

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The conclusions of this research are as follows,

- 1.) The electrospinning of the solution containing pure chitosan could not produce nanofibers within the experimental range investigated. Only sprayed droplets were obtained.
- 2.) The chitosan nanofibers could be fabricated via electrospinning technique only when chitosan was previously hydrolyzed or with the addition of polymer to the solution as the spinning aid.
- 3.) The chitosan in different form as a support material is an important factor affecting the bacterial attachment and cells viability.
- 4.) The relationship between the nature of bacteria cells and the physicochemical properties of chitosan is an important factor affecting the bacterial attachment and cells viability.

The recommendations for further experiments are as follows,

- 1.) The analyses of mechanical and thermal properties of chitosan would give more understanding in the process to fabrication of the nanofibers structure.
- 2.) The temperature and air moisture on the electrospinning parameters would provide more knowledge of their effects on fiber morphology.
- 3.) The measurement of electric charge distribution on the chitosan solution would give more insight on the mechanism of cells attachment.
- 4.) The measurement of the outer and inner cell membranes permeability would be helpful for the explanation of the absorption of bacterial cells on chitosan.