

Forensic Document Examination Using Magnetic Imaging Techniques

*T. Jagielinski, F. Chamberlain, D. Yang, and M. Yount
San Diego Magnetics, Inc.
San Diego, California*

Abstract

Magnetic materials have been used in documents for years. Most black and white copiers use magnetic toners to print, even ink jet technology is now capable of printing using magnetic ink. Today the ubiquitous distribution of high technology scanning and printing equipment enables the "casual" user to alter or make counterfeits of high value documents. The forensic community has traditionally relied on the examination of visible features in documents to identify the printing device and also to verify the document's authenticity. Magnetic technology can add hidden information to documents such as stock certificates, checks, airline tickets, identification cards or transit documents. A solution to forensics is magnetic imaging that can convert optically invisible magnetic patterns into an image, which can be then compared with an optical scan. Depending on the design of a security feature, if the

magnetic image is identical to a visible picture, a document could be a counterfeit. We will address the issues related to the magnetic scanning of high value documents printed using different techniques. We will also show how magnetic imaging can provide valuable information in understanding alterations to high value documents.

Biography

Dr. Jagielinski has over 25 years of experience in the high technology fields including magnetism, sensors, thin film devices, data storage, biosensors, and currency and document security. Formerly he was a Director of San Diego Laboratories a Division of Eastman Kodak Company. He holds 15 patents and has co-authored over 75 published papers. He is holding a Doctorate degree in Electrical Engineering and Materials Science and Engineering from Warsaw Technical University, Poland.