By arranging the ion-transporting gas flow between two parallel electrodes 103, and setting an electrical field of the type referred to above between these electrodes, some of the ions 105 can be removed through the structure thus obtained and the desired passband can be selected with the aid of the aforementioned compensation voltage. By using an electric field after the filter in the flow direction to collect the ions 104 that have passed through the filter, it is possible to determine the quality and/or number (reference number 16 in Figures 1 and 6 - 8) of the ions 104 that have passed through.

For its part, Figure 2 shows a situation corresponding more to reality in the case of the behaviour of the ions in the aforementioned filtering technique. The flow profile 101 of the gas flow shows that the ionized gas flow to be analysed covers the entire cross-section area of the flow channel 18. As the ions are distributed evenly over the flow channel 18, the filter electrodes 103 will inevitably also collect ions 104b that it is particularly desired to pass through the filter. These ions 104b, which are too close to the edge of the flow channel 18, are neutralized and thus out of the flow that has passed through the filter. This reduces the signal obtained from the system comprising the filter, and also the signal-noise ratio.

The present invention is intended to create a method and structure, which will improve the signal obtained from chemical analysis. The characteristic features of the method according to the invention are stated in Claim 1 and those of the structure in Claim ~~9~~8.

In the invention, a parallel mainly non-ionic gas flow, which is on at least one side of the ionized gas flow, is led along with the ionized gas flow to the filter structure. The use of the solution prevents, or at least reduces, the filtering of ions that it is wished to pass through the filtering. In addition to the

CLAIMS

1. Method for chemical analysis, in which
- a gas flow is ionized,

- the ionized gas flow (24) is led to a filtering area (28) fitted to the flow channel (18),

- the ionized gas flow (24) is filtered using the DMS/FAIMS method, in order to remove at least some of the ions (25,105) from the gas flow (24), characterized in that

- a parallel mainly non-ionized gas flow (13), which is on at least one side of the ionized gas flow (24), is led to the filtering area (28) together with the ionized gas flow (24), ~~.~~

-the said mainly non-ionized gas flow (13) is formed in the flow channel (18).

2. Method according to Claim 1, characterized in that the ionized gas flow (24) is led to the filtering area (28) between the mainly non-ionized gas flow (13).

~~3. Method according to Claim 1 or 2, characterized in that the mainly non-ionized gas flow (13) is formed in the flow channel (18).~~

~~4~~3. Method according to Claim 1 or 2~~-3~~, characterized in that

- an ionized gas flow (24') is brought to the flow channel (18),

- the mainly non-ionized gas flow (13) is formed in the flow channel (18) by neutralizing part of the ionized gas flow (24') .

~~5. Method according to any of Claims 1 - 4, characterized in that the mainly non-ionized gas flow (13) is formed by bringing a neutral gas flow to the flow channel (18) .~~

~~6~~4. Method according to any of Claims 1 -~~-5~~3, characterized in that the mainly non-ionized gas flow (13) and the ionized gas

flow (24) are combined with each other before being led to the filtering area (28).

~~7~~5. Method according to any of Claims 1 -~~6~~4, characterized in that the ionized gas flow (24) is flattened by the mainly non-ionized gas flow (13) when they are led to the filtering area (28).

~~8~~6. Method according to any of Claims 1 - ~~7~~5, characterized in that at least part of the gas flow (13, 24) is brought from the sides into the filtering structure (10), when it is in the operating attitude.

~~9~~7. Structure for chemical analysis, which includes a flow-channel arrangement (18) for an ionized gas flow (24), which is arranged to be filtered using the DMS/FAIMS method in a planar filtering area (28) fitted to the flow channel (18), characterized in that the structure (10) includes means (11) for creating a mainly non-ionized gas flow (13) on at least one side of the ionized gas flow (24).

~~10. Structure according to Claim 9, characterized in that the~~ which means include a structure (11) dividing the flow channel (18) into parts, in the middle of which can be arranged the ionized gas flow (24) and the mainly non-ionized gas flows (13) on both sides of relative to it.

~~11~~8. Structure according to Claim ~~10~~7, characterized in that electrode means (38), which are arranged to neutralize part of the ionized gas flow (24') brought to the flow channel (18), are fitted to the structure (11) dividing the flow channel (18) into parts, in order to create a mainly non-ionized gas flow (13).

~~12~~9. Structure according to any of Claims ~~9~~7-~~11~~8, characterized in that a gap (19) is arranged to remain between the structure

(11) dividing the flow channel (18) into parts and the filtering area (28).

130. Structure according to any of Claims 97-129, characterized in that the filtering area (28) includes a structure (15) for flattening the ionized gas flow (24) by the mainly non-ionized gas flow (13).

14. Structure according to any of Claims 97-130, characterized in that at least part of the gas flows (13, 24, 24') is arranged to be brought from the sides into the filter structure (10) when it is in the operating attitude.