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DEPARTMENT OF
SCIENCE & TECHNOLOGY
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TECHNOLOGY
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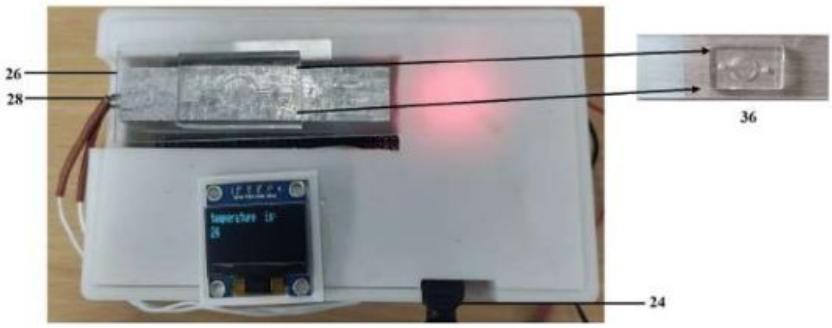
PENDING

(IN202311052214)

An apparatus for biomedical applications with turnkey thermal management integrated with detection system using microfluidics



NEED

In medical diagnostics, accurate temperature control and real-time detection of biochemical substances are crucial for improving testing efficiency. Current systems are often slow and prone to errors in controlling temperature and detection precision.

MARKET ANALYSIS

The global medical device market is growing at a CAGR of 5.6%, projected to reach $600 billion by 2033 (source: Grand View Research, 2023). Key drivers include the demand for advanced diagnostic tools and the shift towards personalized healthcare.

TECHNOLOGY OVERVIEW

The patent introduces a dual-purpose temperature control and detection apparatus that combines precise temperature regulation with biochemical detection. It uses a microcontroller to maintain optimal temperature within a microreactor chamber and detect biochemical substances via photodiode and LED systems.

Target Industries

Medical devices, diagnostics, healthcare technology. , Medical device manufacturers, diagnostic tool developers, health tech startups, research institutions developing diagnostic platforms, and microfluidic technology providers.

TECHNOLOGY KEY FEATURES

Dual-purpose temperature and biochemical detection, microcontroller-based control, temperature regulation using resistive heater, LED-based detection, real-time voltage output for precise detection.

AT A GLANCE

- SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation, and Infrastructure), SDG 12 (Responsible Consumption and Production)

Read more here

Technology is available for licensing/ co-development.

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