

Using of Laser Induced Fluorescent Technique as a Non-invasive Technique for Identification of Natural Dyes on Textile Objects in the Museum of Faculty of Applied Arts

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Abstract

Identification of dyes in a textile object is an important step for providing the appropriate effective conservation treatment. Identification of dyes in museum textile objects not only assists in establishing appropriate strategies for their conservation but it sometimes assists in their dating and locating their origins in addition to providing invaluable insights to the application of appropriate treatments during conservation and restoration work. The usefulness of a method can be used for identifying a dye on a historical textile object should be evaluated and chosen according to its diagnostic power, representative nature, reproducibility, destructiveness/invasiveness and accessibility. This study aims to evaluate the use of Laser Induced Fluorescent as a non-invasive technique for identification of natural dyes on textile objects in the museum of Faculty of Applied Arts. In this study wool textile samples were dyed with selected natural dyes that are common used in various historical periods in Egypt. Dyes used in this study are Cutch, Safflower, Indigo, Lac, Madder, Saffron, Sumac and Turmeric. These selected natural dyes will be used as known references that can be used a guide to identify unknown dyes on museum textiles. All dyed textile samples were investigated with Laser Induced Fluorescent in different wavelengths to detect the best wavelengths for identification each dye. Also all dyed samples

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were investigated using High Performance Liquid Chromatography with Photodiode Array Detection (HPLC-PDA).