the mobile phase and other factors. Accordingly, in recent years, attempts have been made to improve the detection sensitivity for each compound in a SIM (selected ion monitoring) or MRM (multiple reaction monitoring) measurement by adjusting the voltage applied to the ESI ion source for each target ion in the SIM measurement or each target MRM transition (which is a combination of the precursor ion and the product ion).

[0010]

In an MRM measurement performed in a simultaneous multi-component analysis, it is normally necessary to change the MRM transition within a short period of time of a few msec to several tens of msec. However, attempting to change the value of the voltage applied to the nozzle for such a change of the MRM transition causes the following problem:

[0011]

Not only the aforementioned high-voltage power supply device but also any high-voltage power supply device of the same type normally has a capacitor connected to its output terminal to smooth the output voltage. In the phase of increasing the voltage value (absolute value of the voltage), the voltage rises at high rates since the capacitor can be quickly charged by increasing the output current. By comparison, in the phase of decreasing the voltage value (absolute value of the voltage), the electric charges accumulated in the capacitor need to be discharged through a channel including output resistors and other elements. Since the discharge rate depends on the time constant, the rate of decrease in the voltage is considerably lower than that of the increase in the voltage. In the high-voltage power supply device described in Patent Literature 2, when the polarity of the output voltage is changed, the switch circuit provided at the output terminal effectively works to discharge the accumulated electric charges. However, when the output voltage is decreased without changing its polarity, the switch circuit does not work, so that the voltage requires time to change. For example, in one example of the high-voltage power supply device described in

detected, the area of this peak is calculated, and the quantitative value is determined from the peak area value.

[0034]

In a simultaneous multi-component analysis, there are a considerable number of target compounds in the first place, and furthermore, many of those compounds often have close retention times. As a result, the measurement time ranges corresponding to a plurality of target compounds overlap each other. Within such overlapping time ranges, it is necessary to sequentially perform MRM measurements for the MRM transitions corresponding to the plurality of target compounds. By repeating the cycle in which one MRM measurement is performed for each of those target compounds, the data for creating mass chromatograms of the plurality of target compounds are concurrently determined.

To perform the previously described analysis, the analysis operator specifies the measurement time range defined around the retention time of each target compound as well as one or more MRM transitions to be subjected to the measurement within that measurement time range.

Specifically, when the analysis operator performs a predetermined operation using the input unit 36, the analysis condition setting processor 33 displays, on the display unit 37, an input window prompting the entry of the measurement time range, name of the compound to be subjected to the measurement within that measurement time range, MRM transition (m/z value of the precursor ion and that of the product ion) corresponding to that compound, polarity of those ions, and other pieces of relevant information. On this input window, the analysis operator using the operation unit 36 enters the predetermined items of information. The entered information is received by the analysis condition setting processor 33. One compound does not always have only one corresponding MRM transition but actually may have two or more.