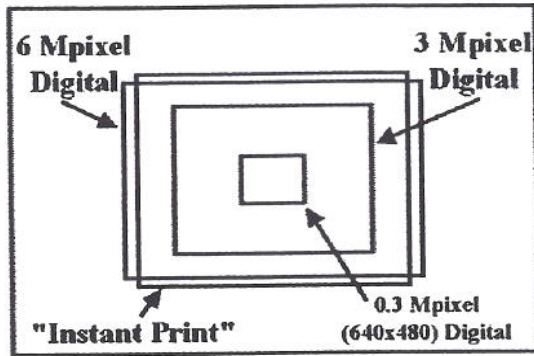


ISO200 35mm Color Film



light
0.2 - 0.3 μ

0.1 μ
10 pixels
micron
really
need
25 pixels

Consequences: Examiners of footwear and tire tread impression evidence are already facing the consequences of reduced image quality. Although no formal studies have been conducted, discussions with numerous examiners indicate that the number of "Inconclusive" results in these examinations is increasing at a rate that parallels the rate at which digital images are submitted for comparison. Another type of examination that could suffer from reduced image quality is blood spatter examinations. One community - the latent fingerprint community - is fortunate enough to have a recommended standard in place for the capture of latent impression evidence - 1000 pixels per inch. Although this standard was designed to meet transmission standards, it has the added benefit of placing a minimum resolution standard for image capture. Using this standard, a photographer who chooses to photograph a latent print with a typical 3-Megapixel camera (2000 x 1500 pixels) will be restricted to photographing an area 2" x 1.5" - an area slightly larger than that covered by a single fingerprint.

10:30am Glucose Formation and the Age of Newspaper
Charles S. Tumosa* & David Erhardt
Smithsonian Center for Materials Research and Education

Cellulose is a polymer of glucose and on reaction with naturally occurring moisture hydrolyzes to yield glucose, and smaller glucose polymers including dimers, trimers etc. Extraction, derivatization and gas chromatographic analysis can easily detect and quantify these compounds. The rate of reaction is a function of temperature, relative humidity, and the type of paper (especially its pH). In newspaper, the acidity of the paper increases the rate of hydrolysis to the extent that measurable changes occur even over relatively short periods of time. Under some circumstances, the environment is constant enough to allow the amount of glucose formed to be correlated to the age of the paper. Specimens from the Washington Post, spanning a range of ages, that had been stored under controlled laboratory conditions were analyzed. The results show a general correlation of glucose formation with age.

11:00am Comparisons of Liquid Gasoline Samples via GC-MS Utilizing an Automated Approach to Data Analysis
Julia Ann Dolan* & Christopher Ritacco - ATF

Research in the late eighties demonstrated that comparisons of gasolines can be conducted, and that the finding of similarities in the compositions of gasolines may be meaningful in determining a potential common origin.ⁱⁱ

The work conducted by Mann however, required substantial data processing by the analyst, and was fairly labor intensive in that aspect. This work utilizes many of the same principles originally presented by

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