

CHAPTER V

CONCLUSIONS AND SUGGESTION FOR FURTHER WORK

5.1 Conclusions

The oxidation of tetracycline antibiotics dissolved in 0.1 M KH_2PO_4 solution was investigated using an Au RDE with cyclic voltammetry. The highest oxidation current responses of tetracycline hydrochloride, chlortetracycline hydrochloride, and doxycycline hydrochloride were obtained at supporting electrolyte pH 2, pH 2.5, and pH 2, respectively. From the scan rate and rotation speed dependence results, the anodic responses of all analytes above were under the convective-diffusion mass transport process.

The PAD waveform parameters including E_{det} , t_{del} , t_{int} , E_{oxd} , t_{oxd} , E_{red} , and t_{red} for tetracycline hydrochloride, chlortetracycline hydrochloride, and doxycycline hydrochloride were optimized at the gold disk electrode with a flow injection system. The optimized PAD waveforms of each analyte were used in the examination of the analytical performance of this proposed method. Flow injection with pulsed amperometric detection was also applied to determine the amount of tetracyclines in real drug samples. The results obtained were satisfactory.

5.2 Suggestion for further work

In this study, the real samples are the drug formulation. The other samples such as milk, animal feed and animal tissues are interesting to apply by this proposed method. Therefore, the separation method, HPLC, is required to separate the interferences from the analyte. The determination of tetracyclines in the real samples above by HPLC with pulsed amperometric detection is the attractive method for the next research.