

Designing Function Knitted and Woven Upholstery Textile With SCOPY Film

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Abstract : Different textile materials are usually used in upholstery. However, upholstery parts may become unhealthy when dust accrues and bacteria raise on the surface, which negatively affects the user's health. Also, leather and artificial leather were used in upholstery but, leather has a high cost and artificial leather has a potential chemical risk for users. Researchers have advanced vegie leather made from bacterial cellulose a symbiotic culture of bacteria and yeast (SCOPY). SCOPY remains a gelatinous, cellulose biofilm discovered floating at the air-liquid interface of the container. But this leather still needs some enhancement for its mechanical properties. This study aimed to prepare SCOPY, produce bamboo rib knitted fabrics with two different stitch densities, and cotton woven fabric then laminate these fabrics with the prepared SCOPY film to enhance the mechanical properties of the SCOPY leather at the same time; add anti-microbial function to the prepared fabrics. Laboratory tests were conducted on the produced samples, including tests for function properties; anti-microbial, thermal conductivity and light transparency. Physical properties; thickness and mass per unit. Mechanical properties; elongation, tensile strength, young modulus, and peel force. The results showed that the type of the fabric affected significantly SCOPY properties. According to the test results, the bamboo knitted fabric with higher stitch density laminated with SCOPY was chosen for its tensile strength and elongation as the upholstery of a bed model with antimicrobial properties and comfortability in the headrest design. Also, the single layer of SCOPY was chosen regarding light transparency and lower thermal conductivity for the creation of a lighting unit built into the bed headboard.

Keywords : anti-microbial, bamboo, rib, SCOPY, upholstery

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