

## **ABSTRACT**

### **EXTRACTION STUDY AND CELLULOSE MODIFICATIONS OF RICE STRAW TO PRODUCE CELLULOSE ACETATE**

By

**Hady Novadianto**

Rice straw is one of wasted lignocellulose that the benefit were not optimal yet, the biggest composition of lignocellulose compound in rice straw is cellulose. Cellulose can be isolated by using the extracting method. The first step of extraction is the separation process by using NaOCl, until we have rice straw that contain cellulose and hemicellulose. To separate cellulose and hemicellulose, we use 15 % NaOH. The neutral phase of this process produce cellulose that we refluks by using acetic acid 80 % and concentrated nitric acid. In this research, identification of cellulose was done by titration and Spektroskopi *Fourier Transform Infrared* (FTIR) analysis. Cellulose modification was done to produce cellulose acetate by acetylation method. Optimization of acetylation process was done by using several variation, i.e. comparison between cellulose : acetic acid glacial, temperature, and acetylation time. Cellulose acetate were formed on its best with comparison of cellulose : acetic acid glacial as much as 1: 10 (g/mL), 50°C temperature , and acetylation time for 60 minutes. Substitution degree of cellulose acetate that we gain in this research is 0,0081-0,4860.

Key Word : Cellulose, Rice Straw, Cellulose Acetate