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Visualization of Latent Fingerprints at Crime Scene Using Pooja Materials

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ABSTRACT:-

The fingerprint is unique in every human being, human fingerprint impressions are such unique characteristics of human identity that differ from person to a person, also identical twins don't have an identical fingerprint .Chance prints or latent prints may be found on any type of surface and need to be developed by various methods. In criminal investigation cases, chance fingerprint impressions are mostly found at the crime scene. Various methods have been reported for the development of latent fingerprints so many powders have been used for the development of fingerprints such as Rangoli, food Ingredients, food colours, gulal and spinach leaves powder on different surfaces. In this investigation a less expensive, simple and easily available, such as Kumkum and other powders used in pooja, has been used to decipher the latent fingerprints on the different substrates. This paper presents a new powdering method which is simple, non-toxic for the development of latent fingerprints that can be employed on different substrates. The goal of this review is to compile the research works done by various experts to identify commonly available, everyday materials as fingerprint powders. This area provides ample opportunity for researchers to explore the ability of various commonly available, non-toxic and inexpensive, everyday materials to be applied as non-conventional fingerprint powders.

INTRODUCTION:-

Palmer surface of the hands and soles of the feet have frictions ridges. The ridges are the raised portion of the skin between furrows on either sides they are also known as papillary or epidermal ridges. The ridges flow in various directions giving birth to the innumerable patterns. The term fingerprints includes marks of these ridges from any part of the body they have been come. This ridges have small pores, which exude perspiration which is secretion of the eccrine gland in the ridges skin. The permanence of the fingerprints permits identification of a person even after many years, in fact as long as his fingers are not destroyed.

The approach used for the development of latent prints is powder dusting. It is a bodily strategy of enhancement of latent fingerprints and works on the mechanical adherence of the fingerprint powder particles to the oily elements of the pores and skin ridge deposits. Application of powder to the print with the useful resource of brushing is a straight forward and fundamental technique[1]. In order to proceed the ridge characteristics, first-rate care was once taken whilst the utilization of the brush. The powder is sprinkled over a surface the utilization of fibre brush and then greater of powder is eradicated through way of tapping in order to get a clear.A latent fingerprint impression primarily based on the following two kinds of elements which are related with the donor, so first one is deposition factors which consist of age, sex, local weather condition and temperature etc, and the 2nd aspect is the surface of the deposition of the fingerprint impressions pattern that includes the porous, non-porous, semi-porous surfaces that willingly takes up the finger ridges print. Here, we have proposed a new powder method which is a one-of-a-kind application comparing to the prevailing powder methods[2–5]. The fingerprints as evidence are necessary because to personal individual characteristics of the fingerprints, which is unique, permanent, universal, inimitable and classable. The above point out traits show the special fingerprint impression in each and every human being as nicely as in identical twins[6–7].

Fingerprints have been diagnosed as the most dependable evidence for personnel identification. Advancements in the physical, chemical and optical strategies have led to the emergence of a plethora of fingerprint improvement methods[8]. The desire of improvement technique is governed via the composition of the finger mark residue, floor and the environmental condition the mark is exposed to, prior to the treatment, as verified by means of the notion of the triangle of interaction[9]. Despite the developments and strategies available, the latent print restoration remains a challenging task. This is due to the fact the wrongdoer often attempts to wreck the fingerprint bearing imperative evidences or the print may get deteriorated due to the detrimental environmental conditions. Various unfavourable stipulations such as arson, explosion, publicity to drainage water and soil or snow burial are frequently observed at crime scenes. The fingerprint proof subjected to such detrimental stipulations is generally omitted due to the false impression of not possible recovery[10].

In this study, non-conventional powders are used for the development of fingerprints which are generally found in every Pooja items namely saffron,sandalwood,white abir,Pink abir, Ashtagandha powder etc. This technique is simpler in contrast to different powder methods. This powder is without problems accessible in the market, when a crime is committed and this state of affairs investigation crew does no longer have a powder to advance fingerprints, then this powder will play a accurate function in creating latent fingerprints which are less costly or cheapest.

MATERIALS AND METHOD:-

For development of latent print here the powders used are sandalwood, white abir, kumkuma, ashtagandha and ash. These powders are used by Indians while worshipping to god for their pooja. These are easily available in the market and are very cheap. For developing prints first remove the powders in any dish. The fine particlesof the powder was spread over the questioned surface and the excess powders was removed by brush or by tapping it. These process of developing latent prints should be done gently without using pressure otherwise the prints could get destroyed. The powders are easily accessible with cheapest rate in the market.

Fig1. Latent print developed using ashtagandha.

Fig 2. Latent print developed using ash.

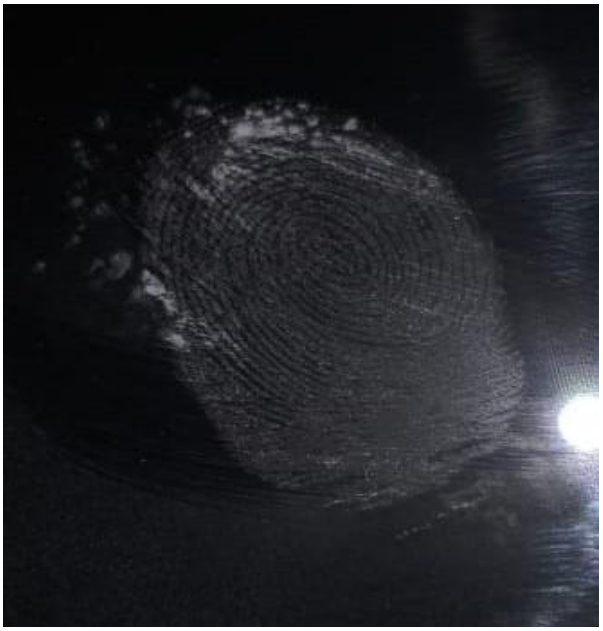

Fig 3. Latent prints developed using white abir.

Fig 4. Latent prints developed using kumkum.

Fig 5. Latent prints development using sandalwood.

RESULT AND DISCUSSION:-

The result of the latent fingerprints developed using Pooja items powders on different surfaces are shown in (fig). The results as shown in figures are obtained when powder dusting method has been applied on different surfacesusing non conventional powders fingerprint have been developed using Pooja items on the surface.The figures show the comparative evaluation of latent fingerprints development with various colors on surfaces.Thus, powders are an excellent medium to develop the fingerprints latent and invisible fingerprints on surfaces and the powders of all shades and different types have been used that's why all the Pooja powder are used base on the different surfaces such as for white surfaces we can dark colour powders and black surfaces we can be used light colour powders, then the result show excellent in nature. The latent fingerprints impressions or invisible fingerprint impressions identified and proper examination is positively done using Pooja items as shown above in the figures.

CONCLUSION:- In this research paper we have used different types of Pooja powders and ash for the development of the fingerprints impressions which is easy to develop and are available easily in the house which is non toxic in nature. It is concluded that these unconventional powders such as Pooja items which are used to develop latent fingerprints are easily available at a low cost and are found in every Indian house. If any crime have been take place and investigating officers have reached the scene of crime and they do don't have fingerprint development kit then they can use household items for the development of the fingerprints. This unconventional powders are easily available and are non toxic in nature as compared to conventional powders and are easy to use.

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