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Characterization of torrefied sugarcane bagasse for gasification in a downdraft biomass gasifier system.

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**Abstract content (Max 300 words)
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Biorefining of lignocellulosic materials such as sugarcane bagasse to produce multiple bio-based products which includes synthesis gas is becoming a dynamic research area. Pre-processing techniques that improve the quality of bagasse are essential for the successful application of this feedstock in energy production. This study investigated modifications in the composition of sugarcane bagasse subjected to a torrefaction process as a preparation of bagasse for gasification. Characterization of bagasse was undertaken in terms of proximate and ultimate analyses as well as energy value, and results used to conduct computer simulation of the gasification process. The gasification process results showed that torrefied bagasse is a suitable feedstock for gasification in terms of conversion efficiency which was found to be approximately 70%.

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 (Hons, MSc,
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PhD

**Main supervisor (name and email)
and his / her institution**

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