

Vorabodee Sriumaoum 2013: Investigation of the Dyeing and Fastness Properties of Natural Dyes on Polyester Fabrics. Master of Science (Textile Industrial Technology and Merchandising), Major Field: Textile Industrial Technology and Merchandising, Department of Textile Science.
Thesis Advisor: Assistant Professor Jantip Setthayanond, Ph.D. 96 pages.

The dyeing and fastness properties of natural dyes viz. Natural Orange, Natural Red Brown, turmeric and cassumunar dyes were investigated on PLA and PET fabrics. The water solubility and partition in water and octanol (log P) solvents of the dyes were examined. The results showed that water solubility and log P values of the dyes related to their dyeing properties on the polyester fabrics. The poor water-soluble dyes, turmeric and cassumunar, exhibited good dyeing properties on these polyester fabrics especially PLA while those having high water solubility and lower log P (Natural Orange and Natural Red Brown) could hardly dye on the fabrics. The spectroscopic property study of turmeric dye in organic solvents (ethyl acetate and methyl benzoate) could be used to explain the different color properties of the dye on PLA and PET. Turmeric and cassumunar dyes were also found to display fluorescence emission properties in particular on PLA. The color fastness of the turmeric and cassumunar dyes on PLA and PET were in a moderate-to-good level for fastnesses to washing, perspiration and rubbing but very poor light fastness was observed. Thus, an improvement of light fastness by using chitosan was studied.

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Thesis Advisor's signature

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