



Study On Dust Removal Efficiency Of High Efficiency Wet Dust Collector With Double-W-Type Channel

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Aiming at the shortcomings of the impactor wet precipitator, the effective wet dust collector is developed whose unique double W channel structure can increase the dust gas turbulent in the W channel and generate more vortices, which greatly increase the chance of contact between gas and water after the dust gas hit the water. Based on multiphase flow numerical simulation technology, the efficient wet dust collector inlet fluid characteristics of different flow rates were analyzed by FLUENT software, the simulation results show that the faster the dust gas flow rate, the more the eddy current in enclosure and W channel, and those eddy currents increased the time that dusty gases stay in the precipitator in a certain extent. when the velocity is over the certain extent, the dust will be spinning in the vortex and going against the contact between dusty gas and water, which will reduce the dust removal efficiency. From the results, the inlet wind speed of precipitator should be to controlled in 13.6 m/s to 14.5 m/s to make sure the dust removal efficiency is the best, which provide the reference value for the treatment of the respirable dust in mines and protect the environment.