

Title: **Polyester fabric functionalization with glycerol treatments for increasing its hydrophilic character.**

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Polyester fabrics are widely used nowadays for their properties and for their price. But polyester has the disadvantage that has a low perspiration, which can cause a discomfort feeling if it keeps constant contact with the skin. This is related to the low hydrophilic character (affinity for water) that this textile presents due to the absence of polar groups in its molecule. Currently there are many studies that pretend to find some treatment that improve this property on polyester textiles.

In this project, the increasing of the polyester's hydrophilic character by modifying only its surface is studied. For this, different glycerol treatments are used due its hydrophilic capacities for polar alcohol groups.

For the glycerol application onto the polyester, two different methods have been applied. Both consist in a sodium hydroxide bath because this substance will break fabric fibres and ease glycerol penetration. The first method is a bath exhaustion at the boiling temperature (100°C) and the second consists in a microwave bath at different conditions of time and power.

All the treatments cause an increase of the fabric's polarity and consequently, of its hydrophilic capacity.

This project expects to achieve and optimize the best method and conditions for the highest fixation of the glycerol and the greatest hydrophilic character rising.