

## CHAPTER IV

### CONCLUSIONS

The temperature and the alcohol chain length showed significant effects on the microemulsion formation of AEs with motor oil including the  $C_{\mu}C$  and point E. The  $C_{\mu}C$  and point E decreased with increasing temperature, suggesting that the system needs less amount of AE to form Winsor Type IV microemulsion at higher temperatures. The addition of medium-chain alcohols (*n*-butanol, *n*-hexanol, and *n*-octanol) as cosurfactants was found to be crucial to the microemulsion formation of this system. Among the studied alcohols, *n*-hexanol was the most effective cosurfactant in terms of Winsor Type III microemulsion formation. Moreover, cloud point temperature of surfactant solution increases with an increase in AEs concentration. An addition of alcohol increased the cloud point temperature of AE3. For the AE3 system, the cloud point temperature increased with decreasing alcohol chain length.