Development of Eco-friendly Garments washing for localized ading effect on Garments-A future Sustainable Process for Single step dyeing-fading effect

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Abstract

This article deals with some unconventional but eco-friendly processes for fading with natural indigo dye. During the study, three different methods were used for fading denim garments namely; a) fading by UV radiation of sunlight [Method I], b) fading by calcium hydroxide [Method II] and c) fading by stitched with extra fabric [Method III]. To compare the different physico-mechanical properties of fabric such as Color strength, Rubbing fastness, Drapability, Fabric stiffness and Fabric strength of both dyed and faded areas were determined. The significant results were observed for the fading by method III, exhibiting higher fading percentage 84.58 % with higher drapability, lower stiffness and higher strength.

Key words: Denim, Fading, Natural Indigo Dye, Physico-mechanical Properties etc.

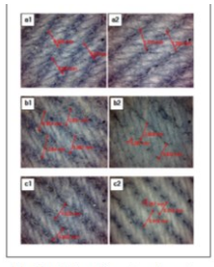
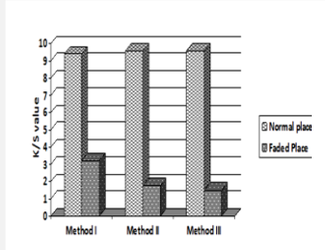
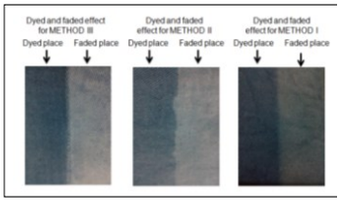


Fig.. Morphology of experimental samples; a1) Dyed sample of method I; a1) faded sample of method I; b1) Dyed sample of method II; b2) faded sample of method II; c1) Dyed sample of method III; c1) faded sample of method III





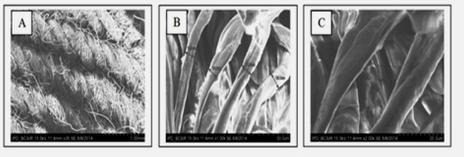


Fig.4. A) SEM analysis of date palm reduced sample at 35X ; B) SEM analysis of date palm reduced sample at 1000X C) SEM analysis of date palm reduced sample at 2000X

About the speaker

Mr. Md. Delwar Hossain is an Assistant Professor in the department of textile engineering at Dhaka University of Engineering and Technology (DUET) where he has been a faculty member since 2012.

Delwar Hossain completed his MSc at BUTEX and undergraduate studies in DUET. His research interest lies in the area of garments dyeing & washing, Nanotechnology, sportswear & protective clothing.

His research focuses on the development of eco-friendly, sustainable, optimization of process in garments dyeing and washing.

Full paper is not available. The speaker can be contacted for further details.