

Diplomová práce  
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## **ABSTRACT**

### **Nanofibre membranes as carrier of drugs 3. Polyurethane, polyvinylalcohol, polycaprolaktone, polyacrylonitrile**

The theoretical part deals with practical use of non-woven fabric and technology of their production by electrospinning method, it also contains basic information about tested polymers mentioned bellow.

The experimental part brings results of the physical characteristics of the nanofiber membranes produced by electrospinning from polyvinylalcohol, polyurethane, polyacrylonitrile and polycaprolactone. The evaluation of contact angles of water on the membranes did not show significantly different results, although the best wettability was observed on the membrane made from polyurethane. The soak test possesses surprising results in the term of inability of polymers to absorb water. The testing of tensile strength of membranes was investigated to show a possible influence of the radiation sterilization. The only membrane that displayed increased tensile strength after the radiation sterilization was made from polyurethane. The rest of membranes did not demonstrate any changes. For the measurement of tensile direction membrane made from polyurethane was also changed. Tensile was higher in the cross direction than in the longitudinal direction.

Methylparaben in permeation transdermal in vitro measurements was not proved to be suitable as a marker for nimesulide.

There were no significant differences between non-woven fibre polymer membranes on liberation of nimesulide.