration membrane for dye | [Oral-6] Preparation of a Triazine Porous Organic Polymer Nanoparticle- | [Oral-6] Preparation and preservation effect of pullulan | |

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| | wastewater remediation via a coupling process of separation and peroxymonosulfate activation<br>**Jian Xu' s team**<br>Anhui University of Science and Technology | Chitosan Nanocomposite Membrane for High-efficient Molecule/ion Separation<br>**Kai Zhang**<br>Zhejiang University of Technology | polysaccharide/chitosan/xanthan gum/collagen composite<br>**ZHENG Wen**<br>Shanghai Ocean University | |
| 12:50-14:30 | **Lunch Break (100 mins)** | | | |
| **Zoom link** | https://hku.zoom.us/j/9047994513 | https://hku.zoom.us/j/2262728525 | https://hku.zoom.us/j/2197667700 | https://hku.zoom.us/j/8505055222 |
| Sessions | Parallel 61<br>**Student-A1&A2 Membrane Transport Phenomena and Process Simulation** | Parallel 62<br>**Student-A5, A7 & A8 Novel Membrane Materials, Characterization & Gas separation** | Parallel 63<br>**Student-B1&B2 Biomass, bioproduct, and bioenergy & Adsorption-based Gas Separation and CO2 capture** | Parallel 64<br>**Student-B3, 4, 5 Resource Recovery, Heavy Metal Removal, Adsorptive Separation of Hydrocarbons** |
| Chairs | **Ruobin Dai** | **Peng-Fei Sun** | **Haopeng Feng / Pulak Sarkar** | **Qian Xiao / Ruiting Liu** |
| 14:30-14:45 | [Oral-1] The preparation and anti-fouling performance of conductive CNTs-PVDF composite hollow fiber membrane for microalgae filtration<br>**Caiyun Hou**<br>Dalian University of Technology | [Oral-1] Catalyst-anchored secondary polymerization for highly permeable acid-resistant nanofiltration membrane preparation<br>**Yang Cao**<br>University of Chinese Academy of Sciences | [Oral-1] New insight into Fe(VI)-driven carbon migration and recovery in short-term anaerobic fermentation of waste activated sludge<br>**Heliang Pang**<br>Xi'an University of Architecture and Technology | [Oral-1] Extraction and preconcentration of natural astaxanthin by using thermoreversible ionic liquid-water systems<br>**Qian Yu**<br>Guangdong Pharmaceutical University |
| 14:45-15:00 | [Oral-2] Study on the interlayered thin-film composite membrane with enhanced separation performance<br>**Li Long**<br>The University of Hong Kong | [Oral-2] Pervaporation performance of PVA/CPO/SA mixed matrix membranes for dehydration of ethyl acetate<br>**Yu Zhang**<br>Guangxi University | [Oral-2] Synthesis of Magnetic Biosorbents Derived from Pomelo Peels for Dyes and PAHs Removal from Wastewater<br>**Leong Sing Soh**<br>Xiamen University | [Oral-2] Biomass-resourced hierarchical porous carbon/α-MnO2 nanorod composite electrodes with high hybrid capacitance for the electrosorption of U(VI) from aqueous solution<br>**Yanlin Liu**<br>East China University of Technology |
| 15:00-15:15 | [Oral-3] Design of YX2 nanopore for desalination<br>**Tianyu Li**<br>Hangzhou Dianzi University | [Oral-3] Constructing of hybrid composite membranes with ultra-stable underwater superoleophobicity for oily water purification<br>**Yu-Ling Yang**<br>Ningbo Institute of Materials Technology and Engineering, CAS | [Oral-3] An Ultra-light, Sustainable Sponge for Elimination of Microplastics and Nanoplastics<br>**Jianxin Fu**<br>Ocean University of China | [Oral-3] Macroporous and ultralight polyethyleneimine incorporated chitosan/TiO2 spherical foams for the efficient adsorption of U(VI) from aqueous solution<br>**Xianqian Ao**<br>East China University of Technology |
