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# Manipulation of Confined Structure in Alcohol-permselective Pervaporation Membranes*

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**Abstract** Alcohol-permselectivity pervaporation has been arousing increasingly more attention in bioalcohol production due to the advantages of environmental friendliness, low energy consumption and easy coupling with fermentation process. With the intrinsic feature of larger molecules preferentially permeating and the consequent inferiority in selective diffusion, the development of alcohol-permselective membrane is relatively retarded compared with water-permselective membrane. This review presents the prevalent membrane materials utilized for alcohol-permselective pervaporation and emphatically expatiates the representative and important developments in the past five years from the aspect of tuning confined structure in membranes. In particular, the diverse structure tuning methods are described with the classifications of physical structure and chemical structure. The corresponding structure-performance relationships in alcohol-permselective pervaporation membranes are also analyzed to identify the objective of structure optimization. Furthermore, the tentative perspective on the possible future directions of alcohol-permselective pervaporation membrane is briefly presented.

**Keywords** confined structure, pervaporation, membrane, alcohol-permselective

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