



# GlucoSenz

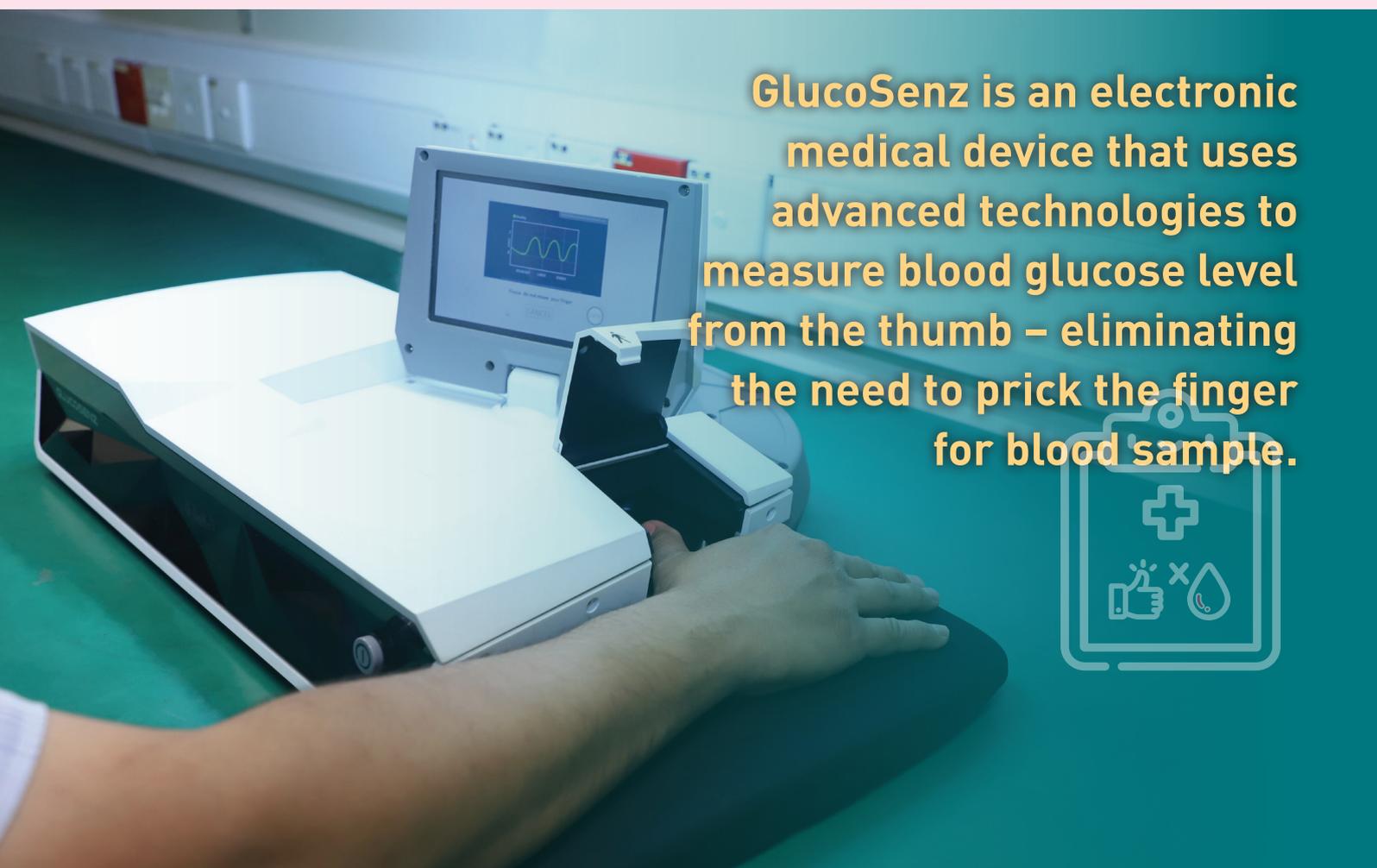
- ◆ **GlucoSenz** measures blood glucose level direct from the skin of your thumb – without the need to draw a blood sample.

