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ACCELERATED MASS SPECTROMETRY

DESCRIPTION

Accelerated Mass Spectrometry (AMS) is a unique form of mass spectrometry in the sense that it accelerates ions to high kinetic energy (MeV) by means of a particle accelerator before the mass analysis. It is a method to "count" atoms within a sample to reconstruct its atomic/isotopic composition. Its main strength is considered to be the ability to separate rare isotopes from abundant neighboring mass. It can detect a single type of atom among other 10^{15} atoms.

APPLICATION DOMAINS

Radiocarbon (^{14}C) dating, isotope tracking, geological analysis, archeology, biomedical research, forensics and nuclear forensics.

MAIN ADVANTAGES

Accelerated Mass Spectrometry is the most sensitive type of mass analysis that can be performed up to date. With sensitivity being its main advantage, AMS can distinguish isotopes with a precision of 1 atomic unit of mass in very small seized samples.

KEYWORDS

Accelerator mass spectrometry, AMSa, carbon dating, isotope tracking and isotope counter.

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