CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The dilute biodiesel wastewater biodegradation was studied using sequencing batch reactor (SBR). In the studies, the effect of nutrient supplementation was examined comparing between the studied SBR operated with and without nutrient supplementation at different COD loading rates and a constant cycle time of 4 cycles per day. The results showed that the nutrient supplement could increase the treatment efficiency in terms of all COD, TOC, and BOD removal. The treatment efficiency of the studied SBR system for the dilute biodiesel wastewater decreased with increasing COD loading rate. This is because the microbial wash-out increased with increasing COD loading rate. From the experiment, they showed the ratio of COD influent and BOD influent was about 15:7. The COD influent was very higher value than the BOD influent so the dilute biodiesel wastewater was very hard to treat.

5.2 Recommendations

The effect of cycle time should be studied since a higher number of cycles per day reportedly can enhance the treatment performance of SBR. The metabolic pathway of the organics present in the dilute biodiesel wastewater should be investigated in order to obtain a better understanding of the aerobic degradation of the studied wastewater. To improve the treatment efficiency of the dilute biodiesel wastewater, another easily-biodegradable wastewater should be added at a proper ratio.