



# Scire Science Newsletter

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## **Glowing fingerprints**

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A new treatment creates glow in the dark finger prints that will make crime scene investigation faster and easier. The new technique developed by an Australian scientist makes finger prints glow bright green in UV light. By adding a liquid that containing metal organic frame work crystals [MOF] that applied to nonporous surfaces revealing glowing green finger prints that appear under black light in less than 30 seconds. Finger prints developed with the glowing nanoparticles showed more defined ridges than ones dusted with conventional black powder. The colours of the glow also be changed by altering the chemical makeup of the solution.

The tiny metal organic frame work crystals rapidly bind to finger print residue including proteins, peptides, fatty acids and salts create an ultrathin coating as an exact replica of the pattern of the finger print. This can then be easily and clearly photographed for analysis. Because it works at a molecular level it is very precise and lowers the risk of damaging the print.

The researchers synthesised  $Zn_2GeO_4$  nanorods containing 1.0% gallium and 0.5% manganese that were similar to other persistently luminescent nanoparticles they have used for biomedical imaging .The chemically modified nanoparticle surface with activated esters that could covalently bond to amino acids in the ridges of finger prints.

Metal organic frame work [MOF] crystals have a number of benefits as they are cheap, react quickly and can emit a bright light. The technique does not create any dust or fumes and risk of inhalation. The method could have other valuable applications including biomedical devices and drug delivery.

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## **References**

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