



## Questioned Documents Section – 2004

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### **J6 To Identify and Classify Questioned Paper by Using FT-IR, Reflectance Spectrophotometer, Pyrolysis GC/Mass Spectrophotometer**

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The goal of this presentation is to improve the accuracy of forensic paper analysis.

This presentation will impact the forensic community and/or humanity by demonstrating that experimental results not only can offer the investigator to trace the source and the manufacturer of paper evidence, but also can be regarded as an effective crime evidence for the judiciary to judge.

The result of paper examination, either by physical or chemical analysis, is always much beneficial to the paper evidence or other related questioned document forgery investigation work. Currently, most questioned document examiners can distinguish the physical difference between the faked and genuine paper evidence by using the traditional physical method, such as measure the thickness of the paper, optical microscopy examination, UV-examination, etc. But recently, our laboratory was often been asked by the law enforcement agencies not only to identify the authenticity of the questioned paper evidence, but also to identify the origin of the paper, or whether the origin of the paper was came from the same origin by comparing it with the other specific faked paper evidence or other specific questioned paper. In such condition, traditional physical examination method may not be able to offer a satisfactory result.

It is therefore necessary to invent a better chemical analysis method to solve the problem, we collect extensively the paper evidence which are came from some document criminal cases. In addition, ten brands of printing/copier papers will also to be gathered. The objective of this research is to discriminate paper, so we will establish systematized analysis methods for examining surface chemical composition of paper via analysis of inorganic fillers and coating pigment and/or additives using Fourier transform infrared spectroscopy (FT-IR), reflectance spectrophotometer, and pyrolysis GC/Mass spectrophotometer. The experimental results not only can offer the investigator to trace the source and the manufacturer of paper evidence, but also can be regarded as an effective crime evidence for the judiciary to judge.

#### **Paper Evidence, Fourier Transform Infrared Spectroscopy, Pyrolysis GC/Mass Spectrophotometer**