

Research in Forensic Chemistry
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This talk describes some of the research in forensic chemistry in the laboratory of Dr. Jay Siegel. It involves what is often called “trace evidence” in forensic science parlance. This research includes the analysis of dye and pigment based inks including the determination of relative age of handwritten documents by following the degradation of certain dyes. Another area of interest has been in the characterization of dyes used in commercial and consumer hair dye products. A third area is a multi-instrumental approach to the analysis of so-called “clear coats”; the colorless top layer of automotive paint. In the analysis of large groups of samples such as in the hair dye and clear coat research, large amounts of spectra data are generated. It is no longer acceptable (if it ever was) to evaluate this data “by inspection”. Instead, certain chemometric methods of analysis are being increasingly employed to look for trends and groups in data. These include principle component analysis, hierarichal clustering and discriminant analysis.