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14829

Patent(s) Issued

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Available Technologies

Enhanced Detection Technology for Mass Spectrometry and Other Analytical Instruments (All the Signal All the Time)

SUMMARY

Charged particle detection is necessary for the identification, monitoring and concentration determination of chemicals, particulates, aerosols and other compounds using mass spectrometry and other similar instruments. In situations where complex mixtures of charged particles are being analyzed, simultaneous observation of many or all ionized species is highly desirable. When this occurs, detection efficiency can be high, inter-signal variation (noise) can be minimized and artifacts associated with scanning (sequential detection) can be eliminated.

The apparatus and method covered by this patent is a “simultaneous” detector that more accurately records abundance of all species at their low, intermediate and high flux levels. The new detector has a dynamic range that is shown to be linear over seven orders of magnitude. It has high resolving power and, as illustrated in the figure, is capable not only of providing significant signal gain across all elements of interest but is also capable of providing selective and independent gains on the elements of highest interest. Dubbed ASAT (All the Signal All the Time) by its inventors, the new technology represents a significant development in a key element of analytical instrumentation that is often overlooked – the detector on which the measurement capabilities of all mass spectrometer and other similar instruments rely.



Patents & Intellectual Property

» Patent #: 7,498,585

Technology Portfolio(s)

» Mass Spectrometry Instrumentation

Potential Industry Applications

» Chemicals

» Computers & Electronics

» Healthcare, Pharma, Biotech & Medical

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