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Forensic anthropometry from fingerprints - A collaboration between chemistry and design

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Fingerprints are widely used for both criminal investigation and personal identification and there is currently a lot of research being undertaken aiming to improve the clarity of detail in fingerprints. However, the research within which this ongoing study is based is focusing on a different aspect of fingerprinting, intending to give a quick and reliable method of identifying the physical characteristics of an individual from a latent fingerprint. This research aims to define the relationship and the significance of any relationship found, between a fingerprint and the stature of the individual who deposited it. To identify how statistically significant the relationship between fingerprint size and physical size is a study involving approximately 200 participants is being performed which builds on previous anthropometric and biometric studies. The ethics approved protocol for the study involves taking anthropometric measurements of height and weight from each participant to a standard convention. Each participant is asked to wash or wipe their hands before arrival and to limit variables further, temperature and humidity in the test area is kept to ambient conditions. The temperature of the skin on each participant's fingertip is also recorded. Using a bespoke finger compliance meter, which is able to apply a fixed force to each participant's fingertip, a photograph of the standardized fingerprint of each participant is collected. The initial post-processed results of this study provide a favorable indication as to the viability of this form of biometric analysis applied in the field of identification.

Biography

Beth McMurchie is in the first year of her PhD at Loughborough University. Her PhD is collaboration between the Department of Chemistry and Loughborough Design School under the supervision of Dr. Paul Kelly and Dr. George Torrens from their respective departments. Before this, she completed her MChem degree in Forensic and Investigative Chemistry at the University of East Anglia.

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