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能源和环境工程

O_2/N_2、O_2/CO_2和$O_2/CO_2/NO$气氛下煤粉燃烧NO_x排放特性

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摘要

利用滴管炉研究了O_2/N_2、O_2/CO_2和$O_2/CO_2/NO$气氛下煤燃烧过程中NO_x的排放特性。实验结果表明，在O_2/N_2和O_2/CO_2气氛下，高温或高O_2浓度均使NO排放量增加。O_2/CO_2气氛下NO排放量比O_2/N_2气氛下NO排放量低大约30%～40%。在$O_2/CO_2/NO$气氛下，温度不同时，O_2浓度变化对NO排放量的影响规律不同，对循环NO降解的影响规律也不同。高温不利于循环NO降解。随停留时间的延长NO排放量出现两个峰值。

关键词

O_2/CO_2气氛 煤粉燃烧 NO_x排放 循环NO

分类号

NO_x emission characteristics of pulverized coal combustion in O_2/N_2, O_2/CO_2 and $O_2/CO_2/NO$ atmospheres

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Abstract

NO_x emission characteristics during pulverized coal combustion in O_2/CO_2，O_2/N_2 and $O_2/CO_2/NO$ atmospheres were studied by using a drop tube furnace.The results showed that in the O_2/N_2，atmosphere NO emission increased with the increase of O_2 concentration or temperature.The same tendency of NO_x emission was also found in the O_2/CO_2 atmosphere.However，the NO_x emission in the O_2/CO_2 atmosphere was 30%—40% lower than that in the O_2/N_2 atmosphere.In the $O_2/CO_2/NO$ atmosphere，the effects of O_2 concentration on NO_x emission as well as on recycled-NO reduction were different at different temperatures.High temperature did not favor recycled-NO reduction.There were two peak values of NO_x emission with the increase of residence time.

Key words

O_2/CO_2 atmosphere pulverized coal combustion NO_x emission recycled-NO

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