

Non-invasive Diabetic Breath Analyzer

IPR STATUS

Patent filing in India is under process

APPLICATION/ USES

These sensors can be used in the non-invasive, rapid, painless, point-of-care detection and monitoring of diabetes from exhaled breath exploiting a hand-held, portable electronic nose device at very low cost.

LEVEL/SCALE OF DEVELOPMENT

Proof-of-concept has been developed (lab scale)

LINE MINISTRY MAPPING/USER SECTOR

Department of Health Medical diagnostic devices

SALIENT FEATURES

- Non-invasive, painless diabetes detection and monitoring;
- Appreciable resolution to low concentrations of acetone in breath, the breath biomarker of diabetes: suitable for point-of-care detection.
- Highly sensitive and selective, eliminating false alarm;
- Fast response and recovery, enables rapid testing;
- Reusability for hundreds of tests, ensuring low cost;
- Ceramic-based sensors ensure long-term durability.

(a)

Parameter	Normal	Diabetes	Post diabetes
Exhale acetone	0.3-0.9 ppm	0.9-3.7 ppm	> 3.7
Glucose	< 100 mg/dl	100 to > 126 mg/dl	> 250 mg/dl

(b)



Fig.1. (a) Diabetes breath analysis criteria, and (b) packaged diabetic sensor module.

