



J5 An Analysis of Indented Writing Impressions in Questioned Documents Using Flatbed Scanners in Pakistan

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After attending this presentation, attendees will better understand how to decipher indented writing on different types of paper without using the Electrostatic Detection Apparatus (ESDA). Indented writing on documents has great importance in solving questioned documents cases. Therefore, in this research lecture, different techniques will be discussed relating to how results can be obtained without using an ESDA.

This presentation will impact the forensic science community by demonstrating a non-destructive process that leaves no marks on the document and has significant results.

Pakistan has been affected by the worst form of terrorism and militancy. The scourge of terrorism has taken its toll on every aspect of life. One of the better ways to help to overcome these difficulties is through education, and, in particular, high-level research and development in the field of forensic sciences. Indented writing may have significant value in resolving questioned document issues. As the term implies, indented writings are non-visible indentations applied to a sheet of paper positioned below the page actually written upon. While a specialized laboratory instrument can be used by document examiners to recover indented writing, the indentations may be made visible by using side light and flatbed scanners with the use of software. This is a non-destructive process in which the questioned documents do not have any type of change or effect. In this study, different types of techniques were used on different weights of paper.

Forensic document examination is the application of forensic science in analyzing questioned documents. Indented writing impressions can be seen by using an angled, oblique light with high intensity, or more accurately, by using the ESDA; however, because of the limited resources in Pakistan, the accessibility of costly equipment such as the ESDA in forensic labs in all provinces of Pakistan is limited. This suggests that an instrument with equal performance and lower price should be a substitute. In this study, various types of papers found at crime scenes that had indented impressions were analyzed using the ESDA and commercial flatbed scanners with image enhancement software (Adobe® Photoshop® CS-8). This study was divided into three experiments: (1) dissimilarity of interleaving paper; (2) paper quality test; and, (3) variation of writing pressure. The results of this study reveal that flatbed scanners can be used as an alternative instrument for recovery and revealing of indented writing impressions.

Questioned Documents, Indented Writing, Adobe® Photoshop® (CS-8)