

# Abstracts

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## **Examination of Counterfeit Banknotes Printed by All-in-One Color Inkjet Printers (Joyce L. C. Chim, Chi-Keung Li, N. L. Poon, and Sze-Chung Leung)**

An increasing number of cases related to counterfeit Hong Kong banknotes produced by all-in-one inkjet color printers have been encountered recently. Unlike those generated by color laser printers or photocopiers, characteristic dot patterns or irregularities are not present on counterfeit banknotes generated by color inkjet printers, thus creating difficulties in the identification of the printer. This paper describes the relationship between the counterfeit banknotes and printers seized in local clandestine factories. The conventional thin layer chromatography (TLC) method was employed to study the ink profiles of the inks present on the counterfeit banknotes and was found to be a useful tool for distinguishing different printer inks.

## **Thermal Gradient Mechanism of Line Crossing Anomaly (James R. Daniels)**

Order-of-strokes tests were conducted to investigate a potentially misleading feature of line crossings in a specific category, namely intersections of moderately embossed handwriting and laser printing, in which rarely encountered crossings of laser printing over pre-existing pen strokes mimic the opposite and more normal order.

## **Authentication of Travel Documents via the ImageXpert System (Colin Estabrooks, Cathie Gilmour, Helen Park, Robert Vallières, and Christine Warias)**

In this study, genuine and counterfeit travel documents were critically measured and analyzed with the aid of the ImageXpert System. A variety of printing processes and security features from both genuine and counterfeit passports were measured using various tools within the software of the ImageXpert System. The data from these measurements was then compared in an effort to discriminate high-quality counterfeits from genuine documents. In addition, any potential links amongst the counterfeits were also noted.

## **The Significant Contributions of Dr. Philip D. Bouffard to the Examination and Classification of Typewriting (Mary W. Kelly)**

In 1987, Dr. Philip Bouffard began his work on developing a personal computer-based classification system for typewriting, which later became known as "TYPE." It was designed for classification of type-style specimens from the Haas Atlases. These atlases were created by Josef Haas beginning in 1972 in Germany. Dr. Bouffard's system makes use of separate classification schemes for each of the major design groups.

## **The Differentiation of Color Laser Printers (Chi-Keung Li, Wai-Chung Chan, Yau-Sang Cheng, and Sze-Chung Leung)**

A survey of color laser printers from different manufacturers (Canon, Epson, Fuji Xerox, Ricoh, Minolta, Hewlett-Packard, and Tektronix) resulted in the observation of dotted motifs of different patterns on the printouts from Canon, Epson, Fuji Xerox, and Ricoh color laser printers. Studies thus far found that the dotted motifs were different on the same model of Canon printers that each bore a different serial number. The data suggests that these distinctive dotted patterns are related to the serial numbers of the machines and could be used for the identification of a particular color laser printer. A feasibility study on the use of Raman spectroscopy for the differentiation of toners of different manufacturers of color laser printers was found to be unhelpful in discriminating printers.

## **Methods of Forgery in Counterfeit Travel Documents**

**(P. K. Ng, W. S. Hui, Joyce L. C. Chim, Chi-Keung Li, and N. L. Poon)**

With rapid developments in international travel, fraudulent travel documents used by illegal immigrants and criminals are frequently encountered by document examiners in Hong Kong. As the methods of forgery display certain consistent trends for a particular type of forged travel documents, the discovery of evidence of tampering or alteration on these documents is not a random process but is often targeted towards specific aspects of forgery. This article describes some of the target examination of some types of passports encountered in the authors' laboratory, namely, the People's Republic of China (PRC), Hong Kong Special Administrative Region, People's Republic of China (HKSAR PRC), Canadian, Korean, and the Philippines.