

## Abstract

Fine dust, especially those fractions below 10 and 2,5 microns can cause serious heart and respiratory disease and stringently requires effective pollutant standards and methods for their reduction. Therefore stricter emission European Union regulations /1/ were recently established, in order to improve the fine dust situation of the ambient air in Europe.

Nowadays among different technical separation devices, filtering, regenerateable dust separators are the most suitable ones to meet very low dust emission concentrations of industrial exhaust gases. But the disadvantage of this separator is the relative high pressure drop and sometimes a premature filter media clogging, which requires its costly replacement. In order to minimise this disadvantage, suitable design methods for choosing optimal filter media with minimum clogging behaviour are necessary. In Europe there exists a German guideline (VDI 3926) /2/, by which in laboratory test runs optimal filter media can be evaluated. A short survey of the historical development of this guideline will be given. The newest version of this guideline consists of a so called "aging-period" by which the filter medium should be quickly brought into a state, which is similar to a state, gained after a long industrial operation time. This should give the chance to compare different filter media also after longer usage. The problem in this case is, that the values of operation parameters which should be chosen for this aging test to reach a stationary situation (cycle time . regeneration parameters...) are not quite clear until now. For this purpose a new aging chamber was developed, by which the mechanism which governs the aging procedure can be cleared up.

It comes out the, that due to the time controlled regeneration of the filter medium, never a stationary clogging condition can be reached /3/. Based on these findings a new method for characterising different filter media concerning their clogging behaviour will be demonstrated.

/1/EU-Council Directive 1999/30/EC, EU-Council Directive 2008/50/EC.

/2/VDI/DIN 3926 Standard "Testing of Cleanable Filter Media", 1994, 2004.

/3/ J. Schuberth, G. Mauschitz, W. Höflinger: „Clogging mechanisms involved in the aging of cleanable filter media“, FILTECH 2009, Wiesbaden, Germany Oct 13-15 2009, Proceedings, II-341-II-348.