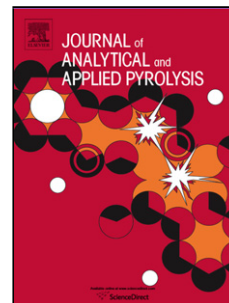


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**Energy recovery analysis from sugar cane bagasse pyrolysis and gasification using thermogravimetry, mass spectrometry and kinetic models**

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**Highlights**

- Heating rate effect of sugarcane bagasse pyrolysis on char yield
- Product gas compositions during pyrolysis and gasification at different temperature ranges
- Appropriate temperature range for optimum gasification conversion
- Estimation of kinetic constants to different char production rates
- Dependencies of kinetic parameters under various conversion levels

**ABSTRACT** : s

The energy recovery from biomass and its utilisation as fuels and chemicals has been gained interest in recent years. The production of syngas from sugarcane pyrolysis and gasification is investigated. Pyrolysis studies of sugar cane bagasse are performed using thermogravimetry (TG) at different heating rates (10, 20, 40, 100, 250 K/min). A mass spectrometry (MS) coupled with

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