Pengaruh bentuk dan bahan elektroda terhadap efisiensi pengendap debu elektrostatik untuk partikel Ca(OH)2 dan CaCO3

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Abstrak

An Electrostatic Precipitator (ESP) is one of the most widely used particulate collection device. It has many advantages: Its range of size is enormous; it is used on the largest fossil-fuel-fired electric generating plants and in small household air-conditioning system as well. It is versatile enough to provide virtually complete collection of particles of many substances, both solids and liquids. It can operate at high temperatures and pressures and its power requirement are low. An ESP use electric field from DC High Voltage to generate corona field to ionize particles coming through.

The efficiency of an ESP theoretically influenced by gas flow, particles size and particle migration velocity. The material and form of the collecting plate electrodes are usually not included in efficiency formulas; in fact both of them influence the migration particle velocity. Flat, spotted and ram electrodes are electrodes form that will be analyzed in this thesis because each of them gives a different corona field. Aluminum, zinc and iron are electrodes material which will be analyzed also. The influence of forms and materials of electrodes will tested on CaCO3 and Ca(OH)2 particles using a DC high voltage power source will be tested to get a conclusion.