

Title (en)

CHARGED PARTICLE VELOCITY ANALYSER

Title (de)

GESCHWINDIGKEITSANALYSATOR GELADENER TEILCHEN

Title (fr)

ANALYSEUR DE VITESSE DE PARTICULES CHARGEES

Publication

EP 0919067 B1 20001129 (EN)

Application

EP 97936783 A 19970818

Priority

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- GB 9617312 A 19960817

Abstract (en)

[origin: WO9808244A2] An ion velocity analyser 10 comprises a source (12) of ions, which source is in a vacuum. The ions are focused into a beam by a series of electrostatic lenses in the focus section (14) of the ion velocity analyser (10). The beam is modulated by a deflector (16) to give a pseudo-random binary signal having pulses of variable length. The modulator beam travels down in an evacuated drift tube (18) having a chosen electrostatic potential to a detector (20). The signal from the detector (20) is amplified and the signal intensity feature of an array of time channels is measured and recorded by a multichannel analyser (22); the resultant signal is a convolution of the pseudo-random binary signal and the time of flight spectrum of the ion sample. The signal from the detector is cross-correlated with the modulated signal and deconvoluted to give a time of flight spectrum for the ion sample. The time of flight spectrum is then inverted to give a mass spectrum.

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