生物质固定床两步法气化技术 Two-step Gasification Technology of Biomass in Fixed Bed

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摘 要： 在分析焦油形成机理和裂解条件的基础上提出了一种高效的低焦油生物质气化技术。该技术将生物质低温热解和高温气化两个过程分开进行，且要求热解发生于350～500℃之间，气化温度控制在1000℃左右，气化剂当量比大约为0.3。分步气化保证了焦油强化裂解的高温条件，使其充分裂解为小分子不凝性可燃气体，从而降低了可燃气体中基础焦油质量浓度，提高了燃气品质。该工艺可使燃气中基础焦油质量浓度降低到20mg/m3以下。A novel and efficient low-tar gasification technology was put forward based on the mechanics of tar generation and pyrolysis. This technology contains such two separate sub-process as pyrolysis occurring between 350℃ and 500℃, and gasification reacting in the high temperature condition about 1000℃. The high-temperature gasification ensures the tar pyrolyze into small molecule non-condensable gases with the equivalence ratio of gasification agent about 0.3. As a result, the quality of biogas is highly improved and the mass concentration of original tar in the biogas is significantly reduced below 20 mg/m3.

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