

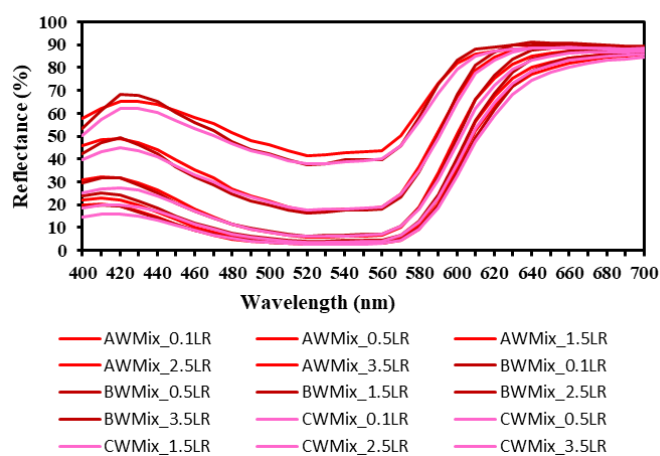
Abstract

A novel dyeing approach using reverse-micelle encapsulated low energy disperse dyes was used for dyeing polyester/cotton (T/C) blended fabric with different T/C ratios of 32/68, 40/60 and 65/35. Warm type reactive dyes were used for dyeing the cotton part. The investigation was conducted in a one-bath one-step dyeing process. The exhaustion of low energy disperse dyes in reverse-micellar dyeing system at 98°C was shown significantly better than two-step aqueous dyeing system (130°C for disperse dyeing and 70°C for reactive dyeing). It was noticed that the dyes were stable throughout the dyeing process with regard to the colour reflectance findings.

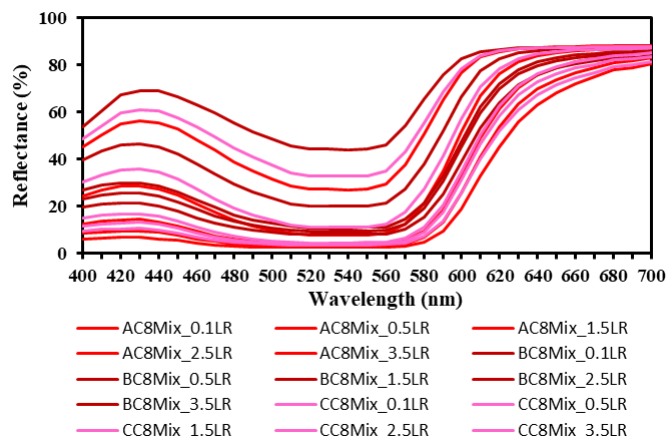
Keywords: One-bath dyeing, polyester/cotton blends, low energy disperse dye, reactive dye, reverse micelle

Content:

A dyeing approach using reverse-micelle encapsulated low energy disperse dyes and warm type reactive dyes for polyester/cotton blend fabrics with T/C ratios (32/68, 40/60 and 65/35) has been investigated in a one bath one step process. The exhaustion of low energy disperse dyes in reverse-micellar dyeing system at 98°C was shown significantly better than two-step aqueous dyeing system (130°C for disperse dyeing and 70°C for reactive dyeing). It was noticed that the dyes were stable throughout the dyeing process with regard to the colour reflectance findings. The physical mixture of dyes showed that reverse micellar dyeing of polyester/cotton blend fabrics possessed good shade properties and offers an option of coloration of polyester/cotton blend fabrics in a simple and energy-saving one-bath one-step dyeing process.



Water-based dyeing results



Reverse micelle-based dyeing results

Acknowledgement

Authors would like to thank the financial support from the Hong Kong Polytechnic University for this work (Account code: R-ZDCC).