

## Advanced Polymer-MOF Hybrid Membranes for Energy-Efficient Separations

지원석<sup>†</sup>  
전남대학교  
(wschi@jnu.ac.kr<sup>†</sup>)

Polymer materials have been formed into a large area and thin film for energy and environmental-related gas separations. However, the transport property sets of polymer materials are limited by the Upper bound because of the trade-off relationship between permeability and selectivity in the polymer structure. Additionally, the glassy polymer membranes are vulnerable to the plasticization behavior toward a condensable gas. To aim the industrial applications, however, the polymer membranes have to show high transport property and operation stability. To address the current issues, the direct researchers have incorporated the metal-organic framework (MOF) nanoparticles to increase molecular separation performance and plasticization resistance. In this talk, advanced polymer-MOF hybrid membranes will be focused on offering the potential strategy to improve molecular transport and permeation durability characteristics.