National University of Science and Technology

Think in Other Terms

FACULTY OF INDUSTRIAL TECHNOLOGY
DEPARTMENT OF TEXTILE TECHNOLOGY

RESEARCH TITLE:

FACTORS THAT AFFECT VISUAL APPEARANCE AND FASTNESS PROPERTIES OF HAND SCREEN PRINTED TEXTILES.

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ABSTRACT

Screen printing parameters namely screen mesh, squeegee pressure, squeegee angle and print paste viscosity were varied and used to print on three types of fabrics namely plain, twill and satin to elucidate the factors that affect visual appearance as well as fastness properties of hand screen printed textiles. All the three fabrics showed poor fastness properties when printed under high pressure and fairly good to excellent fastness properties when printed under low pressure meaning the amount of pressure to be applied should just be enough to force the print paste through the screen. Under high viscosity of print paste, plain and twill fabric samples showed good fastness properties but poor properties for the satin samples whilst under low viscosity, the satin and the twill reflected poor fastness properties but good properties were obtained in the plain fabric indicating that the mobility of the yarns in the satin and twill fabrics contributed to the poor results. Samples printed using fine screen mesh (T 70) showed good fastness properties on plain fabrics and fairly good to poor properties for the satin and twill fabrics whilst those printed using coarse screen mesh (T 110) showed excellent fastness properties for the twill and fairly good properties for the plain and satin fabrics. Lastly, samples printed using 30° squeegee angle showed excellent fastness properties for the twill fabric and fairly good properties for the plain and satin, those printed using 45° squeegee angle showed fairly good to poor fastness properties for all the three fabrics with the satin samples being the poorest whilst those samples printed using 60° squeegee angle reflected excellent fastness properties for the plain fabric, fairly good for the twill fabric and very poor properties for the satin.