

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

A series of polyHIPE was prepared from high internal phase emulsions technique. PolyHIPEs have open cell structure with average diameter 88 nm and 61 nm and average compressive stress 6.334 and 3.711 MPa for poly(s/DVB) polyHIPE and poly(S/EGDMA) polyHIPE respectively. Then hydrophobic, highly porous poly(s/DVB) polyHIPEs and poly(S/EGDMA) polyHIPEs were completely synthesis and modified surface with the layer-by-layer polyelectrolyte membrane technique. The hydrophilicity of polyHIPE was enhanced the contact angle to 90°. PDAD-PAA polyelectrolyte membrane is the best coating and increased the water absorption capacity to 9 when coating on poly(S/EGDMA) polyHIPE. Polyelectrolyte membrane coating enhanced hydrophobicity, thus enhance water absorption capacity.

5.2 Recommendations

Although the polyHIPE materials was prepare and modify surface successfully and can absorb water, CO₂ capture, filtration or metal capture perhaps applicable. The further work should study on these applications, the used of PSS layers may be useful in CO₂ capture, and improvement of their temperature degradation.