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MIMOS unwraps non-invasive glucose monitor

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World's first clinically-tested non-invasive glucometer, with ethical approval.

Malaysia's national applied research and development agency, MIMOS, has announced a major breakthrough in medical device technology with the unveiling of a non-invasive, non-intrusive and non-destructive device for blood glucose screening. The device applies chemometrics methods to analyze the near-infrared (NIRS) obtained in absorbance mode through the user's thumb spectra.

Called GlucoSenz, the device is the world's first clinically-tested non-invasive blood screening prototype. It works by using photonics, electronics and software technologies to detect, analyse and predict blood glucose level from the blood capillaries of the human thumb without piercing the skin.

To use the device, the thumb is placed on the thumb module, where light will be projected. The reflected light is then collected by a fibre-optic probe that guides the light to a detector. The light spectrum is then analysed by a built-in software module. The blood glucose level result in mmol/l then appears on the LCD display.

The device is a result of a seven-year research and development by MIMOS' photonics technology laboratory. Ethical approval for the device was obtained from the Malaysia Medical Device Association; Universiti Putra Malaysia (UPM)'s Faculty of Veterinary Medicine, Cyberjaya University College of Medical Science (CUCMS) and the UKM Medical Centre (HUKM).