

SCIENCE INNOVATIVE EYEGLASSES

Forensic detectives get a new look

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Invisible traces of bodily fluids left behind at crime scenes can now be easily detected, thanks to nanocrystal eyeglasses developed by a group of Thai scientists.

The eyeglasses will enable forensic teams to clearly see fluids such as blood, saliva, lymph and sperm, which are vital clues in helping the authorities track down crime perpetrators, said Jiti Nukaew, director of King Mongkut's Institute of Technology Ladkrabang's (KMITL) nanotechnology research centre.

To create the special eyeglasses, scientists applied nano crystallised indium oxynitride to glass or plastic lenses to create special lenses capable of filtering varying wavelengths of light.

"This is a very special technique. The nano crystallised indium oxynitride has outstanding characteristics for filtering

varying wavelengths of light between 450-630 nanometres (nm). It means that all the invisible evidence that can be detected through those wavelengths can be seen at once through the nanocrystal eyeglasses," said Mr Jiti.

At the moment, forensic teams use a special tool called a forensic light source, which has a similar function to the nanocrystal eyeglasses — to detect different kinds of evidence that cannot be seen with the naked eye.

It is a lengthy procedure since the process must be conducted multiple times with each different wavelength of projected light and glass appropriate for each type of fluid, said Pol Lt-Col Somchai Chalermsoonksant, chief of the Central Institute of Forensic Science's (CIFS) crime scene unit.

For example, blue light with a wavelength of 450 nm is needed to detect

blood and sperm, while green light at 520 nm and red light at 630 nm will help detectives see saliva and fingerprints.

"Now we can just wear one pair of Thai-made nanoglasses and do everything in one step," said Pol Lt-Col Somchai.

Teerachai Pornsinsirak, deputy director of the Nanotechnology Centre (Nanotec), the state's research arm on nanotechnology, said the special eyeglasses were a byproduct of his agency and the KMITL's joint research into nanocrystal technology.

The Nanotec had applied for the patent for the nanocrystal eyeglasses production process in the United States and was planning to commercialise the products, he said.

But further development of the special eyeglasses would be conducted to make it best serve forensic work, he said.

เอกสารนี้เป็นเอกสารที่สงวนไว้สำหรับการใช้งานเพื่อการศึกษาเท่านั้น ไม่อนุญาตให้นำไปใช้ประโยชน์ด้านการค้า
ไม่ว่ากรณีใดๆ ทั้งสิ้น อีกทั้งห้ามมิให้ตัดแปลงเนื้อหา และต้องอ้างอิงถึงเจ้าของเอกสารทุกครั้งที่มีการนำไปใช้