

Izvirni znanstveni članek *Original Scientific Paper*

Darinka Fakin¹, Darinka Tepeš², Alenka Majcen Le Marechal¹, Alenka Ojstršek¹, Mojca Božič¹

¹ Univerza v Mariboru, Fakulteta za strojništvo, Oddelek za tekstilne materiale in oblikovanje, Smetanova 17, Maribor, Slovenija/
University of Maribor, Faculty of Mechanical Engineering, Department of Textile Materials and Design, Smetanova 17, SI – Maribor, Slovenia

² Šolski center Šentjur, cesta na kmetijsko šolo 9, 3230 Šentjur pri Celju, Slovenija/
The School Center Šentjur, Cesta na kmetijsko šolo 9, 3230 Šentjur pri Celju

Barvanje volne z rastlinskimi barvili in vrednotenje vzorcev z uporabo barvnega sistema CIE

Dyeing of Wool with Plant Dyes and Sample Evaluation with CIE Colour System

V raziskavi smo proučili možnost uporabe rastlinskih barvil za barvanje volnene preje, ki se bo uporabljala za izdelavo unikatnih pletenih in vezenih izdelkov. V ta namen je bila izvedena ekstrakcija barvil iz različnih delov štirih izbranih rastlin, ki so v naravi razširjene in dostopne ter dajejo v osnovi rumene, rdeče, rjave in zelene barvne tone. To so navadna breza, navadna lakota, navadni oreh in velika kopriva. Za doseganje obsežnejše palete barvnih tonov ter boljše izčrpanje in fiksiranje barvil (večje obstojnosti) smo uporabili različne kovinske soli (Al, Cu in Fe) pri postopku ekstrakcije, pri barvanju in po barvanju (naknadna obdelava). Prav tako smo spreminjali kopelno razmerje ekstrakcije (različna začetna koncentracija barvil) in pH ekstrakta. Po barvanju smo vzorce oprali in izvedli preskus barvne obstojnosti na pranje pri temperaturi 40 °C. Obarvane vzorce volnene preje smo barvnometrično ovrednotili z uporabo barvnega sistema CIE in jih grafično prikazali v CIE a*b* barvnem diagramu.

Ključne besede: rastlinska barvila, ekstrakcija barvil, barvanje volne, kovinske soli, barvna metrika, barvni sistem CIE.

The aim of the research was to study the possibility of using plant dyes for the dyeing of wool yarn, which would later be used for unique knitted and embroidered products. In order to achieve this goal, the extraction of dyes was performed using various plants that are widely present in our area, using mainly yellow, red, brown and green shades. These plants are birch tree, lady's bedstraw root, nut tree and big nettle. To attain a wider palette of colour shades, and superior dye exhaustion and fixation (for better colour fastness), different mordants (i.e. Al, Cu and Fe) were used during the extraction, the dyeing process or after the dyeing (i.e. after-treatment). The liquor ratio of the extraction (different initial dye concentrations) and pH of the extract varied as well. Wool samples were washed after the dyeing and tested for colour fastness during washing at temperature 40 °C. The dyed samples were colourimet-

*rically evaluated using the CIE colour system and graphically presented in the CIE a*b* colour diagram.*

Keywords: plant dyes, dye extraction, wool dyeing, mordants, colourimetry, CIE colour system.

Izvirni znanstveni članek *Original Scientific Paper*

Marija Gorjanc¹, Janez Kovač², Marija Gorenšek¹

¹ Univerza v Ljubljani, Naravoslovnotehniška fakulteta, Oddelek za tekstilstvo, Snežniška 5, 1000 Ljubljana, Slovenija/
University of Ljubljana, Faculty of Natural Sciences and Engineering, Department of Textiles, Snežniška 5, SI-1000 Ljubljana, Slovenia

² Inštitut Jožef Stefan, Jamova cesta 39, 1000 Ljubljana, Slovenija/
Jožef Stefan Institute, Jamova cesta 39, SI – 1000 Ljubljana, Slovenia

Rentgenska fotoelektronska spektroskopija za določanje kemijskih sprememb na površini bombaža po obdelavi s korona in nizekotlačno plazmo

X-Ray Photoelectron Spectroscopy for Determination of Chemical Changes on the Cotton Surface After Corona and Low-Pressure Plasma Treatment

Surovo, beljeno in beljeno/mercerizirano bombažno tkanino smo obdelali v zračni korona plazmi in nizekotlačni plazmi vodne pare. Pred obdelavo s plazmo in po njej smo površine bombažnih tkanin preiskali z rentgensko fotoelektronsko spektroskopijo (XPS). Rezultati raziskave kažejo, da plazemska obdelava bombaža selektivno čisti necelulozne komponente, na površini bombaža se povečata koncentracija kisika in število funkcionalnih skupin, temelječih na kisiku. Oksidacija površin bombažne tkanine je močnejša pri uporabi korona plazme kot pri uporabi nizekotlačne plazme.

