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Structure design and applications of dual-layer polymeric membranes

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Abstract

The whole world is looking for imperative technologies that can produce clean water, clean energy and clean environments with low energy consumption and small footprint. Membrane technology stands out as a potential solution for different applications because of its beneficial advantages. The revolutionary dual-layer (DL) membranes are composed of two layers formed by co-extruding or co-casting two different dope solutions simultaneously in one step. With the advances in dual-layer concept, one can effectively design the membranes with the maximal performance from various polymeric pairs. As a result, DL membranes are increasingly being studied for gas-phase and liquid-phase separations. However, challenges still exist such as parameters or conditions affecting the adhesion/delamination in DL membranes, the methods to fabricate delamination-free membranes, the knowledge to bridge the

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