CHAPTER V

CONCLUSION

This research involved the continuous aromatization of *n*-hexane using in-house continuous reactor. The studies of the effects of temperature, feeding rate of reactant and catalyst concentration indicated that the optimal reaction condition in continuous aromatization of *n*-hexane was at 400°C under the feeding rate of 0.4 ml/min over the 2%Pd/ZSM-5 catalyst. The percentage yield of total aromatic was 76% by weight. The percentage of total conversion was 100% by weight. In addition, the product selectivity of conversion of *n*-hexane on Pd/ZSM-5 catalyst was found to give more *p*-xylene than *o*-xylene and *m*-xylene, respectively.

However, this research studied the efficiency of Pt-F/Al_2O_3 and Zn/ZSM-5 in the continuous aromatization reaction of *n*-hexane at various temperatures and feeding rates. The results indicated that Pt-F/Al_2O_3 and Zn/ZSM-5 were unsuitable for continuous aromatization on this reactor even at high temperature (450°C).

Suggestions for Future Work

1. The system unit of this process should be modified to have the recycle system for cracking products to be fed back intc the reactor inlet in order to increase the yield and conversion.

2. Mixed reactant should be studied as alternative raw materials. Since the low cost reactant such as NGL, naphtha are available, this reaction system should be applied for those studies.

3. The invented continuous reactor should be modified to be used for other reactions by packing the tubing reactor with appropriate catalysts.