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Titel des Beitrags: Air-Blown Entrained-Flow Gasification of Biocoal from Hydrothermal Carbonization

Abstract:
Hydrothermal carbonization was used to convert green waste into a high-quality biocoal that was applied to an air-blown entrained-flow gasifier. Fuel-specific operating parameters are required to achieve complete fuel conversion and operate the gasifier at high efficiency. Therefore, different air-to-fuel equivalence ratios and steam addition were applied to investigate effects on gasifier performance. Fuel and carbon conversion were determined by char-particle analysis. The syngas composition and cold gas efficiencies were determined and the solid-phase adsorption method was used for tar measurements. It was shown that owing to high conversion rates and comparably low tar loading, biocoal is very applicable for entrained-flow gasification. Higher gas preheating temperatures would improve the process.

Stichworte: Biomass; Entrained-flow gasification; Green waste; Hydrothermal carbonization; Tar measurement

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