



CALIFORNIA STATE SCIENCE FAIR 2004 PROJECT SUMMARY

Name(s) Claire A. Totten	Project Number S0528
Project Title FCSI: Fingerprinting the Crime Scene Investigation	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This experiment involves the various ways of fingerprinting, and how they measure up to the most common method of fingerprinting- bi-chromatic powder. The goal in this experiment is to determine if the bi-chromatic powder will usually work well on all surfaces.</p> <p>Methods/Materials The fingerprinting scale is the control in this experiment. The surfaces that will be tested are a piece of painted wood, a soda can, unfinished wood, computer paper, a piece of plastic, and a glass bottle. These surfaces will be tested with your traditional bi-chromatic powder, white powder, magnetic powder, fluorescent powder, super glue with glue fuming process, a dye stain process, and a Ninhydrin solution. The various methods of fingerprinting will be performed on the various surfaces, and then the resulting fingerprints will be examined and matched to the fingerprinting scale.</p> <p>Results The results of experiment very closely proved the hypothesis. The bi-chromatic powder proved to actually obtain a 5 or above on all the surfaces except the unfinished wood. The 4 powders tested faired quite well in the experiment, usually producing a 3 or above on the scale. All of the other methods of fingerprinting proved to work best on specific surfaces;the super glue with glue fuming, dye stain process, and the Ninhydrin solution.</p> <p>Conclusions/Discussion In this experiment; the hypothesis was very closely proved through the analysis of data. Yet, these answers happened for a reason. All the powders worked fairly well, because they are attracted to the moisture within the print. The bi-chromatic black is basic, therefore working well on most materials. The white powder will work best on a dark surface or on a clear surface. The Fluorescent powder is best to use on electronic items or things that we do not want to be ruined, such as expensive items- it is only visable with an alternate light source. Finally, the magnetic powder, also works well on almost any surface. The Super Glue and Dye Stain work the best with the painted wood, the soda can, and the plastic because it allows for them to have something to adhere to; yet one has to be willing to destroy the item in order to obtain the print. Finally the Ninhydrin works the best on paper, and most often produces a perfect print; it stains the amino acids that were set onto the paper with the application of the fingerprint.</p>	
Summary Statement This project is about all the different types of methods tested on assorted materials; to conclude which method is most reliable.	
Help Received Sheriff Bob Brooks aided me in contacting the Ventura County Crime Lab; Renee Artmen, head of the crime lab, gave my family and I a tour of the Crime Lab; Debbie Pearson, a skilled fingerprint examiner taught me about fingerprints; And a big thanks to Officer Erik Knepper for spending weeks with me	