



J1 An Examination of Highly Deceptive Counterfeit Currency

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After attending this presentation, attendees new to the field will have gained a useful learning experience regarding security features present in Pakistani currency notes, while practicing questioned document examiners will have a better understanding of those security features that require special attention when dealing with the detection of high-technology counterfeit currency.

This presentation will impact the forensic science community by illustrating various security features that have been emulated to a high degree of success by counterfeiters and those qualities that could not be replicated.

Counterfeiting of currency has been occurring for ages, and there has been a continuing race between certifiers and counterfeiters for all that time. The state always attempts to introduce security features cannot be forged in their currency notes, but the problem of counterfeits has persisted. Counterfeiters attempt to duplicate the overt features and appearance of genuine currency notes and include at least some of the required security features in their counterfeit products. The original security features that require uncommon high-technology facilities cannot be duplicated in the same way as they appear in genuine notes; however, the introduction of sophisticated color printers, color photocopiers, and scanners in the early 1990s brought a dramatic shift in counterfeiting technology. This new technology has made it possible for counterfeiters to produce imitation currency of a higher quality. A number of counterfeit detection methods are being used by crime laboratories and other law enforcement agencies, but some are time consuming, some are imprecise, and some are destructive. In this presentation, a non-destructive method of counterfeit Pakistani currency note detection that does not involve specialized equipment, except for the readily available video spectral comparator and stereomicroscope, will be demonstrated.

A case study involving the examination of Rupees 5000 and Rupees 1000 Pakistani currency notes for their genuineness was performed in a non-destructive manner by using a Video Spectral Comparator (VSC6000) and a stereomicroscope. Both reference and questioned currency notes were examined for all available security features, including Ultraviolet (UV) -luminescent features, intaglio printing, watermarks, denomination printed with see-through register, and the flag printed with Optically Variable Ink (OVI). This comparative study revealed that the questioned currency notes included security fibers, security thread, see-through register, watermarks, UV-luminescent printing, and the OVI-printed flag appeared similar to those in genuine currency notes, but the quality of the watermark, UV-luminescent printing, and positioning of the see-through register was found to be different. A detailed examination of the inks used to produce micro-printed features revealed that a four-color printing process had been used instead of monochromatic printing inks and the rainbow printing process. Keeping in view all previous observations from counterfeit currency notes submitted at different time intervals for examination, it can be concluded that micro-printing features and rainbow printing are the most difficult to be introduced into counterfeit currency notes, so these features must be observed carefully by the examiners.

Counterfeit Currency, Questioned Documents, Security Features