Broadband Collision-induced Dissociation at Constant q

A highly efficient broadband collision-induced dissociation method enhances mass spectrometry analysis by achieving extensive fragment ion coverage and integrating with existing ion trap mass spectrometers.

Tandem mass spectrometry (MS/MS) is used to characterize ions of selected mass/charge ratios. It is used in instances where the ion serves as a surrogate for the corresponding neutral molecule and the problem is the identification of components of complex mixtures. There are three steps in MS/MS:

1. Isolation of a precursor ion of interest

2. Activation of this ion

3. Mass analysis of the resulting fragment ions

There are a variety of methods used for activation, including collision-induced dissociation (CID). There is a need for more efficient dissociation in MS/MS experiments in an ion trap mass spectrometer with access to full product ion mass range.

Researchers at Purdue University have developed a method of broadband collision-induced dissociation, fragmenting the ion population from high to low m/z (mass to charge ratio). This method is highly efficient, resulting in extensive fragment ion coverage for various complex mixtures. This method achieves more efficient dissociation with access to full product ion mass range. This method uses simpler hardware that can integrate into mass spectrometers that use ion trap analyzers.

Advantages:

-More efficient dissociation

-Access to full product ion mass range

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Category

Biotechnology & Life Sciences/Analytical & Diagnostic Instrumentation
Chemicals & Advanced Materials/Materials Processing & Manufacturing Technologies

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-Integrates into existing mass spectrometers that use ion trap mass analyzers

Potential Applications:

-Mass spectrometry

-Biological research

-Chemical research

-Pharmaceutical research

-Chemical analysis

TRL: 3

Intellectual Property:

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