Yuliana, Vita, 2013, Pembuatan dan Karakterisasi Membran *Hollow Fiber* Selulosa Asetat untuk Hemodialisis Kreatinin, skripsi ini dibawah bimbingan Siti Wafiroh S.Si, M.Si dan Yanuardi Raharjo S.Si, M.Sc, Departemen Kimia, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Aplikasi membran *hollow fiber* telah meluas di bidang kesehatan, termasuk salah satunya adalah untuk terapi gagal ginjal. Membran *hollow fiber* dari bahan polimer selulosa asetat dapat digunakan dalam komponen hemodialisis. Penelitian ini bertujuan untuk membuat dan mengkarakterisasi membran *hollow fiber* selulosa asetat untuk hemodialisis kreatinin. Membran *hollow fiber* dibuat dengan metode inversi fasa menggunakan larutan *dope* dengan perbandingan 22% selulosa asetat, 51% aseton dan 27% formamida. Pada proses *spinning*, dilakukan variasi jarak *air gap* 10, 15, 20, 25, dan 30 cm. Karakterisasi membran *hollow fiber* meliputi pengukuran ketebalan, uji tegangan (*stress*), uji regangan (*strain*), Modulus Young, uji SEM (*Scanning Electron Microscopy*) dan aplikasi membran *hollow fiber* untuk hemodialisis kreatinin. Hasil penelitian ini diperoleh jarak *air gap* optimum adalah 25 cm. Hasil karakterisasi membran *hollow fiber* dengan jarak *air gap* optimum adalah ketebalan 0,28 mm, *stress* 2879,58 N/m^2, *strain* 0,179, Modulus Young 14617,16 N/m^2. Hasil aplikasi membran *hollow fiber* selulosa asetat untuk hemodialisis kreatinin adalah nilai fluks 49,4 L/m^2jam dan rejeksi 19,65%.

Kata kunci : membran hollow fiber, selulosa asetat, hemodialisis, kreatinin

Yuliana, Vita, 2013, The Production and Characterization of Cellulose Acetate Hollow Fiber Membrane for Hemodialysis Creatinine, final project was under guidance of Siti Wafiroh S.Si, M.Si And Yanuardi Raharjo S.Si, M.Sc, Department of Chemistry, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

Application of hollow fiber membranes have been widespread in the health field, including one of which is for replacement therapy of kidney. Hollow fiber membrane of cellulose acetate polymer materials can be used in hemodialysis components. The aims of this research are to create and characterize cellulose acetate hollow fiber membranes for hemodialysis creatinine. Hollow fiber membranes were prepared by phase inversion method using dope solution with a weight ratio 22% cellulose acetate, 51% acetone, and 27% formamide. In the spinning process, the variations air gap distance are 10, 15, 20, 25, and 30 cm. Characterization of hollow fiber membranes covering thickness, stress, strain, Young Modulus, SEM (Scanning Electron Microscopy), and application of hollow fiber membranes for hemodialysis creatinine. The result of this research, the optimum air gap distance is 25 cm. The result of characterization of hollow fiber membranes with optimum air gap distance are thickness of 0.28 mm, 2879.58 N/m2 stress, strain 0.179, Young's modulus 14617.16 N/m^2. The results of the application of cellulose acetate hollow fiber membrane for sample creatinine are with flux 49,4 L/m^2h and rejection 19.65%.

Keywords : hollow fiber membranes, cellulose acetate, hemodialysis, creatinine