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可再生能源发电

生物质与煤混燃的灰分特性分析

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摘要：

以麦秆、杨木屑、酒糟和烟煤在不同配比下混合燃烧的灰分作为研究对象，分别在实验室和大型电站锅炉上测试。实验室中，根据生物质配比，灰化温度分别选取550、650、750和800 ℃，对灰样进行灰分特性分析，包括组分分析、熔融特性分析和结渣指数的计算分析；然后在大型电站锅炉实际燃烧，对锅炉飞灰作相同的特性研究，与实验室结论比较分析，并记录分析了前屏过热器上灰沉积过程和形态。研究表明：灰化温度应根据生物质配比选取不同的温度；提高生物质的掺入比总体上会使灰熔融温度降低；掺烧磷和钾元素含量高的生物质，掺配比应小于10%。

关键词： 生物质混燃 电站锅炉测试 灰化温度 灰分特性分析

Investigation on the Ash Characteristic During Co-firing of Coal and Biomass

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Abstract: The ash of bituminous coal and 3 sorts of biomass (wheat stem, wood dust, lees) blends in different mixing proportions were studied in laboratory and combusted on the power plant boiler. In laboratory, according to the biomass proportion, the ashing temperature were adopted at 550, 650, 750 and 800 ℃, the ash characteristic analysis involving composition, fusing temperature and slagging index were carried out. The blends of biomass and coal were co-fired on the power plant boiler to investigate the ash depositing process on the platen superheater, and the same ash characteristic analysis of boiler fly ash was conducted and compared with the data in laboratory. It was found that the ashing temperature should be selected according to the biomasses proportion, when the biomasses fraction is raised, the ash fusing temperature of blends decreases generally, the biomass with high P and K content proportion should not exceed 10% in co-firing.

Keywords: biomass co-firing power plant boiler test ashing temperature ash characteristic analysis

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