CHAPTER V

CONCLUSION AND SUGGESTION FOR FURTHER WORK

Our result indicated that the transferring of Cu^{2+}ion from water phase to chloroform phase was influenced by concentration of surfactants (concentration of surfactants solution should be higher than CMC), pH and temperature of aqueous solution. The maximum binding of Cu^{2+}ion and surfactant required incorporating at least 0.1% w/v of surfactant. The effect of surfactants concentration is summarized as shown in Table 5.1.

Table5.1 The results of surfactants concentration 0.1%w/v on transfer Cu^{2+}ion from water phase to chloroform phase.

Surfactant	% $[Cu^{2+}]$ in chloroform phase at initial concentration of 1 ppm $Cu(NO_3)_2$	% $[Cu^{2+}]$ in chloroform phase at initial concentration of 5 ppm $Cu(NO_3)_2$	% $[Cu^{2+}]$ in chloroform phase at initial concentration of 10 ppm $Cu(NO_3)_2$
LAS	42.20%	52.20%	46.30%
NP_9	32.10%	33.15%	24.20%
Hyamine 1622	36.10%	30.18%	22.15%
Tegobetaine	28.25%	36.10%	26.50%

The maximum binding of Cu^{2+}ion with LAS and Tegobetaine is pH 8.27 of aqueous solution. The higher pH of aqueous solution led to higher negative charge of LAS and Tegobetaine that can bind very strongly with Cu^{2+}ion.

The Cu^{2+}ion directed toward the interior of the clusters (micelles) and decreased transfer from the water phase to the chloroform phase. In the case of Hyamine 1622 at the low pH 4.27 of aqueous solution, it can form strong complex with

Cu^{2+}ion. In the case of NP_9, pH has no effect on binding NP_9 with Cu^{2+}ion due to NP_9 has no charge.

At 40 °C, Cu^{2+}ion increased transfer from the water phase to the chloroform phase due to dehydration of water around surfactant, head group size of surfactant was also decreased and Cu^{2+}ion can bind weakly with surfactant.

The further work should be considered to use EDTA to bind with copper ion in water phase to prevent copper carbamate stain reaction.