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Development and research on highly efficiency wet dust collector

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Abstract:

Aiming at key problems existing in wet dust collector, a new type of wet dust collector was successfully developed which integrated various wet dust removal mechanisms. And the relationship between total collection efficiency and factors such as water discharge level, inlet velocity, pressure loss of the dust collector have been experimentally researched. The results show that: (1) Using unique double "W"-type channel structure, increasing the probability of the dusty gas in contact with water significantly, and the total collection efficiency reaches 99.5% when the water level is 70 mm~90 mm and inlet velocity is 13.5 m/s~14.5 m/s. (2) The internal structure design is reasonable, so the operating pressure loss is just 900~1100 Pa which is less than that of other wet dust collector. (3) The operating pressure loss of the collector and the air volume through it are related to the water level. When the water level changes within a certain range, the total collection efficiency changes little. That is to say, the air volume through the collector is allowed to be changed within a certain range. (4) Lined with anticorrosion and wear-resisting inorganic materials, it has such features as little maintenance work, simple structure, small floor area. So the technology boasts wide application prospects.

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