J10 Developing an Ink Database for Commonly Used Pens Manufactured in Pakistan

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The goal of this presentation is to present one of the first important research projects from Pakistan regarding database inks.

This presentation will impact the forensic science community by detailing the steps taken to establish a database of inks used in ballpoint pens, gel pens, and other types of pens in Pakistan where forensics is a new field.

Pakistan is a developing country where questioned document laboratories are very limited as forensics is a new field. These forensic laboratories encounter a variety of cases that are received from all regions of Pakistan. In this study, the database of different brands of blue and black ballpoint pens, gel pens, and other types of ink pens used in Pakistan were established. The variations in blue and black inks were observed because of the presence of different colorants. The data of Ultraviolet/Visible (UV/Vis) spectrophotometer and Fourier Transform Infrared (FTIR) will enable questioned document experts to recognize which brand of ink was used to forge the document, making discrimination and comparison concerning addition, alteration, or obliteration in the document easy to reveal. In this study, the database of different brands of commercial ink pens are further used for comparison of different questioned documents such as bank checks, wills, court orders, and property documents. This presentation will impact the forensic science community by providing a sufficient amount of data that is required to process the questioned documents more efficiently by being less time consuming and less expensive.

In many criminal and civil cases in Pakistan, the most commonly questioned documents are those written in pen ink. An important task for forensic document examiners is to identify whether two or more ink entries on one or more documents were written with the same ink type. Comparison analysis of the ink reveals information about addition, alteration, or obliteration of entries on the document. In this study, a wide range of commercial blue and black ballpoint pens were used to investigate the discriminating characteristics of the different inks found on the same document. The ink from pens and ink extracted from lines on paper written with ballpoint pens were subjected to UV/Vis spectroscopy, Infrared (IR), and reflectance spectrophotometer.

Questioned Documents, VSC 6000/HS, FTIR

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