

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The dilute acid pretreatment studies described above satisfy and meet some of the more important requisites for an effective pretreatment process. This dilute acid hydrolysis is to maximize the xylose conversion and to destroy the corn cobs structure in order to enhance enzymatic hydrolysis. The effects of product recovery and dilute-acid on the structural feature properties of the residue were also explored. Our study shows that there may be opportunities for further process optimization, finding the right pretreatment temperature, reaction time, concentration of sulfuric acid and /or enzyme combinations. Moreover, this research also shows the ethanol production from the fermentable sugar.

This process shows attractive advantages for the utility of holocellulose in the feedstock. Considering its abundance and high sugar potential, corn cobs is an excellent feedstock for ethanol production and is ideally suited to the biorefinery concept.

5.2 Recommendations

For the future work, the enzymatic hydrolysis using commercial enzyme should be compared with a mixed enzyme in order to evaluate an activity and cost. Moreover, after acid pretreatment may occur a furfural so we should remove it before fermentation to ethanol.