POLICE ACADEMY IN SZCZYTNO

CENTRAL FORENSIC LABORATORY OF THE POLICE

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The National Centre for Research and Development

IT forensic unit supporting the development of latent prints on „difficult" porous and non-porous surfaces

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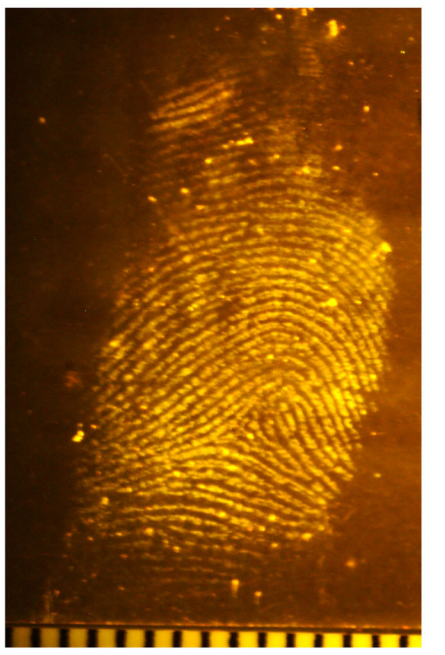
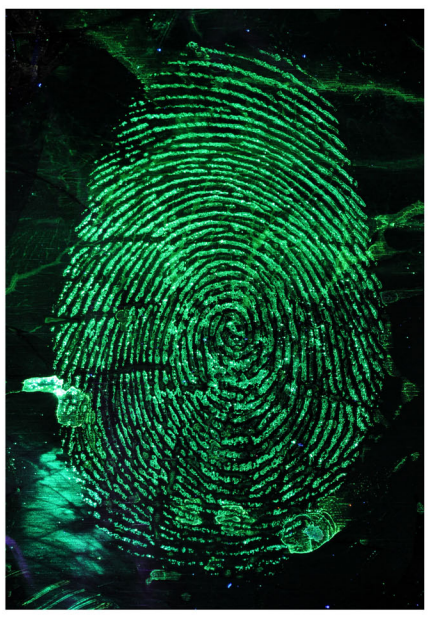


Latent fingerprints are considered to be valuable evidence, thanks to which law enforcement agencies can link given person to a given crime. The fingerprints are used to identify people and human corpses, they are also registered in Automated Fingerprint Identification System (AFIS). Latent fingerprints can be developed applying physical, chemical, physicochemical or biological methods. The choice of a given method is determined by the type and characteristics of the print, the surface of its deposition and the conditions of the development. The increase in criminal activities, the intensification of terror acts and the types of used tools and surfaces, stand for the need to develop further one of fingerprint examinations areas i.e. visualization of latent finger marks.

The IT unit serves as a compendium of practical forensic knowledge in the field of development of finger marks on "difficult" porous and non-porous surfaces. The developed technology will be dedicated to law enforcement agencies as well as other forces involved in crime scene investigation.



Planned scientific areas:

1. **Creation of a catalogue of difficult porous and non-porous surfaces, which can be found on crime scenes.**
2. **Creation of a catalogue of optimal – for given surfaces – methods of latent fingerprints development, taking into account the age traces and the influence of selected methods on the possibility of identification of other forensic traces, especially biological ones.**
3. **Designing of IT infrastructure of the forensic unit.**
4. **Development of software containing comprehensive information dedicated to the participants of criminal procedure.**
5. **Validation of the developed unit based on the representative sample.**
6. **Application of the created technology to the conditions it was designed for.**

Expected results of the research stages:

1. **The concept of cataloguing the surfaces found on crime scenes.**
   The idea is based on strictly determined physical characteristics of surfaces allowing for making an objective list of surfaces, having, by the choice of a proper method, an influence on further proceeding.
2. **Methodology of developing latent fingerprints.**
   Standardization of latent fingerprints development methods allowing for the choice of the most suitable sequence of methods and the determination of their influence of the possibility of obtaining DNA profiles.
3. **Project of the unit and its main components.**
   The development of the unit and its functionalities.
4. **Functional physical system constituting the forensic unit.**
   Integration of information included in the catalogues of surfaces and optimized methodology of developing latent fingerprints deposited on various surfaces.
5. **Demonstration of forensic unit reflecting the planned functionalities.**
   The development of forensic module demo in the form of an integrated system and its testing in simulated conditions.
6. **Forensic unit prototype based on the demo tests.**
   Modification of forensic module prototype, taking into account verified functionality in simulated conditions and its validation in operational conditions.
7. **Forensic unit prototype after maintenance testing.**
   The use of the developed prototype of forensic unit in real conditions.

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