## MIMOS in Healthcare

MIMOS is Malaysia's national applied research and development centre that focuses on generating technology solutions that enable the government to provide better services. In the field of healthcare and medical technologies, MIMOS develops need-based, consumer-centric solutions that have supported the consistent and quality delivery of medical and healthcare services.

Ongoing and successful projects include applications for the Ministry of Health; namely the Teleprimary Care - Oral Health Clinical Information System, the Malaysian Health Data Warehouse, Medical Treatment Information System, Patient Registry Information System, and Food Safety System of Malaysia.

Backed by strong capabilities in Artificial Intelligence, Data Analytics and Integration; along with other cutting-edge technologies such as photonics, smart sensors and Internet of Things, MIMOS is committed to driving continuous improvement in healthcare for Malaysia.



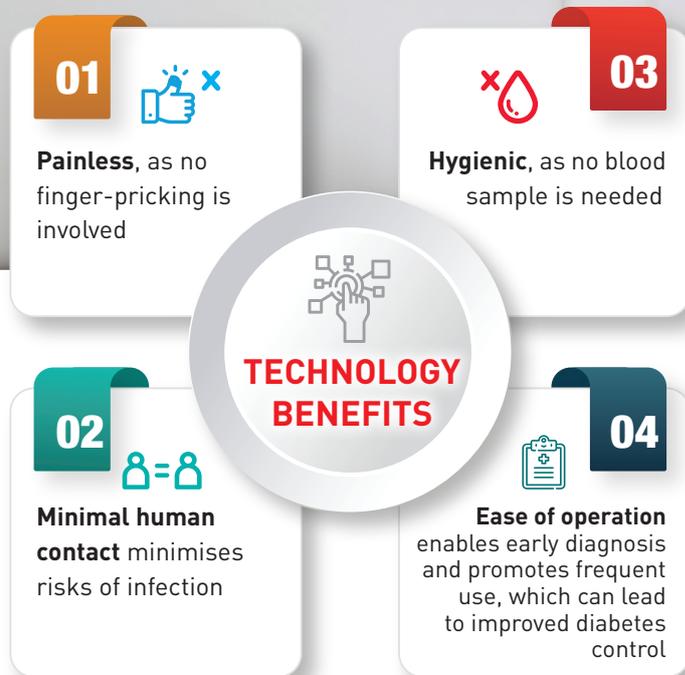
**GlucoSenz is an electronic medical device that uses advanced technologies to measure blood glucose level from the thumb – eliminating the need to prick the finger for blood sample.**





## VALUE

Pre-diabetic and diabetic patients may need to monitor their blood glucose on a daily basis. For healthcare providers as well as for home users, GlucoSenz provides a monitoring method that is economical in the long run as it reduces or even eliminates the need for consumable medical supplies such as lancets, test strips and alcohol swabs. For the medical devices business, GlucoSenz can emerge as a new market segment.



