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The Application for Using Grain Colloid Reagent and Traditional Methods to Detect the Latent Fingerprint on non-pours Surfaces

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Abstract: ***To distinguish the fingerprints we utilize numerous strategies a portion of these are checked and obviously, the unique finger impression can demonstrate the wrongdoing and perceive the crook, in this paper research we foster another strategy by utilizing GCR colloid fluid, which contains a blend between zinc carbonate and some unique surfactants with crystal violet The GCR it was applied on the non-pours surface, this method it was effective for developing the latent fingerprint on another side we have developed latent fingerprint on the non-pours surfaces by using some chemical materials like black Ferric oxide powder and white powder (Talcum).***
Keywords: Fingerprint, Grain Colloid Reagent, latent fingerprint, fluorescence

I. INTRODUCTION

Fingerprints are contained get-togethers of various turning lines including slants and valleys. These lines are made by features that are called edges (inclines), while the dainty spaces between them are called wrinkles (valleys), furthermore, edges and kinks together design the unique individual of a finger impression (Wilshire, 1996). Latent Fingerprints are invisible prints that cannot be seen with the naked eye and these are found on the porous and non-porous materials found at a crime scene. Grain collides reagent is an advanced suspended solution consisting of zinc carbonate as a base material crystal violet that shows fluorescence when reacting with latent fingerprints and makes them visible. It is an advanced method of using a grain collide reagent to detect latent fingerprints on porous material such as glass surfaces and ceramics. In traditional methods, black and grey powders are used to develop the latent prints for detection. The color of the powder is referred to as based on the color of the surface chosen for detecting these fingerprints as shown in Fig1



A B

Fig1: Grain Colloid Reagent, B Ferric Oxide (Black powder) for development Latent fingerprint

II. MATERIALS AND METHODS

To a suspension of GCR (grain collide reagent) a suspended substance consisting of zinc carbonate as a base material with violet crystal is explained in fig (1). The GCR contains 3.33 g of fundamental zinc) carbonate in 50 ml refined water, 0.006 g crystal violet stain, and 0.2 ml commercial fluid cleanser were added. The substances were completely mixed. The suspension was showered on a superficial level bearing an inactive Impression.

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This surface was drenched in water from zero to 36 h. In the wake of sitting tight briefly, the slide was washed under a delicate stream of water for 30 s and afterward dried with a hair dryer for 40 s. on the other side, we have used 5g of black powder [ferric oxide] was taken in a Petri dish and the powder is sprinkled on the ceramic surface with the feather brush the excess powder is removed by moving the brush in rotational motion and the dusting is carried out till the fingerprints are clear and visible, Finally, the latent fingerprint was developed on white background as shown in fig(2).

A. Grain colloid reagent.

The grain colloid reagent method has demonstrated its worth in identifying fingerprints on wet, smooth surfaces. The special component of the current plan was its fluorescent nature. The fluorescence emerged due to the joining of precious stone violet crystals in the arrangement. Agent fingerprints on slide and steel surfaces are portrayed Consumption reviews to test the legitimacy of the clever creation were done on polythene surfaces. Five Fingerprints encroached on the thing in development. Fig. (2) (A) and (B) show the outcome for the first and fifth impressions, separately. Ideal quality prints were acquired up to the fifth impression.



A B

Fig 2: Fingerprints developed on polythene for the (A) first and (B) fifth impression in succession

In the GCR solution when applied on the non-pours surface for developing latent fingerprint it shows fluorescent light under UV light as shown in fig (3).

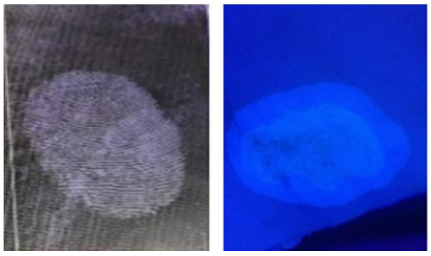


Fig 3: shows a latent impression developed by grain colloid reagent formulation.

