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DEPARTMENT OF
SCIENCE & TECHNOLOGY
सत्यमेव जयते

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TECHNOLOGY
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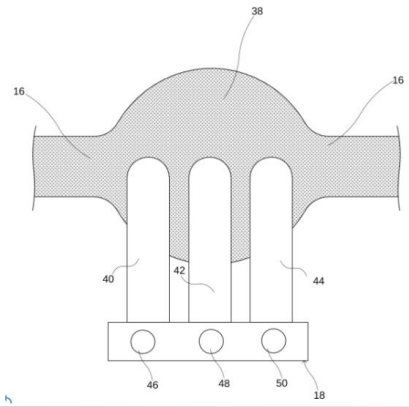
PENDING

(IN202311052103) Improved electro-microfluidic droplet chip



NEED

In many applications, precise control and analysis of droplets in microfluidic systems are crucial for chemical, biological, and environmental analysis. Current systems lack efficient droplet generation and electrochemical sensing integration.

MARKET ANALYSIS

The global microfluidics market is projected to grow at a CAGR of 19.2%, reaching $71 billion by 2033 (source: Research and Markets, 2023). Key drivers include advancements in point-of-care diagnostics and lab-on-a-chip technologies.

TECHNOLOGY OVERVIEW

This electro-microfluidic chip integrates droplet generation and electrochemical sensing in a single system. It uses micro-electrode channels with replaceable liquid metal electrodes to perform detailed droplet analysis, making it ideal for chemical and biological applications.

Target Industries

Chemical analysis, biological research, point-of-care diagnostics. , Microfluidic chip manufacturers, electrochemical sensor developers, biotechnology companies, diagnostic test providers, and research institutions focused on droplet analysis and lab-on-a-chip applications.

TECHNOLOGY KEY FEATURES

Integrated droplet generation, electrochemical sensing, replaceable liquid metal electrodes, 3D-printed design, precise droplet control, adaptable for multiple applications such as sorting and mixing.

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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