

# Student projects

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2014+

## **Textile students exhibition “Ljubljanski cek’r”**, project within the 1st Bologna study programme course

Computer assisted design for printing

Students: Škurta Avdijaj, Ana Jan, Anja Jermančič, Sandra Kregelj, Nina Logar, Petra Milošević, Katarina Rajevec, Sabina Stipič, Sara Stipič, Neža Sukič, Nika Župan, Laura Fajfar

Mentors: Marija Gorjanc, Alenka More

The exhibition presents the work of textile students (2nd and 3rd year Textile and Clothing Planning and 3rd year Textile and Clothing Production) that have designed and produced an environmentally friendly bag with the motif of Ljubljana. The inspiration for the motif came from walking the city or from their memory of a favourite location. Using a professional computer program for drawing vector graphics, the students drew a motif of Ljubljana and produced a print form. The form was printed onto cotton fabric; the fabrics were tailored into bags. The students demonstrated the ability to carry out ideas in practice, thereby stressing the importance of knowledge of textile technology. This project was also presented as a contribution to the 45th Symposium on Novelties in Textiles in the form of oral presentation.

## **Creating superhydrophobic and oleophobic cotton fabric dyed with reactive dyes** – original scientific research work of students in 2nd Bologna study programme

Students: Tina Mandelj, Rahela Kurent, Kristina Zdovc, Katarina Drevenšek, Nina Pajsar

Mentors: Mateja Kert, Barbara Simončič, Brigita Tomšič, Marija Gorjanc

Within the scope of the course Advanced finishing processes of the postgraduate study programme Textile and Clothing Planning, students researched the influence of dyeing with three reactive dyes – Avitera SE, i.e. yellow, red and blue – on the functional properties of cotton fabrics finished with SiO<sub>2</sub> nanoparticles, hydro- and oleophobic finish (FAS) and the combination of both (SiO<sub>2</sub>+ FAS). At the same time, the influence of applied finishes on the colour change of dyed cotton fabrics was also studied. Superhydrophobic properties were obtained in the case of all studied samples and were not affected by previous dyeing. Despite the application of SiO<sub>2</sub> nanoparticles, the samples did not obtain self-cleaning properties. Application of finishes led to oil repellency, which slightly increased on the previously dyed samples. The finishes showed good washing resistance. The colour of undyed and dyed samples was strongly influenced by the presence of finishes. The dyed and finished samples had poor light fastness, which was visible from the colour differences results. The results of the research were presented at the 45th symposium on Novelties in Textiles and as an original research article in the journal *Tekstilec*.

2013+

## **Visual and functional properties of digital printed and finished anaglyph pictures on cotton fabric** – original scientific research work of students in 2nd Bologna study programme

Students: Špela Zakrajšek, Danaja Štular, Špela Vasič Štepančič

Mentors: Petra Forte-Tavčer, Barbara Simončič, Marija Gorjanc, Brigita Tomšič

Within the scope of the course Advanced finishing processes of the postgraduate study programme Textile and Clothing Planning, students researched the influence of various protective finishes on the visual properties of anaglyph images and CMYK primary colours digitally printed on a cotton fabric. Using the impregnation process, one-component water- and oil-repellent finishes, flame retardant finishes and a combination of both were subsequently applied on the printed samples. A visual evaluation was determined for the 3D visual effect of printed samples. The results showed that the presence of finishes changed the colour properties of prints; however, it did not impair the 3D effect of the anaglyph image, which was maintained even after repeated washings and exposure to artificial light. The prints did not influence the functional repellent and flame retardant properties. However, the impaired wash fastness of finishes was observed. The results of the research were presented at the 44th Symposium on Novelties in Textiles and as an original research article in the journal *Tekstilec*.

2012+

**Creation of "lotus effect" on cotton fabric with use of plasma, enzymes and sol-gel finishing** – original scientific research work of students in 2nd Bologna study programme

Students: Katja Jazbec, Anja Maloprav, Mateja Godec

Mentors: Barbara Simončič, Petra Forte-Tavčer, Marija Gorjanc

Within the scope of the course Advanced finishing processes of the postgraduate study programme Textile and Clothing Planning, students researched the influence of the pretreatment of cotton using environmentally friendly processes, i.e. plasma and enzymes, on the quality of hydro- and oleophobic sol-gel coating. The results showed that the pretreatment of cotton using plasma and enzymes results in the creation of micro- to nanostructured surface roughness of fibres, increased water contact angle higher than 150°, decreased sliding water angle and increased oleophobicity of sol-gel finished fabric. The "lotus effect" was most noticeable on the finished samples pretreated with plasma. The chemical modification of fibres did not change the stiffness of the fabric; however, it did slightly worsen its breaking force. The results of the research were presented at the 43rd Symposium on Novelties in Textiles and as an original research article in the journal *Tekstilec*.