

ABSTRACT

In the last decade tissue engineering concerns people a lot and has a great development. The basic purpose of using it, is construction of scaffolds for repair of human organs.

The use of polymers for scaffolds is of great interest nowadays. Polymeric materials are used such as cellulose acetate which is biodegradable and non-degradable polymers are used such as polytetrafluoroethylene. The main advantage of using biodegradable polymers is that after the implantation no surgery is needed.

Recently, the potential of electrospinning has been introduced as an alternative technique in fabrication of scaffolds for soft tissue cell transplantation and hard tissue regeneration. This technique provides tissues with fiber diameter ranging from few nanometers to few micrometers. The final fibrous structure can be tailored by altering the concentration of the polymer solution, the applied voltage, the distance between the injection and the collecting point and the solution flow rate. Also controlled release is a subject of great value and attempts are being done for changing the casual ways of taking drugs.

In the present work fibers were prepared by electrospinning and is also studied how some parameters (voltage, solvent, drug percentage) affect fibers diameter. Lastly the drug loading in the fibers is studied with high pressure liquid chromatography (HPLC).