



SCANOVIS GmbH, An der Königsbach 8, 56075 Koblenz

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News Release

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Non-invasive Fingerprint Visualization at Work German Startup Builds Spectroscopic Infrared Laser Scanner

Since the [1970s, forensic scientists](#) have looked for possibilities to make latent fingerprints visible without contacting the traces. Today, latent fingerprints must normally be treated with adhesives or other chemicals to be visualized. Still in 2017, the American Society of Crime Laboratory Directors deemed it a [priority to develop](#) such a technique.

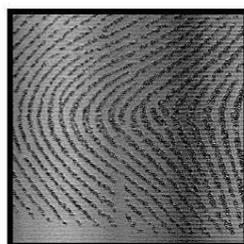
Accurate Scans

The German startup company [Scanovis](#) has just developed a prototype of an infrared (IR) laser scanner that can make latent fingerprints visible based on spectroscopy. The reflected IR light intensity is lower on locations with finger fat than on trace-free areas. The reflections of the laser are analyzed by a photodiode and the collected signals are used to compute an image of the trace.

The prototype works on non-absorbing and even surfaces. The images' spatial solution is 30 micrometers.



metal



plastic



glas



mirror

It produces scans in less than a minute, as can be seen in this [film](#).

The current methods are susceptible to human error and damage. The most commonly used method involves brushing the traces with powders, which may lead to “wipers” on the trace. Another mishandling risk lies in transferring the trace from the object to a trace card with the help of adhesive foil. Other current methods involve applying chemicals like ninhydrin or cyanoacrylate on the print. This can compromise the quality of the traces of DNA, blood or of regulated substances found in the prints.



IR Laser Fingerprint Scanner, Prototype

Non-invasive is Better

“Our technology leaves the trace unchanged”, says Jürgen Marx, Scanovis’ CEO. “All information in the fingerprint is preserved. The laser scanner images are much more accurate than the current analogous images. Improved accuracy might allow us one day to use more fragmented and overlapping prints that would be considered indeterminate with today’s methods. It might even help determining the age of a fingerprint, thus the time at which a suspect was at the crime scene. This is particularly important with suspects who are usually allowed to be at the place where the crime takes place. Also, the laser scanner produces digitally usable images quicker than today’s chemical treatments. Think of a kidnapping case. Minutes can be decisive”, says the master electrician, who has worked on the problem since 2007.

More Efficiency and Workplace Safety

Authorities would likely be interested in this technology because speed may help to reduce the backlog in many criminal laboratories. Unions may also like the system because some of the currently used chemicals are unhealthy.

Industrial Partner Found

Scanovis has just teamed up with the German original equipment manufacturer [Askion](#) to develop a serial laboratory scanner. Using Marx' patents the startup and the experienced developer of opto-electronic devices want the serial model to be able to scan curved objects as well as those with rougher surfaces. The serial device shall also be able to scan larger objects than the prototype. The company is looking for partners, in particular criminal laboratories, in order to test its technology.

Looking for Research Partners and Investors

The startup is also looking for investors in order to finance the development of a mobile scanner. "With such a scanner, traces do not have to be transported from the crime scene to the crime lab. Prints could be visualized at the crime scene and be compared with fingerprint databases at once", argues Marx. Given the importance of speed for fighting crimes, Marx believes such a device will be the next market standard for fingerprint detection.

MedTech and Measurement Technology

He believes that his technology has plenty of potential in medical engineering and measurement technology. "An infrared laser scanner can determine the exact location of almost any substance on most surfaces. For example, there is currently no quick way to determine if an operating room is really clean. We can change that", says Marx.

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