TI O 2 text rada / full text

Uticaj alkalnog tretmana na strukturu, sorpciju vlage i zapreminsku električnu otpornost tkanina od jute

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Tkanina od jute je tretirana rastvorom NaOH različitih koncentracija u toku 5 min, što je dovelo do smanjenja sadržaja hemiceluloza i povećanje sorpcije vlage. Analiza rezultata dobijenih difrakcijom rendgenskih zraka pokazala je da tkanine sa manjim sadržajem hemiceluloza imaju manji indeks kristaliničnosti i da nakon mercerizovanja, dolazi do konverzije celuloze I_β u cellulozu II. Manje vrednosti zapreminske električne otpornosti nakon alkalnih tretmana mogu se povezati sa smanjenjem sadžaja hemiceluloza i indeksa kristaliničnosti i povećanjem sorpcije vlage. Povećan stepen konverzije celuloze I_β u celulozu II dovodi do povećanja zapreminske električne otpornosti mercerizovanih tkanina.

Effect of the alkali treatment on the structure, moisture sorption and volume electrical resistivity of woven jute fabrics

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Woven jute fabric was treated with NaOH solution of different concentrations for 5 min to obtain jute fabrics with gradually decreased content of hemicelluloses and increased moisture sorption. With increasing the concentration of NaOH the crystallinity index decreased; in the case of NaOH concentration ≥ 10 % the conversion from cellulose I_β to cellulose II occurred. The obtained decrease of the volume electrical resistivity after the alkali treatments can be attributed to the changes in hemicelluloses content, crystallinity index and moisture sorption. Increased conversion from cellulose I_β to cellulose II leads to an increase in the volume electrical resistivity of the mercerized jute fabrics.

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