



CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

For the vapor-liquid equilibrium study, the volatilization and solubilization of VOCs in coacervate phase of Tergitol 15-S-7 were observed and reported in terms of apparent Henry's law constant (H_{app}), and solubilization constant (K_s), respectively. The hydrophobicity of VOCs is represented via the octanol-water partition coefficient (K_{ow}). It was found that the K_s of VOCs in coacervate solution increases with increasing K_{ow} , while the H_{app} decreases. This was due to the tendency of VOC to be solubilized in micelles. Subsequently, VOC in VOC-contaminated coacervate phase can be stripped out in the co-current vacuum packed column at 40°C. The stripping column can be operated without significantly foaming and flooding. The maximum removal was 1,1-DCE at 98.10% and the lowest removal is ETB (60.61 %). In addition, the VOC removal and the mass transfer coefficient, K_{xa} , decreased as increasing of hydrophobicity or K_{ow} of VOCs.

5.2 Recommendations

Based on this research, the following recommendations for future work are given as following.

1. Study the performance of AE surfactant to extract VOCs from contaminated-wastewater on CPE.
2. Increase number of studied volatile organic compounds.
3. Study the local of solubilized VOCs in the micelle.