عنوان مقاله:

Grafting of ethylcellulose microcapsules containing lavender oil onto the cotton fiber and its antibacterial activity

محل انتشار:

ششمین کنگره ملی تحقیقات راهبردی درشیمی و مهندسی شیمی با تاکید بر فناوری های بومی ایران (سال: 1398)

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خلاصه مقاله:

Antibacterial products are common in medical facilities and used in textiles. Due to the many problems caused by bacteria present in the environment, antibacterial finishing on the fibers is essential and useful. Lavender oil was encapsulated in ethylcellulose (EC) microcapsules using a phase separation method and then applied and grafted onto cotton fabric using the crosslinking reagent Maleic acid by pad-dry method in the presence of SHP as the catalyst. The coated cotton fiber characterized by scanning electron microscopy (SEM) and Fourier transform infrared (ATR-FTIR) spectroscopy, SEM showed that the microcapsules grafted on the surface of the fabrics, Besides, the formation of the ester bond between Maleic acid and hydroxyl groups of cotton and hydroxyl groups of the microcapsules was identified by ATR-FTIR. The antibacterial activity against two species of bacteria, Staphylococcus aureus, and Escherichia coli,was evaluated by both quantitative and qualitative using AATCC 100 and 147 test .methods, respectively. The results showed that lavender oil in the microcapsules reduces and inhibits bacteria

کلمات کلیدی:

.Microcapsules, Ethylcellulose, lavender oil, antibacterial, Maleic acid