| 15:15-15:30 | [Oral-4] Comparison of Energy Efficiency between Atmospheric Batch Pressure-Retarded Osmosis and Single-Stag<br>**Zijing MO**<br>Nanyang Technological University | [Oral-4] Comparative Studies of Mixed Matrix Membranes with two sod-type Zeolitic Imidazolate Frameworks: ZIF-94 and hybrid ZIF-7/COK-17<br>**Qian Jia**<br>University of St Andrews | [Oral-4] Robust zirconium-fumarate framework with one-dimensional pore for methane/nitrogen separation<br>**Rundao Chen**<br>Zhejiang University | [Oral-4] Efficient degradation of bisphenol A by Fex (x=1~2) single atom nanocatalysts<br>**Xinyi Yang**<br>Linyi University |
| 15:30-15:45 | [Oral-5] Dialysis/adsorption bifunctional membrane with polyethyleneimine/tannic acid/bimetals complexation for urea removal<br>**Yang Liu** | [Oral-5] CO2/Xe separation over high-silica zeolite membranes<br>**Xingyu Peng** | [Oral-5] Separation of carbon dioxide mixtures by multibeds PSA processes simulation<br>**Qiwei Yang** | [Oral-5] S and N Doped Biochar Based on Different Surface Potentials for Asymmetric Capacitive Deionization<br>**Changlin Wang** |

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| | Ningbo Institute of Materials Technology & Engineering | Nanjing Tech University | Wuhan Institute of Technology | Tianjin University |
| 15:45-16:00 | [Oral-6] Ternary Phase Field Model of Water/NMP/Polysulfone Membrane Prepared By Nonsolvent-Induced Phase Separation<br>**Xintao Deng**<br>Tsinghua University | [Oral-6] Fabrication of high-quality SSZ-13 zeolite membranes for efficient SF6 recovery<br>**Wen Bo**<br>Nanjing Tech University | [Oral-6] Ni promoted Fe-CaO dual functional materials for calcium chemical dual looping<br>**Shuzhuang Sun**<br>Queen' s University Belfast | [Oral-6] Synthesis of aminomethylpyridine functionalized poly(amidoamine) dendrimer/silica composites for efficient capture of aqueous Hg(II) and Cd(II)<br>**Kaiyan Wu**<br>Ludong University |
| 16:00-16:15 | [Oral-7] Modeling nanovoid-enhanced water permeance for thin film composite reverse osmosis and nanofiltration membranes<br>**Yaowen Hu**<br>The University of Hong Kong | [Oral-7] Unveiling the growth of polyamide reverse osmosis membrane at free interface for enhanced selectivity between water and salt<br>**Shenghua Zhou**<br>The University of Hong Kong | [Oral-7] Porous GO framework fabricated by ionic crosslinking for CO2 capture<br>**Zhi-Jie Liu**<br>Beijing University of Technology | [Oral-7] Photomodulation on Active Sites of Adsorbents<br>**P. Tan**<br>Nanjing Tech University |
| 16:15-16:35 | **Afternoon Break (20 mins)** | | | |
| Sessions | Parallel 65<br>**Student-A6, 9&11<br>Inorganic Membrane and Membrane Applications** | Parallel 66<br>**Student-A10<br>Integrated Membrane Processes and Membrane Antifouling Strategies** | Parallel 67<br>**Postdoc-1<br>Novel Membrane Materials and Processes** | Parallel 68<br>**Postdoc-2<br>Separation and Adsorption Technology** |
| Chairs | **Zhe Yang** | **Peng-Fei Sun** | **Hao Guo / Yang Li** | **Lijun Meng / Jiahui Zhou** |
| 16:35-16:50 | [Oral-1] Precise manipulation of iron spin states for A near 100% selectivity of singlet oxygen production<br>**Na Lu**<br>Ningbo Institute of Materials Technology and Engineering, CAS | [Oral-1] Use of Membrane Contactor in Optimizing Ozone Mass Transfer and Phenol Degradation<br>**Chen Xi**<br>Tongji University | [Oral-1] Humidity Enhanced Selective Gas Separation in 2D Membranes: The Role of Confined Water<br>**Dr. Han Li**<br>Tianjin University | [Oral-1] Multi-cation crosslinked poly(arylene peridinium) membranes with high durability for water electrolysis<br>**Prof. Xiuqin Wang' s team**<br>Dongguan University of Technology |
