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AN INNOTIVE BIOGENIC FINGERPRINT POWDER DERIVED FROM SEASHELLS FOR LATENT PRINT IDENTIFICATION

Fingerprint identification plays a vital role in forensic investigations, yet traditional fingerprint powders often rely on synthetic chemicals that are costly and environmentally harmful. This pilot study presents an eco-friendly alternative by preparing a fingerprint powder derived from discarded seashells, which are naturally rich in calcium carbonate ($CaCO_3$). The collected shells were cleaned, dried, ground, and processed into a fine powder using simple laboratory methods. The prepared powder was tested on latent fingerprints deposited on non-porous surfaces such as glass, mirrors, glass slides, tempered glass and compact discs. Its effectiveness was evaluated in terms of ridge clarity, contrast, and powder adherence. The results demonstrated that the seashell-based powder successfully developed clear ridge details with good adhesion, highlighting its potential as a sustainable, low-cost material for forensic applications. This study emphasizes the scope of repurposing marine biowaste into a green forensic tool, aligning with environmentally conscious practices and supporting crime scene investigations.

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