

下降管式生物质快速热解反应器温度场控制与检测 Control and Measurement of Temperature Field in a Down-flow Tube Reactor

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关键词: 生物质快速热解反应器 下降管 温度 测量 控制

摘要: 下降管式生物质快速热解反应器内部温度场的准确控制与测量,是影响生物质快速热解挥发的一个关键因素。为了研究物质快速热解挥发特性,设计制作了下降管式生物质快速热解反应器及其温度场的控制与检测系统,并且利用该反应器进行了玉米秸秆粉末快速热解挥发特性实验。实验结果表明,该实验装置能够对反应温度进行准确控制和测量;玉米秸秆粉的热解挥发率随热解温度的升高、停留时间的增加呈非线性增大。 In order to study the volatilization characteristics of biomass, a downward-flow tube reactor with a temperature control and measurement system was designed and fabricated. Corn stalk powder pyrolysis experiments were conducted and the experimental results showed that the reaction temperature could be controlled and measured precisely; the volatilized fraction of corn stalk powder increased nonlinearly with increased reaction temperature and residence time.

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