

Mobile Exhalation Decoder for Predictive Breath VOC Markers

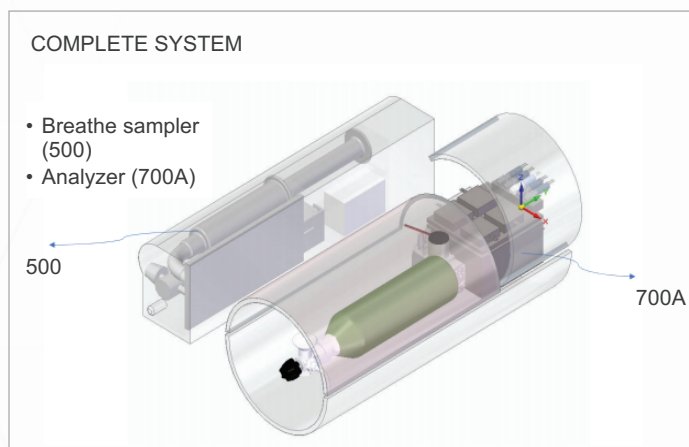
VTIP 20-095: “Personalized Integrated Mobile Exhalation Decoder”

THE CHALLENGE

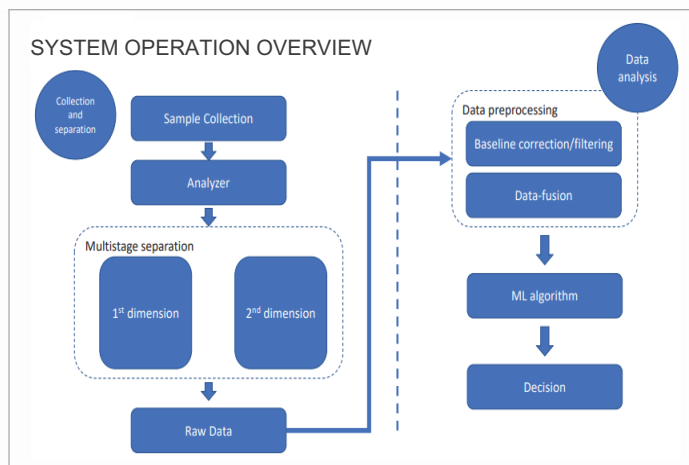
The containments of pandemics like COVID 19 require access to reliable technologies that can be used readily by non-professionals and monitor their health status or the progression of the disease at homes, nursing homes, jails, hospitals, etc. A portable instrument specifically designed for intelligent, targeted, and user-friendly breath analysis to search for the comparatively smaller number of identified VOC biomarkers for each disease as opposed to performing a comprehensive identification of breath volatiles is of paramount significance.

OUR SOLUTION

This invention simplifies breath collection and breath analysis and brings to the point of care. The modular system can be programmed to monitor for a panel of breath biomarkers, can analyze and store the data, and can transmit the information via cloud. The AI-enabled system can be personalized to monitor the breath contents of individuals while also comparing it with the large target populations. The invention provides a new chip-scale method for the analysis of the volatile organic compounds in general and breath VOCs and is meant to replace GC-MS systems. It can also eliminate the breath collection and sample transportation to labs as its entire system is integrated including both breath collection and analyzer.



Schematic diagram of the personalized integrated mobile exhalation decoder.



Schematic diagram of operational process of personalized integrated mobile exhalation decoder.



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