B. Black powder [Ferric Oxide]

The latter method resulted in clear prints that appeared on the ceramic surface after using the black powder [ferric oxide] as shown in fig 4. On the first ceramic slide, the finger is clearer while the same fingerprint on the fifth slide shows the progression. Though ceramic is a non-porous substance, the intensity of dusted fingerprints is reduced on the fifth slide as shown in fig.4



A B

Fig 4: A shows a latent impression developed by black powder (ferric oxide), and B is shown after lifting

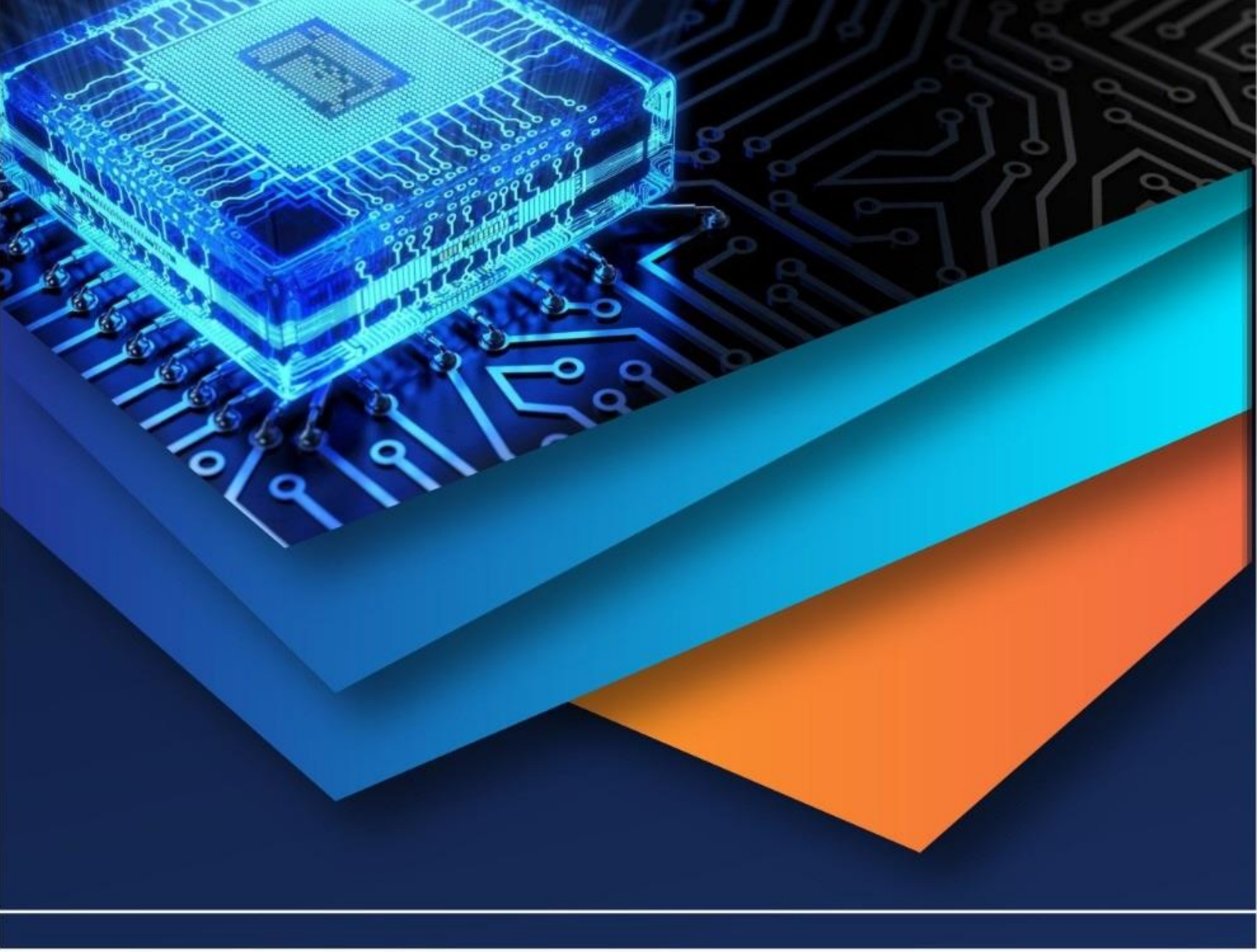
III. CONCLUSION

The advanced method of using Grain Colloid Reagent in the development of latent fingerprints is easy and does not show any hazardous effects on the health of personnel working whereas the latter method of ferric oxide causes irritation in the eyes, skin, and respiratory tract and the fingerprints developed due to grain colloid reagent is more clear and gives fluorescence under UV light so one can observe easily whereas traditional method of ferric oxide requires some effort and fingerprints may also get damaged due to personnel error. The grain colloidal reagent can develop latent fingerprints on wet surfaces while the ferric oxide and other powder methods can only develop on dry surfaces. It can be concluded that the Advanced method is best suggested than the traditional method of using powders in developing fingerprints.

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