

## Study on synthesis and physical properties of charged surface modifying macromolecules with different end-capping materials for membrane applications

### Abstract :

Polyol and end-capping agent were changed systematically when charged surface modifying macromolecules (cSMMs) were synthesized and characterized. Fourier transform infrared spectroscopy detected different degrees of hydrogen bonding interactions for different polyols and end-capping agents via shifting of absorption bands characteristic to the urethane group. Polyol of the lower molecular weight showed the stronger interaction and thus increased the cSMM's structural rigidity. The cSMM's rigidity increased from hydroxyl benzene sulfonate to hydroxyl propane sulfonate when poly(propylene glycol) was used as polyol. The effects of polyol and end-capping agent on the contact angle and water uptake were studied.