REACTION MECHANISM OF THE CO-GASIFICATION BETWEEN BIOMASS AND POLYMER

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ABSTRACT

REACTION MECHANISM OF CO-GASIFICATION BETWEEN BIOMASS AND POLYMER

This review focuses on the process of gasification and co-gasification, especially, the co-gasification between biomass and polymer for syngas production. This study also discusses process parameters, such as gasifier, gasifying agent, process temperature, equivalence ratio, and feedstock content. The fixed bed, fluidized bed, and entrained flow gasifiers are the types of gasifiers examined in this study, and the gasifying agents discussed are air, steam, and oxygen. In addition, information gathered from several other publications, research, and journal articles is used to identify the temperature and equivalency ratio best suited for the co-gasification process. Last but not least, several mixtures of biomass and polymer that were gasified together are investigated to ascertain which feedstock combination will provide the most syngas yield. All of these variables are crucial to the co-gasification process's reaction mechanism and will ultimately affect how much syngas is generated. This may be evaluated by measuring the syngas yield and the lower heating value (LHV) of syngas in order to calculate the gasification performance. Finally, the co-gasification process' elaborate reaction mechanism and the effect the parameters bring to the process are examined.

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