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## Science News

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### New Method Developed to Capture Fingerprints on Difficult Surfaces

*ScienceDaily* (May 11, 2010) — CSI notwithstanding, forensics experts cannot always retrieve fingerprints from objects, but a conformal coating process developed by Penn State professors can reveal hard-to-develop fingerprints on nonporous surfaces without altering the chemistry of the print.

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"As prints dry or age, the common techniques used to develop latent fingerprints, such as dusting or cyanoacrylate -- SuperGlue -- fuming often fail," said Robert Shaler, professor of biochemistry and molecular biology and director of Penn State's forensic sciences program.

This happens because most of the techniques currently used for developing fingerprints rely on the chemistry of the print. Fingerprints are made up of a mixture of secretions from the body that reacts with different chemicals to form a visible or fluorescent product.

Infrared and x-ray imaging also target specific chemicals left behind by the ridges and valleys in the skin.

"Lots and lots of processes take advantage of the chemistry of fingerprints," said Shaler. "This approach looks at the geometry of the fingerprints."

The conformal coating applications suggested by Shaler and Ahklesh Lakhtakia, Charles Godfrey Binder Professor in engineering science and mechanics, use the physical properties of the fingerprint, not the chemistry of the substances left behind. In fact, the researchers believe that even after the fingerprints are developed using the coating, forensics experts could sample the fingerprint material to determine specifics about the person who left the prints.



*Researchers have developed a new method that can reveal hard-to-develop fingerprints on nonporous surfaces without altering the chemistry of the print. (Credit: iStockphoto/Ryan Lane)*

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