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Two-dimensional Mass Spectrometry in a Linear Quadrupole Ion Trap using Ion Micropacket Detection

A highly efficient frequency scanning technology for mass spectrometry uses a micropacket technique to achieve higher resolution and faster, more reliable chemical sample analysis.

The frequency tagging 2D MS method is a methodology for operating a mass spectrometer. It provides a rapid way to recognize a sample as belonging to a particular functional group class or containing a component that has particular structural features evident from the product ion spectra. However, low kHz beat frequencies were observed under this method, which reduced mass resolutions. In order to improve the resolution, the beats must be measured for a longer period of time, or a higher frequency must be measured.

Researchers at Purdue University have developed a highly efficient method of gathering data from the 2D MS/MS domain on a single linear quadrupole ion trap using simple frequency scanning technology. This technology helps mass spectrometrists and mass spectrometer users who want to efficiently analyze a chemical sample by mass spectrometry. Their use of a micropacket technique, offers higher resolution, reduced harmonic overlap, and fewer scans to populate the MS/MS domain.

Advantages:

-Highly efficient

-High resolution

-Reduced harmonic overlap

Potential Applications:

-Ion traps

-Miniature instruments

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Category
Materials Science & Nanotechnology/Materials Testing & Characterization Tools
Biotechnology & Life Sciences/Analytical & Diagnostic Instrumentation

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-Multi-analyzer instruments

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