Claims

1. A hot gas filtration system comprising
   - a filter vessel,
   - a tubesheet separating the interior of the filter vessel into a clean gas section and a raw gas section, said filter vessel comprising at its raw gas section a raw gas inlet and at its clean gas section a clean gas outlet,
   - a plurality of filter elements having a raw gas portion and a clean gas end, said plurality of filter elements being arranged in two or more groups of two or more filter elements, said filter elements being connected to the tubesheet with their clean gas ends and extending with their raw gas portions into the raw gas section of the interior of said vessel,
   - two or more plenum chambers accommodated in the clean gas section of the interior of the filter vessel, each plenum chamber accommodating the clean gas ends of the filter elements of one group of filter elements, each of said plenum chambers comprising a gas exchange opening providing a direct fluid communication of its interior with the clean gas section of the interior of the filter vessel,
   - a blowback arrangement comprising a blowback gas reservoir and a blowback gas pipe for each group of filter elements, said blowback gas pipes having an outlet positioned in said clean gas section of the vessel, said outlet of the blowback gas pipes being directed at the gas exchange opening of the plenum chambers, said outlet of said blowback pipe having a free cross-sectional area of from about 10 % to about 90 % of the free cross-sectional area of said gas exchange opening of said plenum chambers, ~~.~~

   wherein the blowback arrangement comprises blowback valves, wherein the blowback valves have an opening time of about 400 msec or less.

2. The hot gas filtration system of claim 1, wherein said free cross-sectional area of said blowback gas pipe amounts to about 12 % or more of the free cross-sectional area of the gas exchange opening of the plenum chamber, preferably to about 15 % to about 50 %, more preferably to about 20 % to about 40 %.

3. The hot gas filtration system of claim 1 or 2, wherein said outlet of said blowback gas pipe is positioned at about the upper end of the gas exchange opening of said plenum chamber, optionally about flush with said upper end of the gas exchange opening.

4. The hot gas filtration system of claim 1 or 2, wherein the blowback pipe is arranged such that its outlet extends into the gas exchange opening of the plenum chamber.

5. The hot gas filtration system of any one of claims 1 to 4, wherein for each group of filter elements a separate plenum chamber and blowback gas pipe is provided.

6. The hot gas filtration system of any one claims 1 to 5, wherein the plenum chamber has a non-circular configuration.

7. The hot gas filtration system of any one of claims 1 to 6, wherein the ~~blowback arrangement comprises blowback valves, said~~ blowback valves ~~preferably having~~ have a nominal diameter in relation to the inner diameter of the blowback gas pipes of from about 0.8 to about 1.1, preferably of from about 0.9 to about 1.1.

8. The hot gas filtration system of claim 7, wherein the opening time of the blowback valves ~~have an opening time of about 400 msec or less,~~ is preferably of about 200 msec or less.

9. The hot gas filtration system according to any one of claims 1 to 8, wherein the system comprises a plurality of safety fuses, each filter element being connected at its clean gas end to one of the safety fuses.

10. The hot gas filtration system according to any one of claims 1 to 9, wherein the blowback arrangement is designed to provide pulses of blowback gas to the plenum chambers.