



## Optimization of membrane structure using the spin-coating method

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### ABSTRACT

Spin-coating is a preferred method for application of thin and uniform films on flat substrates, it is used extensively in microlithography. For polymeric membranes prepared by the immersion-precipitation method, the solvent-nonsolvent mass transfer kinetics always governs the ultimate membrane structure to a large extent. In this paper, the effects of spinning conditions on the mass transfer kinetics and thus the structure and performance of very thin and smooth membranes were investigated. The results indicated that the membrane structures can be regulated in a relatively large range through adjusting the spinning conditions (spinning speed, spinning time, acceleration process). With proper control, formation of membranes with round-pore surfaces or nodular surfaces can be achieved.

*Keywords:* Polymeric membrane; Structure; Film; Casting solution; Spin-coating; Mass transfer kinetics

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