DCS5® APPLICATIONS
Imaging fingerprints on sticky tapes

Application Note
ISSUE 1
May 2017
Fingerprints on Adhesive Tapes

Difficult to handle and manipulate whilst wearing gloves, sticky adhesive tapes can prove to be a ready source of fingerprints for the crime scene examiner. However, while a section of tape used to bind a victim or wrap a contraband parcel may contain a great many prints, revealing and photographing these marks can often prove to be a difficult task.

Improving upon existing techniques

In many fingerprint laboratories, a specialist adhesive-side reagent is used to develop fingerprints on the sticky side of tape while cyanoacrylate fuming, in combination with a fluorescent dye, is the preferred method of developing prints on the non-sticky side.

In this proof-of-concept study, it is demonstrated that Longwave Reflected-UV examination may effectively eliminate half of the existing process by revealing extremely high quality fingerprints on the sticky side of cyanoacrylate fumed tapes, with no further treatment being required.

DCS 5 Required Hardware

In order to accommodate the differing requirements of fingerprint laboratories worldwide, DCS 5 is a modular system that can be expanded through the addition of application specific modules.

In order to perform the applications on the following pages, the DCS 5 Core imaging system must be equipped with the additional Reflected UV Imaging module.

DCS 5 Core

A turnkey system operated via a Windows PC, the DCS 5 Core Imaging System includes all components required to image and enhance fingerprints in the visible spectrum.

System Essentials
Pro-grade copy stand
Desktop PC & 32" 4K monitor
Photographic Accessories

Imaging
Nikon D5 DSLR camera
Infrared Imaging Filters

Illumination
FLS Bandpass Filtered Light Source
Halogen Light Source
Fibre Optic Light Guides

+ Reflected UV Imaging

Additional camera lens, light source and filters essential for Reflected-UV imaging.

UV Light Source
Powerful directional 365nm UV light source.

60mm UV Transmitting Lens
This quartz/fluorite lens, is essential for Reflected UV Imaging but also provides excellent results in the Vis and IR.

UV Imaging Filter Set
330-385nm bandpass filter
Longwave Reflected-UV

UV radiation (wavelengths of light shorter than 400nm) is invisible to the naked eye. However, by equipping the DCS-5 camera with the 60mm UV Transmitting Quartz Lens and 330-385nm bandpass filter, it is possible to record the Longwave UV radiation that is reflected back from the subject to reveal impressive results from previously difficult subjects.

A Versatile Solution...

For many years reflected UV imaging remained underappreciated and largely ignored by fingerprint examiners. However, recent studies into Longwave R-UV have revealed the technique to be a powerful and versatile tool, capable of revealing high quality fingerprints on a wide range of subjects without the need for time-consuming and messy chemical treatments.

Recognised for innovation in the field of latent fingerprints, our product range includes advanced systems for the development of fingerprints using traditional time honoured methods alongside new and novel techniques developed exclusively by foster+freeman.

Recent peer-reviewed papers include:

- Seeing into the infrared: A novel IR fluorescent fingerprint powder (2015)
- NIR-NIR fluorescence: A new genre of fingermark visualisation techniques (2016)
- Sunlight-activated near-infrared phosphorescence as a viable means of latent fingermark visualisation (2017)
- Fingermark visualisation on uncirculated £5 (Bank of England) polymer notes (2017)
- The use of infrared fluorescent reagents for the enhancement of latent fingermarks from notoriously troublesome backgrounds (2017)
Longwave Reflected UV examination of fingerprints on a selection of cyanoacrylate fumed sticky tapes.