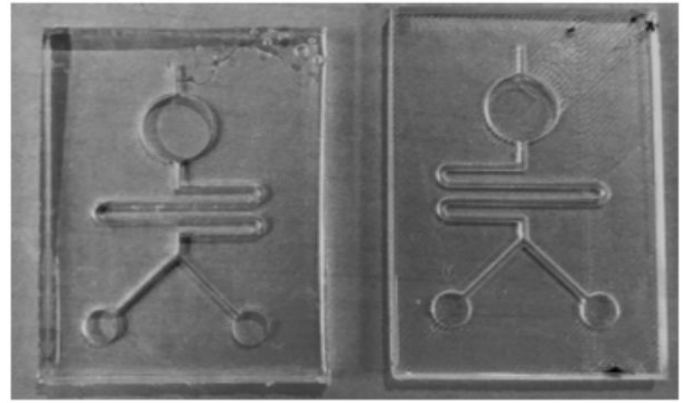


**GRANTED****(IN509212)**

## Microfluidics based integrated system for nitrite and nitrate detection and analysis



### NEED

Identifying nitrites and nitrates in water, soil, and biological samples is crucial for environmental monitoring and health safety. Current testing methods are often complex, slow, or require expensive equipment. A portable, efficient solution is essential.

### TECHNOLOGY OVERVIEW

This portable testing apparatus uses microfluidic technology to identify and analyze nitrites and nitrates in liquid samples. It integrates syringe pumps, a microfluidic chip, and a colorimetric detection system, providing fast and reliable analysis for various samples like water, soil, and biological fluids.

### TECHNOLOGY KEY FEATURES

The apparatus is portable, using syringe pumps for precise fluid injection. It includes a microfluidic chip with an LED-based detection system. The system is simple to use, fast, and does not require complex waveguides or bubble removal systems.

[Read more here](#)

### MARKET ANALYSIS

The microfluidic market is projected to grow at a CAGR of 13.1%, reaching \$36.8B by 2033 (source: MarketsandMarkets). Increasing demand for portable and rapid testing solutions across environmental monitoring and healthcare sectors is a key market driver.

### Target Industries

1) Environmental monitoring agencies, 2) Healthcare providers focused on diagnostic testing, 3) Water and soil testing laboratories seeking affordable, efficient solutions.

### AT A GLANCE

- SDG 6 (Clean Water and Sanitation), SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation, and Infrastructure)

Technology is available for licensing/ co-development.

Reach out to Prof. Deepak Chitkara, Coordinator, BITS Technology Enabling Centre,  
BITS Pilani Contact Details: [tec.bits@pilani.bits-pilani.ac.in](mailto:tec.bits@pilani.bits-pilani.ac.in), 91 1596-255913