

Joseph Campain

*Sticky Fingers: The Effects of Surface Material and Temperature on Fingerprints*

How do surface temperature and material affect the quality of fingerprints lifted? I think the heated metal will allow recovery of the best latent fingerprints when compared to glass, plastic, and Styrofoam at three different temperatures tested. The design of my experiments was: 1) put water (ice-cold, boiling, or room temperature) into containers; 2) grip the container firmly to leave a good fingerprint; 3) drain the water; 4) dry the outside for one hour; and 5) dust for and lift fingerprints. I judged the prints that I got on a scale of one to four, four being the best. I also quantified the excess powder left on the containers as background on a scale of one to four. Four was the best background possible to obtain. Each fingerprint lifted received a composite Fingerprint Quality (FQ) Score between 2-8. From these results I concluded that the cold glass cup allowed recovery of the best latent fingerprints out of all the materials and surfaces I tested. The glass surface in general got the best FQ Scores at all of the temperatures tested. The second best was the plastic cup followed closely by the metal. The metal was very sensitive to temperature changes with the greatest FQ Score at 6.125 for boiling water compared to 4.33 for room temperature. The Styrofoam allowed recovery of only very poor quality prints. These results are important because law enforcement agencies need to know how to optimize their latent fingerprint recovery.