

Optimization of nozzle design for the pulse cleaning of a ceramic filter

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This study is interested in the development of the basic idea to design the nozzle and to operate the pulse system in the close conditions of an industrial field. The test unit of bench scale consists of four 1.5 meter filters. The optimum ratio of outlet to inside diameter of convergent nozzle was determined, which minimized the pulse gas consumption and maximized the entrainment effect. The effect of the angle and height of nozzle convergent part was optimized by measuring the negative pressure zone around the nozzle and the positive pressure in the filter cavity. The nozzle position was also considered to increase the cleaning effect.