Title (en)

MECHANICAL SEPARATOR FOR STACK EFFLUENTS AND RELATED METHOD FOR MAKING SAME

Title (de)

MECHANISCHER ABSCHEIDER FÜR ABGASEN UND METHODE ZU DESSEN HERSTELLUNG

Title (fr)

SEPARATEUR MECANIQUE POUR EFFLUENTS GAZEUX ET PROCEDE DE FABRICATION ASSOCIE

Publication

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Application

EP 99914638 A 19990421

Priority

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- FR 9805458 A 19980428

Abstract (en)

[origin: FR2777801A1] The separator has at least one channel (1) for effluents flowing turbulently in a porous structure (2) with surfaces (4) to capture the particles and also includes an assembly of little elements (3) formed of ultrafine fibers which have a diameter of the order of a micrometer, fixed to each other and to the surfaces of the particle collectors, with the points extending irregularly The fibers are less than a millimeter long and the elements are less than 1 millimeter thick. The porous structure is a ceramic honeycomb or a ceramic divided mousse made of alumina, cordierite, mullite, zircon, sialon or silicon carbide, with a porosity of between 70 and 90%. Alternatively, the mousse can be made of polyurethane. The separator is between 10 and 100 cm long and has several channels parallel to each other, with the number of channels proportional to the flow rate of the gaseous effluent. Method of making such a separator by: soaking a porous structure containing flow channels in a first solution; removing the structure from the solution; passing an air flow through the channels for an hour; dispersing little elements of ultrafine fibers in the air flow; allowing the little elements to deposit on the collection surfaces which are made adhesive so the ends of the elements extend irregularly from the surface; and placing the separator in an oven for an hour. After the elements are deposited, the channels are emptied to cut the particles which extend therein. The first solution is a mixture of silane in a hydrocarbon solvent, or a mixture of water, sodium silicate and ethylene glycol.

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