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COMPARING FOUR BIO-REDUCERS SELF-IGNITION PROPENSITY BY APPLYING HEAT-BASED METHODS DERIVED FROM COAL

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Highlights

- Four types of fresh biochar used as bio-reducers were exposed to air
- Heat based methods were used to investigate spontaneous combustion
- Under air exposure, the weights of the biochars increased along with heat generation

Abstract

Charcoal seems one of the most promising bio-reducer because of its high coke replacement ratio in blast furnaces. Nevertheless, biochar materials are subject self-combustion during storage, handling and transport, and need to be studied in order to understand and limit these phenomena. Heat-based methods were employed to compare and determine the self-ignition parameters of four types of fresh biochar (*Quercus pubescens*, *Cyclobalanopsis glauca*, and *Trigonostemon huangmosun*, *Bambusa vulgaris*) that are used as bio-reducers in the silica industry.

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