CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

PVA/PAA interpolymer complex hydrogel was successfully prepared by freezing-thawing of mixing solution. The freezing-thawing of hydrogel efficiently gave aerogel. The aerogel after heat treatment (180°C, 10 min) showed an increase in degradation temperature (T_d) for 10°C as compared to that of without heat treatment. Moreover, an increase in PVA content enhances mechanical properties of aerogel. The PVA/PAA blending ratio at 80/20 showed the most satisfaction in both appearance and mechanical properties.

The recommendations for the related future works are; (i) identifying the optimum condition for heat treatment process which improves the thermal properties and mechanical properties, (ii) clarifying the cell viability and toxicity of hydrogel and aerogel for further consideration on biomedical products, and (iii) investigating different crosslinking system of hydrogel/aerogel such as incorporating metal ions (i.e. Ca^{2+}, Cu^{2+}, Mg^{2+}) or by adding inorganic fillers.