CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

This study revealed that Polybenzoxazine-based aerogel was successfully synthesized from bisphenol-A, formaldehyde and diamine, tetraethylenepentamine (TEPA). Polybenzoxazine-based aerogel showed high Cu(II), Fe(II), Pb(II) and Sn(IV) removal from wastewater model following order: Sn(IV) > Cu(II) > Fe(II) > Pb(II). Morover, the results indicated that the amount of metal ions removed from the solutions depended on the adsorption time. For the isotherm experiment, the results showed that adsorption of Cu(II), Fe(II) and Pb(II) fit with Langmuir isotherm while Sn(IV) gave better fit with Freundlich isotherm. In addition, the metal loaded polybenzoxazine-based aerogel can serve as polymeric ligand exchanger (PLE) to remove phosphate from the model wastewater.

The wastewater contains more than one type of contaminants which can effect to polybenzoxazine to remove metal ions and phosphate. Thus, the removal of contaminants should be further study in real wastewater.