MIMOS Non-Invasive Glucose Sensor (Mi-Glucosenz)

Diabetes mellitus (DM) is one of the major public health concerns in Malaysia and closely related to complication of heart disease, stroke, endstage renal failure, blindness and amputation. Mi-Glucosenz is a medical screening device that measures blood glucose levels without the need to prick a finger. Using the concept of non-invasive technique, Mi-Glucosenz offers a pain-free and easy method for a patient to monitor blood glucose levels.

Overview

Mi-Glucosenz is a non-invasive blood glucose sensor. Glucosenz uses infrared technology to measure the amount of glucose in blood. The current system is for indoor use. Mi-Glucosenz is used for blood glucose level screening ranging from normal to hyperglycemia. Measurement of glucose is via the human thumb without any needle pricking.

Features

Mi-Glucosenz comprises the following features:

- **Non-Invasive**
  No withdrawal of blood sample required.
- **Pain-Free Monitoring**
  Pain-free patient monitoring with minimum risk of infection.
- **Non-Destructive**
  Evaluate properties of samples without altering or causing any damage. It is reusable.
- **IoT-Enabled**
  Ready for future integration into healthcare system.

Technology Benefits

The main impacts of Mi-Glucosenz are:

- **Painless**
  Patient will be pain-free before and after using Mi-Glucosenz.
- **No pricking of skin**
  No penetration on any part of human skin to measure glucose level.
- **No drawing of blood**
  No blood needed when using Mi-Glucosenz.

Specifications

Parameter	Specification
Measurement Range	4 mmol/l - 25 mmol/l (target)
Accuracy	Target 80%*
Operating Temperature (Indoor)	20 ^{O}C – 30 ^{O}C
Operating Ambient Humidity	60% - 90%
Operating Power	AC 230 V ± 6%
Storage temperature	10 ^{O}C – 40 ^{O}C

Technology Summary

Mi-Glucosenz

A medical device using non-invasive technique and infrared technology to measure blood glucose level.

Industries: Enterprise, Government

Features

- Non-invasive
- Pain-free monitoring
- Non-destructive
- IoT-enabled

Technology Benefits

- Painless
- No pricking of skin
- No drawing of blood

MIMOS Mi-Glucosenz

- **Animal Test & Animal Ethical Approval**

(in collaboration with CUCMS and UPM)
By Jawatankuasa Institut Penggunaan dan Penjagaan Haiwan, UPM (IACUC)

- **Human Testing (Pre-Clinical, Pilot Run and Clinical Test)**

Human Ethical Approval (in collaboration with CUCMS, Health Medic Sdn Bhd & OSA Technology)

Granted approval in June 2015

By Medical Research Ethic Committee (MREC), Malaysia

Ggranted HUKM Ethical approval to conduct related research/human test at HUKM

- **Accreditation lab testing (SIRIM)**

MS IEC 60601-1:2006
CISPR 11 and CISPR 24
CE (Conformité Européene) certification exercise

001-0930A