

## Detection of Latent Fingerprints Recovered from Arson Simulation by a Novel Fluorescent Method

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**Abstract :** Fingerprints are area source of ubiquitous evidence and consequential for establishing identity. The detection and subsequent development of fingerprints are thus inevitable in criminal investigations. This becomes a difficult task in the case of certain extreme conditions like fire. A fire scene may be accidental or arson. The evidence subjected to fire is generally overlooked as there is a misconception that they are damaged. There are several scientific approaches to determine whether the fire was deliberate or not. In such as scenario, fingerprints may be most critical to link the perpetrator to the crime. The reason for this may be the destructive nature of fire. Fingerprints subjected to fire are exposed to high temperatures, soot deposition, electromagnetic radiation, and subsequent water force. It is believed that these phenomena damage the fingerprint. A novel fluorescent and a pre existing small particle reagent were investigated for the same. Zinc carbonates based fluorescent small particle reagent was capable of developing latent fingerprints exposed to a maximum temperature of 800°C. Fluorescent SPR may prove very useful in such cases. Fluorescent SPR reagent based on zinc carbonate is a potential method for developing fingerprints from arson sites. The method is cost effective and non hazardous. This formulation is suitable for developing fingerprints exposed to fire/ arson.

**Keywords :** fingerprint, small particle reagent (SPR), arson, novel fluorescent

**Conference Title :** ICFS 2015 : International Conference on Forensic Sciences

**Conference Location :** Paris, France

**Conference Dates :** August 27-28, 2015