

CHAPTER 4

CONCLUSION

This investigation of Cu, Cd and Pb in rainwater samples in Hat Yai City Municipality was carried out by using chelating ion exchange resin (Amberlite IRC-748) and graphite furnace atomic absorption spectrometry.

The optimum conditions of GFAAS for determination of Cu, Cd and Pb as follows: pyrolysis temperature of Cd, Cu and Pb were 500, 1200 and 500 °C, respectively. The atomization temperature of Cd, Cu and Pb were 1500, 2000 and 1500 °C, respectively. The type of matrix modifiers of Cd, Cu and Pb were $\text{Mg}(\text{NO}_3)_2 + \text{Pd}$, $\text{La}(\text{NO}_3)_2$ and $\text{La}(\text{NO}_3)_2$, respectively. The linear dynamic range of Cu, Cd and Pb were from 5-200, 0.2-10 and 5-200 $\mu\text{g L}^{-1}$, respectively. In addition, the detection limit of Cu, Cd and Pb were obtained at 0.17, 0.35 and 0.64 $\mu\text{g L}^{-1}$, respectively.

The optimum conditions for preconcentration of Cu, Cd and Pb for this investigation were the concentration of eluent, eluent volume, flow rate of solutions, column volume, and pH of sample were found at 1.0 M of nitric acid, 25.0 mL of 1.0 M nitric acid, flow rate 4.0 mL min^{-1} , 2.0 mL of resin, and pH 3.5, respectively.

This method was applied for Cu, Cd and Pb determination in nine rainwater samples in Hat Yai City Municipality. It was found that the concentration of Cu, Cd and Pb were in the range 0.15-1.39, 0.06-1.86 and 0.52-34.51 $\mu\text{g L}^{-1}$, respectively.

From this study, It can be concluded that this technique is suitable for Cu, Cd and Pb determination in rainwater samples. Because its provided high sensitivity, simple and rapid techniques.