Preparation of Inner-skinned Asymmetric Hollow Fiber Membranes using Phase Inversion Kinetics

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Recently developed crosslinked TR (XTR) membranes as an advanced TR material exhibit high permeability and high selectivity stemming from higher rigidity due to a simultaneous and synergetic reaction of crosslinking and thermal rearrangement. The precursor crosslinkable co-HPI precursor can be dissolved in a wide range of commercial solvents indicative of an excellent processibility. Herein, a systematic spinning process, using a newly designed crosslinkable co-HPI precursor to fabricate defect-free XTR-PBOI hollow fiber membranes with inner skin layer will be discussed based on the phase inversion kinetics of nonsolvent-induced phase separation (NIPS) method.