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विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY
सत्यमेव जयते

BITS Pilani
TECHNOLOGY
ENABLING
CENTRE
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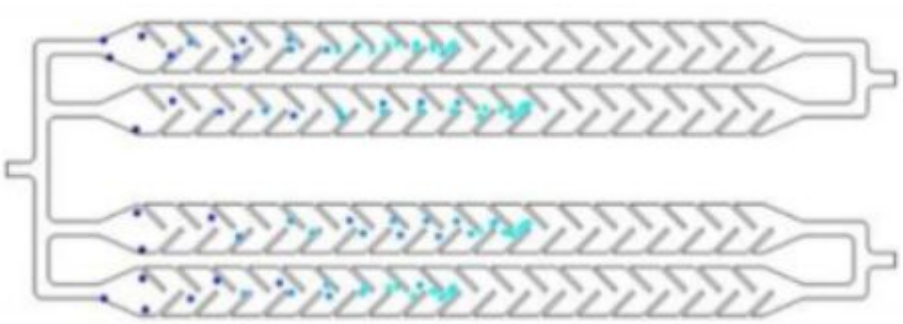
PENDING

(IN202111058598) Continuous-flow microfluidic device for enrichment of CAR-T cells



NEED

Over 80% of conventional biological tests waste reagents and require hours for results. Bulky lab setups and inconsistent fluid flow delay diagnosis. But what if complex analysis fit into your palm and gave faster outputs—without sacrificing accuracy?

TECHNOLOGY OVERVIEW

This patented microfluidic device features a herringbone flow structure within a planar PDMS-glass or silicon substrate. It ensures uniform flow at 0.02–1 m/s with dual inlet-outlet channels. The structured channel design improves fluid mixing, sample efficiency, and test precision—ideal for rapid diagnostics, cell sorting, or reagent screening.

TECHNOLOGY KEY FEATURES

Dual-path flow, 100 µm channel depth, PDMS-glass build, herringbone geometry, planar form, compact and portable. A new device is transforming fluidic control—without disrupting existing testing workflows.

Read more here

MARKET ANALYSIS

India's microfluidics market is projected to grow at 15.8% CAGR till 2033. Globally, the market will exceed $36.2B by 2033. Growth is driven by POC diagnostics, organ-on-chip tech, and personalized medicine. (Sources: Market Data Forecast 2023, Precedence Research 2024)

Target Industries

1) Biotech and diagnostic kit manufacturers focused on high-throughput micro-scale assays 2) R&D labs and device integrators building custom organ-on-chip, pathogen screening, and drug testing platforms 3) Biomedical testing enterprises in clinical and personalized diagnostics for portable field-ready solutions

AT A GLANCE

- SDG 3 (Good Health), SDG 9 (Industry & Innovation), SDG 12 (Responsible Consumption)

Technology is available for licensing/ co-development.

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