| 16:50-17:05 | [Oral-2] Membrane fouling mechanisms during membrane distillation treatment of anaerobic digestion effluents with different concentration factors<br>**Mingfei Shi**<br>Huazhong Agricultural University | [Oral-2] Construction of tunable "silica molecular brush" on the polyamide membrane surface for enhancing water permeability and antifouling performance<br>**Qianqian Zhao**<br>Tiangong University | [Oral-2] Microporous poly(triaminoguanidinium-amide) nanofilms with sub-nm precision for ultra-low molecular weight cut-off in nanofiltration<br>**Dr. Pulak Sarkara** | [Oral-2] Selective extraction of bromide-ion from solution by NiO/NiCo LDH composite film electrode<br>**Dr. Fengfeng Gao**<br>Taiyuan University of Technology |
| 17:05-17:20 | [Oral-3] Patterned dense Janus membranes with simultaneouslyrobust fouling, wetting and scaling resistance for membrane distillation<br>**Chao Wang**<br>Shanghai Jiao Tong University | [Oral-3] A photo-Fenton self-cleaning PP@PDA@Co/β-FeOOH composite membrane for oil/water separation<br>**Yibo Zhang**<br>Anhui University of Science and Technology | [Oral-3] Palladium-percolated networks enabled by low loadings of branched nanorods for efficient blue H2 production<br>**Dr. Leiqing Hu**<br>University of New York | [Oral-3] Binary Nanofibrous Membranes with Independent Oil/Water Transport Channels for Durable Emulsion Separation<br>**Dr. Yajie Ding**<br>Chinese Academy of Sciences |
| 17:20-17:35 | [Oral-4] Unraveling behaviors and mechanism of membrane fouling in membrane distillation for leachate concentrate treatment<br>**Wancen Liu**<br>China Agricultural University | [Oral-4] Methylated polyamide reverse osmosis membrane with enhanced water permeability and antifouling performance<br>**Yiwen Qin**<br>Tiangong University | [Oral-4] Tailoring Morphology of Polyamide RO Membranes with Nanobubble Chemistry for Enhanced Separation Performance<br>**Dr. Lu Elfa Peng**<br>The University of Hong Kong | [Oral-4] Electrically Switched Ion Membrane for Ion Selective Separation and Recovery: From ESIX to ESIPM<br>**Prof. Xiaogang Hao' s team**<br>Taiyuan University of Technology |
| 17:35-17:50 | [Oral-5] Effect of contaminants in seawater/concentrated seawater on the performance of reverse electrodialysis stack and contaminants composition analysis | [Oral-5] CTF Membranes for Ultrafast Organic Solvent Transport and Photocatalytic Cleaning | [Oral-5] Microstructural Optimization of MFI Zeolite Membranes towards Enhanced Gas Separation Performance | [Oral-5] Cytomembrane-mimetic neighborhood nanostructure reinforces biosensing-membrane |

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| | | **Hailong Gao**<br>Dalian University of Technology | | **Guiliang Li**<br>Ningbo Institute of Materials Technology and Engineering, CAS | | **Prof. Yi Liu' s team**<br>Dalian University of Technology | | **Dr. H. Zhang**<br>Chinese Academy of Sciences |
| 17:50-18:05 | [Oral-6] | Vacuum-assisted MPD loading for highly permeable RO membrane with the control of nanoscale structure<br>**Siqi Wu**<br>The University of Hong Kong | [Oral-6] | Catalytic Ozonation Membrane Reactor as a Novel Water Purification Technology: Membrane Fraction,Performance and Interface Reaction Menchanism<br>**Yujie Li**<br>Beijing Forestry University | [Oral-6] | Advanced Porous Materials in Mixed Matrix Membranes for Efficient CO2 capture<br>**Dr. Youdong Cheng**<br>National University of Singapore | [Oral-6] | |
| 18:05-18:20 | [Oral-7] | Molecular Simulation Study on the Confined Mass Transfer Mechanism of Protons in Proton Exchange Membranes<br>**Qingwei Gao**<br>Guangxi University | [Oral-7] | Porous substrate affects antifouling performance of thin-film composite nanofiltration membranes<br>**Chenyue Wu**<br>The University of Hong Kong | [Oral-7] | Superhydrophobic membrane from double co-crystallization for high-performance separation of water-in-oil emulsion<br>**Dr. Caiyun Hou**<br>Dalian University of Technology | [Oral-7] | |