

A portable point-of-care device for multi-parametric diabetes mellitus analysis

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Abstract:
We present a small, compact and portable envisaged lab-on-a-chip (LoC) device for point-of-care (PoC) detection of different key parameters on diabetes mellitus analysis; glucose, cholesterol, triglycerides and hematocrit. These four parameters, present in blood samples, are important in the standardized analysis affecting different patients with different medical conditions. The quantification of glucose, cholesterol, triglycerides and hematocrit it is performed with a single disposable device using a single blood drop, enhancing disposition decision time and improving patient satisfaction when compared with actual analytical methodology, and it is an easy to use device and no skilled personnel is needed to use it, avoiding the use of more complicated processes like phlebotomy. The presented device consists of a custom sensing system, low power electronic instrumentation and an easy user interpretation readout display, powered by a single battery.

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