神戸大学先端膜工学研究センター 主催

特別講演会のご案内

開催日時	会場	参加費
2026 年 7 月 1 日(水) 15:00～17:00	神戸大学工学研究科 C4-301 教室 ※対面およびオンラインのハイブリッド開催	無料

LECTURE 1

Prof. Taehoon Lee

Assistant Professor

Department of Future Energy Engineering,

Sungkyunkwan University, Republic of Korea

Title:

Engineering polymers of intrinsic microporosity for membrane-based molecular separation

LECTURE 2

Prof. Yi-Ming Sun

Professor, Dean of the College of Engineering

Department of Chemical Engineering and Materials Science,
Yuan Ze University, Taiwan

Title:

Membrane Research Activities in Taiwan and My Personal Journey in Membranes

参加申込方法

下記の申込フォーム(または右の QR コード)よりお申込みください。

フォームの送信が完了すると、申込完了画面に当日の Zoom リンクが表示されます。

申込フォーム: https://forms.office.com/r/qu7TsS5jr5

フォームから申込みができない方は、最下部記載のメールアドレスまで、〔① 参加者名、② 所属、③メールアドレス、④ 参加方法(対面・オンラインのいずれか)〕をお送りください。
申込者へは、6/30(火)までに、講演概要と講演会参加用URLを送付いたします。

お問合わせ先

神戸大学先端膜工学研究センター事務局

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Engineering polymers of intrinsic microporosity for membrane-based molecular separation

Prof. Taehoon Lee

Department of Future Energy Engineering,
Sungkyunkwan University, Republic of Korea

Abstract:

Separation and purification are essential in the chemical industries, which currently account for ~15% of global energy consumption. Membrane separation would be a key enabler for the decarbonization of the chemical industries beyond the energy-intensive thermal processes. However, conventional low-free-volume polymers suffer from limited separation performance due to the inherent trade-off between permeability and selectivity. In this context, polymers of intrinsic microporosity (PIMs) have emerged as promising next-generation membrane materials for molecular separation, offering ultrahigh permeability due to their abundant micropores (<2 nm) and solution processability for scalable manufacturing. This talk will present the rational design and synthesis of PIM-based membranes for the efficient separation of molecular mixtures. Synthetic strategies for both linear and crosslinked PIMs will be discussed in the context of step-growth polymerization and interfacial polymerization, respectively. The potential applications of PIM-based membranes in energy and environmental fields will be highlighted, with a focus on CO_2 capture, crude oil separation, and redox flow batteries.

Membrane Research Activities in Taiwan and My Personal Journey in Membranes

Prof. Yi-Ming Sun

Department of Chemical Engineering and Materials Science
Yuan Ze University, Taiwan

Abstract:

Membrane technology plays a pivotal role in addressing global challenges related to water scarcity, energy efficiency, and industrial sustainability. This presentation offers a comprehensive overview of the current membrane research landscape in Taiwan, highlighting key academic breakthroughs and industrial applications. In Taiwan, membrane research is deeply integrated with high-tech industries, particularly in semiconductor ultrapure water production, wastewater reclamation, and advanced gas separation. Alongside this macro-perspective, the speaker will share a personal academic journey within the membrane field, reflecting on early inspirations, key research milestones, and ongoing projects. Finally, this talk aims to explore potential avenues for future collaboration between Taiwan and the Research Center for Membrane and Film Technology (MaFTech) at Kobe University, fostering stronger academic ties and collective progress in membrane science.