

CHAPTER 5

CONCLUSIONS

This study can be concluded as the followings.

1. Polyurethane foam was the best material for obtaining the highest recycling efficiency of 6 cycles of dye decolorization with more than 90% decolorization in 24 hours.
2. Both free and immobilized cells exhibited a high efficiency in decolorization as higher than 90% decolorization was achieved in 20 hours.
3. Three cycles of repeated-batch decolorization was obtained when a half of wastewater was removed and replaced consequently.
4. In the effect of sugar addition, 3 g/l of sucrose was the suitable supplementation and gave 14 cycles of repeated batch decolorization for synthetic wastewater.
5. For real textile wastewater, COD removal was decreased 67% and 80% decolorization was found in 48 hours.
6. Treated synthetic and real wastewaters were not toxic in mouse fibroblast and cancer cell line and also found to be toxic at 60% concentration in *Daphnia* sp.