Optical Detection of Suspended Micro-Objects Using Array Waveguides

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BACKGROUND

Integrated micro-fluidic chips that perform a variety of functions for chemical analysis and biological screening have found wide applications in the pharmaceutical industry and have accelerated the progress of research in biotechnology. Significant efforts have been made to integrate micro-optical and optoelectronic devices with micro-fluidic systems to provide on-chip fluorescence detection and biochemical sensing.

TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have introduced micro fabricated electrodes into fluidic channels to facilitate optical detection by controlling and manipulating the positions, angles, and populations of analytes in micro-fluidic channels, such as cells and DNA, via a dielectrophoretic effect. The researchers have fabricated, using novel technology, microfluidic-photonic-dielectrophoretic integrated circuits with channel waveguides. This represents a new class of circuits particularly attractive to lab-on-a-chip and biomedical applications. [Aspects of this research have been published; see The 17th Annual Meeting IEEE/LEOS, Technical Digest]

STATE OF DEVELOPMENT

This technology is available for licensing.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,717,569	05/06/2014	2005-162
United States Of America	Issued Patent	8,270,781	09/18/2012	2005-162

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OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Diagnostics

RELATED CASES

2005-162-0

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