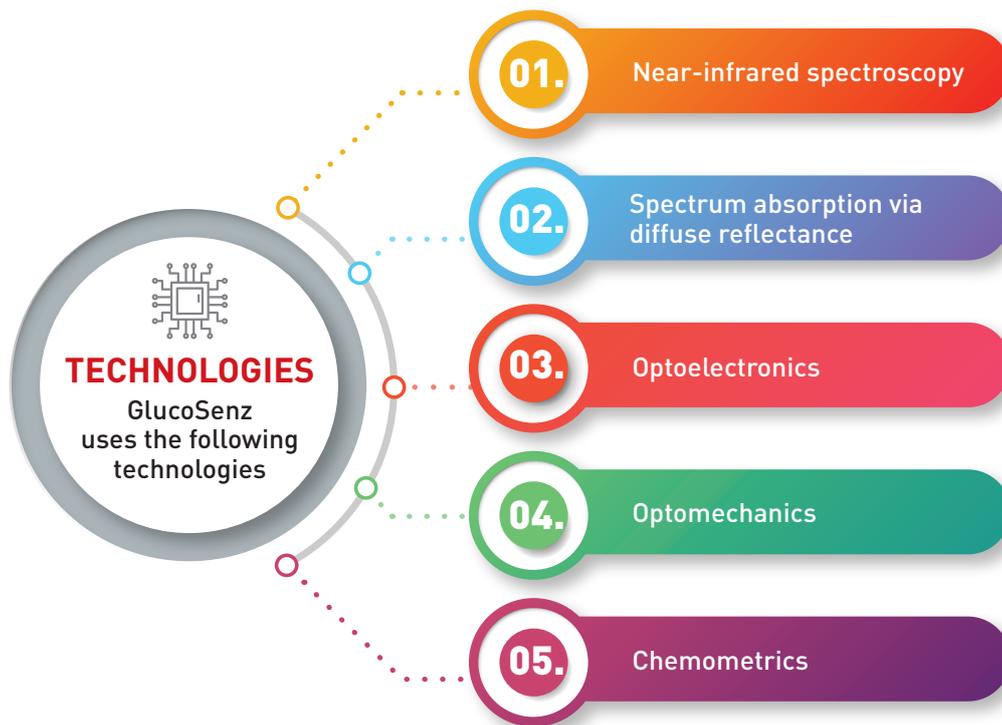
## FEATURES

- 01. Non-invasive** no needles are used as no blood sample is needed
- 02. Non-intrusive** minimum human contact or intrusion of comfort
- 03. Non-destructive** samples are reusable for re-evaluation without causing damage or altering them
- 04. No need for reagent** all processes are purely in-situ

## FUTURE PLAN

A three-year roadmap for GlucoSenz will include adding more parameters such as hemoglobin count and creatinine by 2021, and to miniaturise the device size to Spectro Nano (2021 to 2022) with possibility of blood parameters in the area of endocrine, and Spectro Pico (2022 to 2023) with multi-parameters.





### System Requirement

Parameter	Specification
Measurement range	4mmol/l - 25 mmol/l (target)
Average accuracy	80% (4.44mmol/l to 11.10mmol/l)
Operating temperature (Indoor)	20°C - 30°C
Operating ambient humidity	60% - 90%
Operating power	AC 230V ± 6%
Storage temperature	10°C - 40°C





## INTELLECTUAL PROPERTY

1. PI 2016000841 / 20150001747 - Automated Chemometrics Process for Identifying Component in Liquid Sample
2. PI 2015704087 / 20150001764 - Metallic repercuss apparatus and method for non-invasive biological subject
3. 20150001801 - Blood Glucose Sensor Device
4. Filing - Method and system of glucose spectral processing unit for accuracy improvement in glucose measurement (co-own with OSA Technology Sdn Bhd)



## PUBLICATIONS

1. Pre-Clinical and Clinical Evaluation of Self-Developed non-invasive glucose screening device on human, 10th International Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2017)
2. An assessment study of absorption effect: LED vs tungsten halogen lamp for noninvasive glucose detection, Journal of Innovative Optical Health Sciences, Volume 08, Issue 02, March 2015 ( J. Innov. Opt. Health Sci. 08, 1550013 (2015)
3. Regression Analysis on In-Vitro Rats Induced Blood Glucose Level Detection Towards Non-Invasive Diabetes Monitoring on Human via Near Infrared Spectroscopy, 2016 IEEE Conference
4. Design of Fourier Transform Infrared Optical Sensor with manufacturing tolerance on interferometer arms for application on non-invasive hypoglycemia and hyperglycemia detection, 2012 IEEE-EMBS Conference on Biomedical Engineering and Sciences
5. Glucose Level Determination using Diffuse Reflectance Near Infrared Spectroscopy and Chemometrics Analysis based on In Vitro Sample and Human Skin, 2014 IEEE Conference on Systems, Process and Control (ICSPC 2014)
6. Design and Analysis on Interferogram Performance based on Two Different Light Source Scheme Using Mach Zehnder Inteferometer for Blood Glucose Detection, 2014 IEEE Conference

