CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Poly(S/EGDMA) HIPE loaded with hydroxyapatite porous foams can be fabricated via the high internal phase emulsion polymerization technique. The polyHIPE porous foams can be fulfilling of the requirements for the ideal scaffolds such as having high porosity, highly interconnectivity, and high structural stability. The LbL surface modification was successfully used to enhance the hydrophilic properties of the polyHIPE surface. The unmodified polyHIPE and the modified polyHIPE exhibited non-toxic for L929 fibroblast cells. The PSS modified polyHIPE showed the highest efficiency of attachment of the L929 fibroblast cells and an amount of cell increased up to 138% when compare with unmodified the polyHIPE. Moreover, the PSS modified polyHIPE exhibited the highest efficiency of proliferation of the L929 fibroblast cells. Therefore, PSS modified polyHIPE was suitable for using in tissue engineering application.

5.2 Recommendations

5.2.1 In this work, although the polyHIPE material was successfully modified hydrophilic surface but the method of LbL is a manual method that hard to control and waste time. Thus, the process of LbL should be develop such as using robot to control the flow rate of solution and coating time.

5.2.2 The further work should be observe the cell proliferation in longer culture time to study the depth that cell can penetrate inside the polyHIPE porous foam.