

Why Use a Continuous Flow Spectrometer



Overview

Continuous Flow is a type of assay used to easily measure the progress of a reaction at discrete time points and is commonly used for determining initial rates and inhibition values. In the simplest form of the technique, the solutions of two reactants are rapidly mixed by being forced. Flow chemistry, also known as continuous flow chemistry or continuous processing, begins with two or more streams of different reactants pumped at specific flow rates into a single chamber, tube, or microreactor. A reaction takes place, and the stream containing the resultant compound is collected. A stopped-flow instrument is a rapid kinetics technique used to follow chemical reactions in the milliseconds to seconds timescale. A stopped-flow can only mix liquids, and the complete stopped-flow system includes a detection instrument.



Article Content

Hot

Gas Analysis by Mass Spectrometry

In atile species, where larger molecules must use the category of continuous analysis, specific alternative vaporization-ionization methods. m/z values are monitored (when analytes are Because

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Stopped Flow FAQs

Typically used to gain an understanding of reaction mechanisms, including drug-binding processes or following protein structural changes, stopped-flow

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A Perspective on Continuous Flow Chemistry in the ...

The key advantages of continuous flow include faster and safer reactions, which can be more environmentally friendly, smaller footprint, better quality product, and critically, the ability to perform

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Continuous Flow Technique

Continuous flow processing offers the potential to revolutionize the discovery, scale-up, and manufacturing of drug products. It offers safer handling and metering of hazardous materials, higher

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13.4: Flow Injection Analysis

13.4.1 Theory and Practice Flow injection analysis (FIA) was developed in the mid-1970s as a highly efficient technique for the automated analyses of samples. 17

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2.1.1: Continuous Flow

Continuous Flow is a type of assay used to easily measure the progress of a reaction at discrete time points and is commonly used for determining initial rates and inhibition values.

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Experimental Setup and Standardization of a

We present here the experimental setup and standardization of a newly acquired stable isotope ratio mass-spectrometer (Isoprime 100, Isoprime® UK)

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On-line Monitoring of Continuous Flow Chemical Synthesis Using a ...

The application of a portable mass spectrometer for on-line characterization of flow chemical synthesis has been evaluated by coupling a Microsaic 4000 MiD to the Future Chemistry

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10: Introduction to Spectroscopy

INTRODUCTION Spectroscopy is the study of the interaction between matter and electromagnetic radiation. The types of electromagnetic radiation are often

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What Is Spectral Flow Cytometry and How Does It Work?

Learn how spectral flow cytometry analyzes the full emission spectrum from each cell, enabling a more detailed characterization of complex biological systems.

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Continuous flow isotope ratio mass spectrometer (CF-IRMS) and its ...

Stable isotope ratio mass spectrometers have been widely used to determine the isotopic ratios of light elements such as hydrogen, carbon, nitrogen, oxygen and sulphur. Continuous Flow

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Continuous flow systems for rapid sample screening

As previously stated, continuous flow systems constitute a valuable, but as yet unexploited, alternative in sample-screening systems. The automated devices proposed in the

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Continuous-flow analysis: the Auto-Analyzer

The "continuous flow" refers the flow of liquid term to continually pumped through the system while it is being analysed for particular components. Samples, standards, and reagents are injected...

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Isotope ratio mass spectrometry

While continuous-flow IRMS instruments can achieve higher sample throughput and are more convenient to use than dual inlet instruments, the yielded data is of approximately 10-fold lower

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Why Argon Gas is Used in Spectrometry Role in ICP-MS, AAS, and

In the world of today's analytical chemistry, special methods like Atomic Absorption Spectroscopy (AAS), Inductively Coupled Plasma Mass Spectrometry (ICP-MS), and Optical Emission Spectroscopy

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What are stopped-flows and how do they help chemists

Stopped-Flows are used across a wide range of academic and industrial applications including drug binding processes and protein stability.

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Mass spectrometry in analytical research

Discover the applications of mass flow controllers in mass spectrometry, crucial in analytical research and biopharmaceutical studies.

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Flow Chemistry | Benefits of Continuous Flow Chemistry

Continuous, real-time monitoring allows researchers to track steady-state conditions, quickly troubleshoot process deviations, and identify reactive intermediates.

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Continuous flow mass spectrometer for isotope analysis

If i took thousands of discrete samples of mineral fragments in a field study using a specialized drill, what mass-spectrometry techniques/equipment would allow me to analyse the

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Spectral Flow Cytometry Fundamentals

Spectral flow cytometry fundamentals for education in spectral flow cytometry instrumentation, spectral unmixing, linear unmixing, spectral flow cytometry analysis.

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Continuous flow chemistry for molecular synthesis

Continuous flow techniques have become important tools for molecular synthesis, both in academia and across the fine chemicals industry.

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What Is Fluorescence Spectroscopy? Principles Overview

What is fluorescence spectroscopy? Fluorescence spectroscopy is an analytical method used to examine the fluorescent characteristics of molecular compounds. It involves measuring the light that

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CONTINUOUS SPES FLOW ANALYSIS (CFA-SPES)

This scheme is representative of analytical cases as, e.g., on-line / in-line monitoring of particle contamination during continuous flow processes and for measuring samples injected using an

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Isotope Ratio Mass Spectrometry

Continuous Flow-Isotope Ratio Mass Spectrometry In the CF-IRMS technique, a solid or liquid biological sample is introduced into a high-temperature combustion chamber of an elemental analyzer, where it

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Optimizing Conditions for GC/MS Analyses

Solvent blank – May contain contaminant peaks (for example, phthalates, siloxanes)
Best practice: Use the same bottle of solvent that was used for any dilutions/extractions
Known standard – GC/MS

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Continuous flow isotope ratio mass spectrometer (CF-IRMS) and its ...

Continuous Flow Isotope Ratio Mass Spectrometry (CFIRMS) provides reliable data on nanomole amount of sample gas without the need for cryogenic trapping using cold fingers as in dual

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What are the advantages of Continuous Flow Analysis?

Flow analysis has advantages over manual methods that include smaller sample volume and reagent consumption, greater reproducibility, and higher throughput. Typical continuous flow methods can

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Conventional Flow Cytometry VS. Spectral Flow Cytometry

Novus flow cytometry panel builder tool comparing the spectra view readout of conventional flow cytometry (top) and spectral flow cytometry (bottom).

Oct 28, 2025

Contact Us

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