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# Microwave-assisted catalytic pyrolysis of moso bamboo for high syngas production

Qing Dong [a,*], Miaomiao Niu [b], Dongmei Bi [c], Weiyu Liu [a], Xuexin Gu [a], Chen Lu [a]

[a]Jiangsu Provincial Engineering Laboratory for Biomass Conversion and Process Integration, School of Life Science and Food Engineering, Huaiyin Institute of Technology, Huaian 223003, China

[b]College of Energy and Power Engineering, Nanjing Institute of Technology, Nanjing 211167, China

[c]School of Agricultural Engineering and Food Science, Shandong University of Technology, Zibo 255049, China

**Corresponding author. Tel.: +86 517-83559216; fax: +86 517-83559216.*

*Email:hai2858@126.com*

**Abstract:** Microwave-assisted pyrolysis of moso bamboo with the activated carbon-supported iron(III) ion catalyst was carried out with the aim of obtaining high quality and quantity syngas($H_2$+CO). The effect of the catalyst on moso bomboo pyrolysis involving the temperature-rising characteristics, product distribution, tar conversion and gas compositions were investigated. The results indicated that the catalyst improved the microwave-absorption capability and increased the maximum reaction temperatures. The formation of gases was promoted by the catalyst mainly at the expense of the tar, indicating the catalyst had an excellent activity for the tar conversion .The catalyst had the positive influence on the formation of syngas with the maximum content reaching up to 81.14 vol% with $H_2$/CO being 1.04 and inhibited the production of $CH_4$ and $CO_2$. The loading of iron(III) ion into activated carbon exerted a