

Izvirni znanstveni članek *Original Scientific Paper*

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Parametri zbitega levo-desnega pletiva (3. del): debelina pletiva in Knaptonova konstanta

Parameters of Compact Single Weft Knitted Structure (Part 3): Fabric Thickness and Knapton Constant

Eden pomembnih parametrov pletiva je debelina, saj vpliva na izolacijske lastnosti, otip in porabo materiala. V dosedanjih raziskavah je bila debelina pletiva večinoma obravnavana v okviru študij drugih strukturnih parametrov in lastnosti pletiva, kot glavni predmet raziskav pa le redko. Cilj raziskave je bil primerjalno analizirati debelino pletiv in Knaptonove konstante pletiv iz prej z elastanskim jedrom ter iz konvencionalnih prej. Ugotovljeno je bilo, da je pletivo iz prej z elastanskim jedrom, gosto in redko pleteno, pomembno debelejšje od pletiva iz prej brez elastanskega jedra enake nazivne dolžinske mase ter pletenega na istem stroju in pod enakimi pogoji, kar vpliva na uporabne lastnosti pletiv z elastanom. Ugotovljeno je bilo tudi, da se z mokro relaksacijo Knaptonova konstanta gostih in redkih pletiv iz prej z elastanskim jedrom zmanjša, pletiv iz prej brez elastanskega jedra pa poveča. Definiran je bil nov parameter debelinski faktor vpletanja niti.

Ključne besede: pletenje, pletivo, debelina pletiva, Knaptonova konstanta, debelinski faktor vpletanja niti

Fabric thickness is one of the important knitted fabric parameters influencing the insulation properties, handle and material consumption. In the previous research, fabric thickness was mainly examined within the framework of studies of other knitted fabric structural parameters and properties, and only rarely as the main research topic. The research objective was to comparatively analyse fabric thickness and Knapton constants of knitted fabrics made from core-spun yarns with elastane core and those made from conventional yarns. It was established that the knitted fabrics made from yarns with elastane core are significantly thicker than the knitted fabrics made from yarns without elastane core, with equal linear density, produced on the same knitting machine under the same conditions, all influencing the performance properties of elasticized knitted fabrics. It was also established that the Knapton constant of dense and loose knitted structures from yarns with elastane core decreases while it increases for the yarns without elastane core. A new parameter, i.e. fabric thickness interlacing factor, was defined.

Keywords: knitting, knitted fabric, fabric thickness, Knapton constant, fabric thickness interlacing factor

Pregledni znanstveni članek *Scientific Review*

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Glukoza oksidaze – potencialni encimi za beljenje tekstilnih vlaken

Glucose Oxidases – Potential Enzymes for Bleaching Textile Fibres

Glukoza oksidaze katalizirajo oksidacijo β -D-glukoze v glukonsko kislino in z uporabo molekularnega kisika kot elektron akceptorja simultano proizvajajo vodikov peroksid. Glukoza oksidaze so zahvaljujoč vsestranski uporabi postale komercialno zelo pomembne v biotehnologiji, kemični, farmacevtski in prehranski industriji ter v zdravstvu. V zadnjih letih je povpraševanje po encimih glukoza oksidaze naraslo predvsem zaradi uporabe v biosenzorjih. V tekstilni tehnologiji so glukoza oksidaze tudi metoda za pridobivanje vodikovega peroksida za beljenje celuloznih vlaken. Za tvorbo vodikovega peroksida se lahko uporabi glukoza, nastala pri predhodnem razškrbljanju tkanin. Tako je postopek beljenja z encimi glukoza oksidaze ekonomski in ekološki potencial v primerjavi s klasičnim postopkom beljenja z dodatnim vodikovim peroksidom. Prispevek opisuje osnovne značilnosti in postopke pridobivanja glukoza oksidaz ter podaja pregled uporabe v različnih tehnoloških segmentih s poudarkom na dosedanjih raziskavah pri beljenju bombažnih vlaken.

