

Technology Opportunity Bulletin

A Fiber-loop Ring-down Spectroscopy Detector for HPLC

Description:

Researchers at Queen's University have developed a rugged and inexpensive absorption detector based on a patented fiber-loop ring-down spectroscopy (FLRDS) technology. The ring-down of a pulse of light (from near infrared to UV) in a loop made of fiber-optic waveguide is correlated to changes of analyte concentrations in a sample stream. Coupling with various separation instrumentation (e.g. capillary electrophoresis, micro-HPLC, or microfluidic devices), this detector allows for a fast and sensitive detection of a broad range of organic species, proteins/peptides, and suspended particles in a few nano-liter of sample streams.

Benefits:

- Small detection volumes
- Rapid detection
- High sensitivity
- Low cost
- Fluorescence labeling free

Applications:

This detector can be used essentially wherever a UV detector applies such as in pharmaceutical industry to:

- detect byproducts and contaminants in drugs
- detect thermal degradation products and metabolites of drugs

Potentially, it may also be used for online process or quality monitoring where chemical or physical changes are involved.

Status of Commercialization:

PARTEQ Innovations, the technology transfer arm of Queen's University, has sought patent protections worldwide, and is currently seeking industrial partners willing to collaboratively develop or license the technology.

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