



CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Carbon aerogel was successfully synthesized via ambient drying by using polybenzoxazine as a precursor. All carbon aerogel electrodes showed good electrochemical performances. The specific capacitance of the electrode fabricated from activated carbon aerogel was higher than that derived from the non-activated due to its high useable surface area for electrical double layer formation. However, the heat-treated carbon aerogel electrode showed the best specific capacitance due to its pseudocapacitive behaviors.

We should study the influence of temperature treatment of carbon aerogel electrode in order to understand how surface area, pore size of polybenzoxazine-derived carbon aerogel or surface functional groups affect the electrochemical performance. Moreover, to obtain higher specific capacitance of polybenzoxazine-derived carbon aerogel electrode, we should incorporate the pseudocapacitance effects (faradic reaction) to the electrode i.e. adding the transition metal oxides (RuO_2 , TiO_2 , SnO_2 , MnO_2 , and CrO_2), etc.