

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The polystyrene-based foams were prepared from high internal-phase emulsions. Poly(S/DVB)HIPEs prepared by NaCl and CaCl₂ exhibited similarly water adsorption capacity. Furthermore, increase in coalescence pores at high water-to-oil ratios generated the spongy material which could maximize the water adsorption capacity almost 30 g/g (at 4:96 of oil:aqueous phase ratio) on the other hand, poor mechanical properties. Attempts to further increase water adsorption were carried out using two crosslinking comonomers; divinylbenzene, and ethylene glycol dimethacrylate. At 70:30 monomer:comonomer ratio of both systems were given similar pore structure. The result presented that poly(S/EGDMA)HIPE provided more water uptake due to hydrophilicity and flexibility.

Recommendations

1. The synthesis to achieve coalescence pores of poly(S/EGDMA)HIPEs should be studied.
2. Experiment in the field should be investigated.