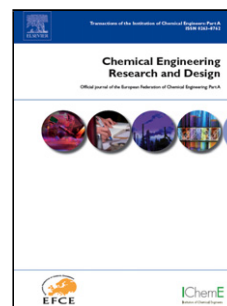


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Title.

Experimental study and modelling of the kinetic of biomass char gasification in a fluidized bed reactor

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Highlights

- **Operating conditions: $700^{\circ}\text{C} < T < 850^{\circ}\text{C}$, $0.1 \text{ bars} < P_{\text{H}_2\text{O}} < 0.7 \text{ bars}$, $0.1 \text{ bars} < P_{\text{H}_2} < 0.25 \text{ bars}$**
- **Gasification in two steps: char devolatilization followed by the char gasification**
- **The hydrogen favors the CH_4 production and inhibits the reaction of gasification**
- **The SCM well-represents experimental data including the inhibiting effect of H_2**

Abstract

This work presents experimental data on the kinetic of steam gasification of biomass char in a fluidized bed reactor at atmospheric pressure. The char was obtained from fast pyrolysis of cylindrical beech stick in an annex batch fluidized bed reactor at 650°C . The experiments were performed for temperatures in the range of 700 to 850°C and steam partial pressures between 0.1 and 0.7 bars. The

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