

生物质颗粒燃料特性及其对燃烧的影响分析 Comparison on Characterization Effect of Biomass Pellet Fuels on Combustion Behavior

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关键词: 生物质能 颗粒燃料 物理特性 化学成分 燃烧特性

摘要: 采用欧盟生物质固体成型燃料标准 (CEN/TC 335) 试验检测了中国和瑞典典型的10种生物质颗粒燃料, 重点对中国的秸秆类颗粒燃料与瑞典的木质颗粒进行了对比, 并分析其对燃烧特性的影响。结果表明中瑞两国的生物质颗粒燃料都能满足技术标准要求, 瑞典木质颗粒具有较高的性能参数; 中国的玉米秸秆颗粒燃料发热量比瑞典木质颗粒低20.9%, 挥发分低, 燃烧后灰渣中的硅含量高20%, 灰熔点低, 燃烧后灰分多, 易结渣, 对燃烧设备有较高的要求。 Ten types of biomass pellet fuels from China and Sweden were analyzed according to European solid biofuel standards (CEN/TC 335), and the differences in characteristics were analyzed between straw pellet fuel in China and wood pellet fuel from Sweden. The results showed that the biomass pellet fuels from China and Sweden satisfied the standard requirement and the wood pellets from Sweden had highest quality. The calorific value of pellet made from corn straw in China was 20.9% lower and the Si content was 20% higher in the ash and slag after combustion than that of Swedish wood pellets. This indicated that the biomass pellet fuels from China have more ash and more easily form slag during combustion. “Chinese” crop pellets with higher ash content and increased risk for slagging will require high quality combustion equipment to ensure high availability.

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