

Introducing Henna As a Natural Colorant to Dye Nylon With Metal Chelation and Assessing the Dyeing Performance

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Abstract : Since the beginning of human civilization, natural dyes have been adored in textile coloration due to their non-hazardous nature compared to commercial dyes, recyclability, safety and a plethora of congenial attributes. Henna is an herb leaf that is used to color hands in Muslim festivals, hence it is a part of tradition. In this study, Henna (*Lawsoniainermis* L.) has been used to dye nylon fabric with and without mordants. In the case of the mordanting process, metal chelation of Ferrous Sulphate (FeSO_4) and Copper Sulphate (CuSO_4) was used. The dyeing behavior of natural dye Henna with or without mordant was examined by analysis of colorimetric properties of color, depth of shade measurement and colorfastness properties of dyed fabric sample was also assessed as well. The study shows dye absorption of fiber has considerably increased by using mordants which in return exhibits a greater depth of shade, also the dyed samples demonstrated excellent fastness ratings in wash fastness, rubbing fastness, and Perspiration fastness with little to no change in color obtained.

Keywords : sustainable dyeing, henna, mordanting, metal chelation

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