

## **The effect of sodium hydroxide (NaOH) concentration on oil palm empty fruit bunch (OPEFB) cellulose yield**

### **ABSTRACT**

lulose is one of the renewable resources and become a core target among the researchers in recent time to made a sustainable biopolymer – based materials. Through this research, extraction of cellulose from OPEFB by using NaOH and undergoes bleaching process using 1.7% Sodium Chlorite solutions. The maximum yield of cellulose (89.78%) was obtained with 4% NaOH. The effectiveness of NaOH treatment to obtain the cellulose was reflect in Fourier Transform Infrared (FTIR) analysis where the frequency of the C=C aromatic group of lignin resonated around  $1600\text{ cm}^{-1}$  to  $1590\text{ cm}^{-1}$  disappeared after the treatment. Meanwhile, the peak for OH group of cellulose and the -CH methylene  $^{-1}$  nd  $2900\text{ cm}^{-1}$  respectively. In general, it was found that varies alkaline concentration could give different yield percentage in cellulose extraction.