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Abstract: This study was carried out to investigate pyrolysis characteristics of moso bamboo *(Phyllostachys pubescens)*, including outer layer (OB), middle layer (MB) and inner layer (IB) and bamboo leaves (BL), through TG-FTIR and Py-GC/MS. The results showed that 70% of weight loss occurred at rapid pyrolysis stage with temperature of 200-400□. With increase in heating rate, pyrolysis process shifted toward higher temperature. IB, OB, MB and BL had a different activation energy at different conversion rates. BL had a higher activation energy than IB, OB and MB. The volatiles of bamboo was complicated with 2-30 of C atoms. IB, OB and MB mainly released benzofuran, hydroxyacetaldehyde and 2-Pentanone. BL released furan, acetic acid and phenol. The main pyrolysis products included H_2O, CH_4, CO_2, CO, carboxylic acids, NO, NO_2. Pyrolysis products of IB was the most and that of BL was the lowest. MB had the lowest pyrolysis temperature.

Keywords: Moso bamboo; Pyrolysis; Kinetic; TG-FTIR; Py-GC/MS.

1. Introduction