Ključne besede: bombaž, celuloza, korona, nizekotlačna plazma, XPS, rentgenska fotoelektronska spektroskopija

Raw, bleached and bleached/mercerized cotton fabrics were treated in air corona and in low-pressure water vapor plasma. The surfaces of untreated and plasma treated cotton fabrics were investigated with X-ray photoelectron spectroscopy (XPS). Research results show that plasma selectively cleans non-cellulosic substances of cotton, oxygen concentration on the surface and binding of oxygen containing functional groups to the surface is noticeable. The oxidation of cotton surfaces is stronger when using corona plasma than when using low-pressure plasma.

Keywords: cotton, cellulose, corona, low-pressure plasma, XPS, X-ray photoelectron spectroscopy

Pregledni znanstveni članek *Scientific Review*

Alenka Pavko Čuden

Univerza v Ljubljani, Naravoslovnotehniška fakulteta, Oddelek za tekstilstvo, Snežniška 5, 1000 Ljubljana, Slovenija/*University of Ljubljana, Faculty of Natural Sciences and Engineering, Department of Textiles, Snežniška 5, SI-1000 Ljubljana, Slovenia*

Parametri zbitega levo-desnega pletiva (1. del): moduli zanke in Mundenove konstante – stanje raziskav

Parameters of Compact Single Weft Knitted Structure (Part 1): Loop Modules and Munden Constants – State of research

Različni avtorji so eksperimentalno preverjali veljavnost geometrijskih modelov zanke ter analizirali strukturne parametre pletiva in module zanke. Nekateri avtorji so, podobno kot avtorji geometrijskih modelov zanke, opisno in/ali matematično ločili ohlapno, normalno (idealno) in zbito strukturo pletiva. Preskušali so pletivo iz konvencionalnih prej brez elastanskega jedra. Podan je pregled parametrov pletiva ter analizirano stanje raziskav na področju zbitosti/poroznosti levo-desne pletene strukture.

Ključne besede: pletenje, pletena struktura, moduli zanke, Mundenove konstante, faktor kritja

Various authors have experimentally examined the validity of geometrical loop models and analysed the structural parameters of the knitted structure and loop modules. Similar to the authors of geometrical loop models, some researchers have described and/or mathematically defined the open, normal (ideal) and compact knitted structure. They mainly examined knitted fabrics made from conventional yarns without the elastane core. The review of the knitted structure parameters is given and the state of research of the single structure porosity/compactness is analysed.

Keywords: knitting, knitted structure, loop modules, Munden constants, cover factor

Strokovni članek *Professional Paper*

Maja Hawlina

Studio Poper, za komuniciranje v javnem prostoru Ljubljana/*Studio Poper, conceptual, creative and tactical interactions, Prule 19, SI-1000 Ljubljana, Slovenia*

Vsi mladi, vsi kreativni, vsi modni? O mladih danes v svetu mode

All Young, All Creative, All Fashionable? About the Young People of Today in the World of Fashion

Studio Poper in Oddelek za tekstilstvo na Naravoslovnotehniški fakulteti v Ljubljani sodelujeta pri evropskem projektu EDU-fashion, katerega poglobitni namen je ustvariti skupnost, ki bi s sodelovanjem, kolektivnim ustvarjanjem in inovacijami pripe-

ljala do novih vizij in praks v modi. V obliki spletnega portala bo ustvarjeno alternativno izobraževalno okolje, ki bo omogočalo razširjanje znanja, veščin in praks za usposobljenost predvsem mlajših in neveščih ustvarjalcev oblačil in mode. Ker bo projekt uspešen le, če bo pritegnil k sodelovanju veliko mladih, je osrednjega pomena, da razumemo današnje mlade ljudi s poudarkom na tistih, ki vstopajo v svet oblikovanja in mode; kakšni so, kaj jih zanima, kakšni so njihovi vrednotni sistemi, katerim (sub) kulturam pripadajo. V kontekstu vseprisotne in za mlade zelo vplivne ideologije kreativnosti je članek osredinjen na identiteto mladih s poudarkom na lastnostih, ki osvetljujejo poudarjeni individualizem, potrebe po ekspresiji in kreativnosti, narcisizem, fenomen kulturnih kapitalov mladih ter na (sub)kulture kot mesta, ki dajejo prostor za izražanje mladih in za potencialne družbene spremembe.

Ključne besede: moda, mladi, spletni portal, projekt

Studio Poper and the Department of Textiles at the Faculty of Natural Sciences and Engineering in Ljubljana are in collaboration within the European project EDUfashion. The main purpose of the latter is to create a community that would contribute through cooperation, collective creation and innovations to a new vision and practices in fashion. An alternative educational environment will be created in the form of a web site enabling the spreading and sharing of knowledge, skills and methods with the purpose of empowering primarily the younger and precarious fashion designers/producers of clothes and fashion. Since the only way for the project to be successful is to attract the involvement and cooperation of the young, it is essential to understand the youth of today, focusing on those who are entering the world of fashion; what they are like, what interests them, what their value systems are, what (sub) cultures they belong to. The article focuses on the young people's identities, emphasising the characteristics that illuminate the highlighted individualism, the need for expression and creativity, narcissism, the phenomenon of cultural margins of the young and the (sub)culture as a site providing space for their expression, and the potential for changes in society.

Keywords: fashion, young people, web site, project