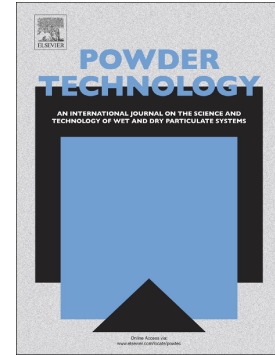


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# Experimental study on particles agglomeration by chemical and turbulent agglomeration before electrostatic precipitators

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## 1. Introduction

Fine particle pollution has recently aroused world-wide attention. In general, fine particle pollution is caused by fossil fuel combustion, automobile exhaust and several other human activities, which is hazard to the atmospheric environment and people's health[1-3]. The weather phenomenon as the haze and fog are caused by these particles in many large cities in European and China. Worse still, fine particles can enrich with toxic heavy metals, acid oxides and organic pollutants because of its small aerodynamic diameter and large surface area[4, 5]. When those particles enter the human body, they can cause serious illness and even death. Accordingly, stricter emissions standards have been implemented in China. However, conventional precipitators such as baghouses and ESP are less efficient in collecting fine particles, especially for 0.1-1  $\mu\text{m}$  particles. Therefore, the pretreatment technology has been a hot spot to improve removal efficiency of fine particles and meet stricter emissions standards[6, 7].

There are many pretreatment technologies can improve ESP removal efficiency by particles aggregation, the agglomeration process such as chemical agglomeration, turbulent agglomeration

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