

## Enabling Molecular Sieving Behaviors of Advanced Membranes for Efficient CO<sub>2</sub> Separations

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Membrane-based gas separations are attractive due to their relatively high energy efficiency as well as small footprints. Especially, polymers are practical materials in membrane market since they are economical and easily processable. Polymeric membranes, however, are suffering from the separation limit, a so-called upper bound limit due to their intrinsic separation mechanism. Mixed matrix membranes (MMMs) can be a practical approach to overcome the performance limit of polymeric membranes via the molecular sieving behavior. They are essentially hybrid membranes consisting of molecular sieves as a dispersed phase for exceptional separation performance and polymeric membranes as a continuous phase for good processability. In this talk, I will present the current progress in developing MMMs including different types of molecular sieves for efficient CO<sub>2</sub> separations.