

عنوان مقاله:

The anti-microbial Performance of the Plasma Corona -Modified Cotton treated with silver nitrate

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نویسنده:

Shirin Nourbakhsh - Department of Textile Engineering, Yadegare Imam Khomeini (RAH) Shahre Rey Branch, Islamic Azad University, Tehran, Iran

خلاصه مقاله:

In this research cotton fabric was treated by corona plasma discharge at different powers and number of passages. The carboxyl groups' contents were determined by methylene blue dye and titration method. Then untreated and treated cotton fabrics were treated by silver nitrate, and laundering test was carried out on fabrics. The inductively coupled plasma –optical emission spectroscopy analysis (ICP-OES) and antibacterial tests were done for measuring of the silver ions contents and antibacterial properties. The FTIR/ATR spectroscopy and scanning electron microscopy (SEM) were carried out for investigation of surface bonding and morphology, respectively. The results showed that plasma corona discharge treatment on cotton fabric increased carboxyl groups according to the methylene blue staining and titration method. The increase of power of plasma treatment increased carboxylic acid groups and adsorption of silver ions. The antibacterial effect and silver ions content increased by plasma corona discharge treatment as the antibacterial results was more effective after repeated laundering.

کلمات کلیدی:

Plasma corona discharge, cotton, Antimicrobial, Silver nitrate, Carboxyl groups

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