

CHAPTER 6

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The conclusion of this research can divide in two parts following the research objective

1. Formulation a mathematical model of rinsing process

The rinsing model in electroplating industry can be provided to describe the dynamic respond of cleaning agent concentration in each rinsing pit at various rinsing time and imperfect mixing condition, however the formulated model based on the experimental data can't to describe the relationship between imperfect mixing coefficient (IMC) and rinsing time in each stage.

From the simulation result, the change of rinse water volume in each tank has more sensitivity to the concentration of cleaning agent at the last tank than change of drag out volume. Especially, the water volume in each rinsing tank is decreased. The recycled plastic factory can provide this result to improve the ordinary rinsing plastic process which it can be decreased the water consumption.

2. Optimization of rinsing model

Since the model can't determine the cleaning agent concentration at steady state condition, dynamic optimization technique is provided for sloving the optimum condition. When acceptable cleaning agent concentration at the last stage and number of rinsing are determined, this method can find the optimum volume of water in each stage and the optimum volume of drag out which traps in the recycled plastic.

From the experimental result and feasibility study of implementation, the feasible change of water volume and drag out volume are between 90 to 120 percentage of ordinary value which can obtain the optimum value for practical implementation.

6.2 Recommendation

How to develop for further work can divide in two points. First, to study at the current of factory condition, because this research is studying based on simulation of factory condition. Second, to develop the rinsing model as formulation model based on the assumption with equal value of drag out volume from each stage and the only considering the concentration of cleaning agent.