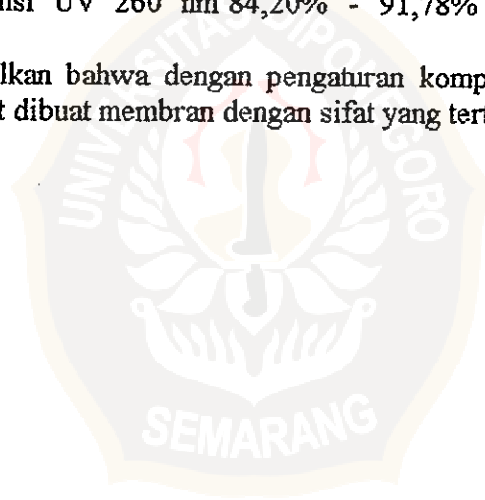


RINGKASAN

Telah dibuat membran datar selulosa asetat untuk mikrofiltrasi. Membran dibuat dari bahan polimer selulosa asetat, pelarut aseton, air sebagai non pelarut, aditif PEG-400, PEG-4000 dan LiCl, dengan waktu penguapan 5, 10 dan 15 detik. Kemudian membran dikarakterisasi dengan mengukur fluks air, rejeksi terhadap larutan sukrosa, ketebalan membran dan diameter pori maksimum. Dan sebagai aplikasinya membran digunakan untuk penjernihan air sungai Kaligarang.

Semakin besar konsentrasi polimer atau semakin kecil konsentrasi aditif dan semakin singkat waktu penguapan maka membran yang terbentuk mempunyai sifat permeabilitas yang semakin kecil tetapi sifat selektifitas yang semakin besar. Fluks membran paling besar adalah $169,46 \text{ L m}^{-2} \text{ jam}^{-1} \text{ atm}^{-1}$ untuk komposisi larutan cetak %polimer : %pelarut : %aditif = 7 : 84 : 9, dengan aditif PEG-4000 dan waktu penguapan 15 detik. Sedangkan rejeksi terhadap larutan sukrosa yang paling besar adalah 9,58% untuk komposisi larutan cetak %polimer : %pelarut : %aditif = 10 : 84 : 6, dengan aditif PEG-400 dan waktu penguapan 5 detik. Dalam aplikasinya, membran mampu menghilangkan kekeruhan antara 96,27% - 99,78%, senyawa organik pada absorbansi UV 260 nm 84,20% - 91,78% dan logam Ca antara 31,52% - 77,735%.

Dapat disimpulkan bahwa dengan pengaturan komposisi larutan cetak dan waktu penguapan dapat dibuat membran dengan sifat yang tertentu.



SUMMARY

It had been made flat-sheet membranes from cellulose acetate for microfiltration. The membranes were prepared from the polymer of cellulose acetate, acetone as solvent, water as non solvent, PEG-400, PEG-4000 and LiCl as additives, with evaporation time 5, 10 and 15 second. Then the membranes were characterized by determining the flux, the rejection of sucrose solution, the membrane thickness and the maximum pore diameter. And the membranes were applied for water purification of Kaligarang river.

The increasing of the polymer concentration would decrease the permeability of the formed membranes. The decreasing of the additive concentration would decrease the permeability of the formed membranes. The decreasing of the evaporation time would decrease the permeability of the formed membranes. The decreasing of the membrane's permeability would increase its selectivity. The highest flux was $169,46 \text{ L m}^{-2} \text{ h}^{-1} \text{ atm}^{-1}$ for the casting solution with composition %polymer : %solvent : %additive = 7 : 84 : 9, with PEG-4000 as additive and evaporation time 15 second. And the highest rejection of sucrose solution was 9,58% for the casting solution with composition %polymer : %solvent : %additive = 10 : 84 : 6, with PEG-400 as additive and evaporation time 5 second. And in the application, the membranes could reduce the turbidity until to 96,27% - 99,78%, organic compounds on UV absorbance at 260 nm 84,20% - 91,78%, and Ca metal 31,52% - 77,735%.

It could be concluded that the membrane with specific characteristics could be made by regulating the composition of the casting solution and the evaporation time.

