

On the formation of uniform all-silica chabazite layers

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Despite its high potential for CO₂ separation, an all-silica CHA (Si-CHA) zeolite membrane has not been reported yet. In particular, the wide size distribution of conventionally synthesized near cubic CHA zeolite particles blocks the formation of a uniform Si-CHA layer. In particular, the mono-dispersity of used zeolite particles is required to obtain the uniform layer. Considering the fact that the uniform layer is critical in manufacturing continuous zeolite films in the secondary growth method, the formation of the uniform Si-CHA layer is an important task. In this poster presentation, we will (1) address the importance of the uniform layer formation and (2) discuss how to achieve a uniform Si-CHA layer based on thin plate-like Si-CHA particles, though they exist in minor fraction in the mixture with the above-mentioned conventional near cubic CHA particles.