

ABSTRACT

TIME-OF-FLIGHT MASS SPECTROMETER

The invention discloses a time-of-flight mass spectrometer, comprising a vacuum chamber, a vacuum generation device, an ion flight cavity, an ion source device, a laser excitation device, a chip exchange device, a sample processing device, an excitation sequence device, a signal acquisition device, a high-voltage control device and an operation control device. The vacuum chamber, the vacuum generation device and the ion flight cavity are assembled into a vacuum system. The ion source device is installed in the vacuum system. The laser excitation device provides energy for ion excitation. The excitation sequence device, the high-voltage control device and the ion source device are electrically connected in sequence. The signal acquisition device is electrically connected to the ion flight cavity. According to the invention, by introducing a time-of-flight mass spectrometry detection technology into the field of gene detection, the time-of-flight mass spectrometer has high signal-to-noise ratio, mass resolution and repetition rate. The time-of-flight mass spectrometer is integrated with a sample preparation module, thereby conveniently and quickly completing a mass spectrometry detection process. The time-of-flight mass spectrometer has high operation efficiency, is not prone to failure, and also solves the problems such as sample contamination.

Figure 1