CHAPTER V
CONCLUSIONS

The polyglycerol ester was prepared and the alkaline polymerization (etherification) of glycerol and the esterification of polyglycerol with fatty acid were studied. For the etherification step,at 240°C under inert nitrogen atmosphere in the presence of 2 wt.% of CaO as catalyst. The glycerol conversion increased with reaction time. For 5 hours reaction time gave a high summation of di- and tri-glycerol yields of 50%. The unreacted glycerol was removed by using vacuum distillation. The glycerol was efficiently separated up to 86%.For the esterification step, the reaction was occur is enderthermic reaction, at 220°C gave triglycerol conversion close to the molar ratios of oleic acid and triglycerol. The oleic acid-polyglycerol molar ratio had effect on triglycerol oleate formation and could improve viscosity of product.