

C-4 Studies on Evaluation of Control System of SO₂ and NO_x in East Asia

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Precursors of acid precipitation are increasing in East Asia. In order to control SO₂ and NO_x emissions from fossil fuel combustions, following two researches have been carried out for these three years. One was to estimate SO₂, NO_x and NH₃ emissions in each country of East Asia and to build database of them. The other research was to propose most effective techniques to control SO₂ and NO_x emissions from combustions in underdeveloped countries of East Asia.

In the first theme the following have been studied;

Spatial distributions of anthropogenic SO₂ and NO_x emissions with 1 x 1 latitude-longitude resolution have been obtained based on the country-basis and state/province-basis (India/China) data for Asian countries.

The gridded emission amount of NH₃ is needed for the transport, conversion, deposition model of atmospheric pollutants among China, Korea and Japan. The NH₃ emission depends mainly on the dropping of cattles, especially cows and pigs and evaporation from fertilizer delivered to the farmland. The estimation of NH₃ emission over Japan was conducted by the number of cows and pigs and provided amount of fertilizer.

In the second theme desulfurization and denitration techniques and systems from fuel combustions have been discussed and experimented;

Among all the control techniques of SO₂ and NO_x in the world, the following methods were selected as the most effective techniques for controlling SO₂ and NO_x in East Asia.

- (1) The combination of dry limestone injection method for SO_x control and combustion modification method for NO_x control, during pulverized coal combustion.
- (2) The most suitable method for SO_x and NO_x control during circulating fluidized bed combustion.