Abstract

The present work details the pressure drop measurements from a large-scale dust collector with flow rates varied with the velocity of 40m/s. The results show that the pressure drop depends on both the gas and liquid phases flow rates. Water with a mass flow rate of 0.01kg/s is injected through water inlet. Both the outlets (water outlet and hot air outlet) are modeled as pressure outlet with ambient conditions. Hot air is considered to be continuum; Water and Dust...
are modeled as discrete phases and are solved by DPM (discrete phase modeling). The fluid is assumed to be three dimensional, turbulent and incompressible in nature. Steady state solver is used and simple algorithm is activated. Segregated solver algorithm is used for pressure–velocity coupling. The pressure drop in the diverging section is well predicted by K-E realizable turbulence model.

References

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Index Terms

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Keywords

Wet Scrubber; Pressure Drop; Dry Scrubber; Multiphase Flow; Dpm (discrete Phase Modeling).