Ključne besede: encimi, glukoza oksidaze, beljenje, fermentacija, glukonska kislina

Glucose oxidases catalyse the oxidation of β -D-glucose into gluconic acid by utilizing molecular oxygen as an electron acceptor with a simultaneous production of hydrogen peroxide. Due to their versatility, glucose oxidases are commercially gaining a lot of attention in biotechnology, in the chemical, pharmaceutical and food industry, as well as in health care. The demand for the application in biosensors has increased recently. In the field of textile technology, glucose oxidases represent a method for the generation of hydrogen peroxide required for bleaching cellulose fibres. For the generation of hydrogen peroxide, the glucose gained during desizing can be used. Bleaching with glucose oxidase thus represents an economic and ecological potential when compared to the classical process with added hydrogen peroxide. This review represents the basic properties and production processes of glucose oxidases, reveals their multitudinous technological applications and emphasises recent research in the field of bleaching cotton fibres.

Keywords: enzymes, glucose oxidase, bleaching, fermentation, gluconic acid

Strokovni članek Professional Paper

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Označevanje tekstilnih izdelkov, ki se prodajajo prek spletnih katalogov in spletnih trgovin

Labelling of Textile Products Sold via Online Catalogues and Shops

Tako kot v drugih državah članicah Evropske unije je tudi v Sloveniji označevanje določeno s Pravilnikom o navajanju surovinske sestave in o tekstilnih imenih, ki sledi evropski direktivi 96/74/EC. Skladno s pravilnikom morajo imeti tekstilni izdelki od leta 2004 na oznakah obvezno navedeno le surovinsko sestavo, medtem ko so drugi podatki neobvezni, priporočljivi. Nadzor nad označevanjem tekstilnih izdelkov v Sloveniji izvaja Tržni inšpektorat RS (TIRS). Z rednimi letnimi pregledi, ki jih TIRS izvaja neposredno na trgu, je bilo ugotovljeno, da se je stanje glede označevanja izdelkov v zadnjih letih bistveno izboljšalo, saj je delež neustrezno označenih izdelkov v zadnjih treh letih pod desetimi odstotki. Tako kot v vseh panogah se je v zadnjih letih občutno povečala ponudba tekstilnih izdelkov tudi na spletnih straneh. Ker omenjeni pravilnik predvideva ustrezno označevanje tudi v spletnih katalogih in v spletnih trgovinah, je bila izvedena analiza obstoječega stanja. Skupaj je bilo pregledanih 476 izdelkov, ki se prodajajo prek spletnih katalogov ali spletnih trgovin.

Ugotovljeno je bilo, da so izdelki, ki se prodajajo prek spletnih katalogov, v večini primerov skrbno in ustrezno označeni, medtem ko so izdelki v spletnih trgovinah označeni pomanjkljivo in pogosto neustrezno.

Ključne besede: označevanje tekstilnih izdelkov, spletna trgovina, spletni katalogi

In Slovenia, the labelling of textile products has to comply with the Rules on Fibre Composition Specification and Textile Names. These rules follow the European directive 96/74/EC, which must be adopted by all member states of the European Union. According to the Rules, all textile products must be labelled with fibre composition, while other information are optional, but recommended. Regular control over the labelling of textile products is performed annually directly on the market by the Market Inspectorate of the Republic of Slovenia (TIRS). According to their reports, the situation of textile labelling has improved significantly in the last few years. As in other branches, a significant part of textile products is also sold online. The rules about labelling such products are the same as for the products present directly on the market. Consequently, the analysis of the existent situation was performed

among textile products which were sold via online catalogues and shops. 476 items have been checked in this analysis. According to the results, the products sold via online catalogues are suitably labelled, while the products which are sold via online shops are often inadequately and inappropriately labelled.

Keywords: labelling of textile products, online shops, online catalogues