

## Granular filtration of biomass combustion flue gases

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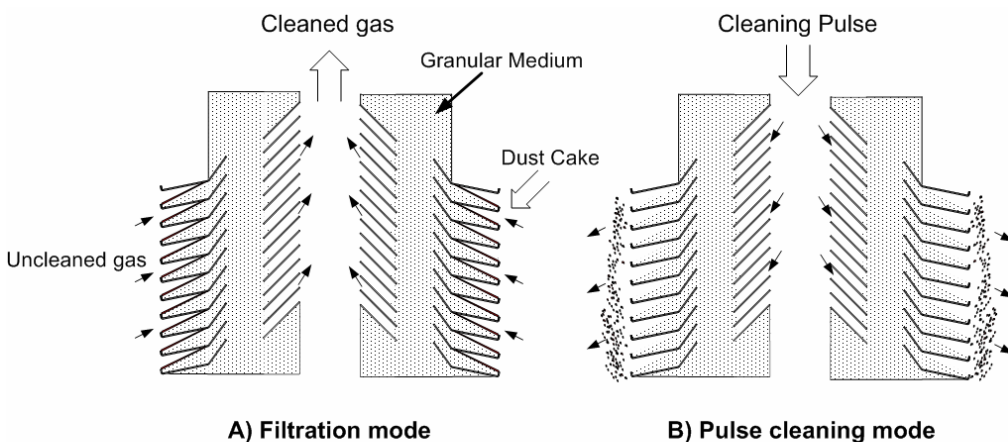
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### Key words:

Granular filtration, cake filtration, biomass

### Abstract

Granular bed filters can operate at high temperatures [1] and chemical processing of the hot filtered gas is further possible. The present cleaning concept utilises the transient behaviour of granular filtration and operates in surface filtration mode. The particles are removed from the gas as it passes through the bed of unbound granular medium in the Panel Bed Filter (PBF), figure 1. The gas flows horizontally through the bed, and the dust deposits form a filter cake on the bed surface. The filter cake is removed periodically with a reverse flow pulse of pressurized air. The PBF concept was invented by Squires and has since been further developed [2][3].



**Figure 1:** Working principle of the panel bed filter

This paper describes the plant design and the results from the testing of a single filter element of commercial design, 250 m<sup>3</sup>/h (S.T.P.), used to remove particles from biomass combustion flue gas. A new pulse cleaning setup is designed to efficiently remove the filter cake, while keeping the roots of the dust cake intact. The paper compares the performance of the PBF with other granular filters and with the performance of commercial bag house filters.

### References

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