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STUDY OF THE DEVOLATILIZATION KINETICS OF KENAF BY ISOCONVERSIONAL METHODS. INFLUENCE OF VARIABLES

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Abstract

The thermal degradation of kenaf (*Hibiscus cannabinus*) under the effect of several variables (particle size, Ar flow rate, sample initial mass and heating rate) was investigated. From experimental data and by application of various model-free methods (Friedman, Kissinger-Akahira-Sunose and Flynn-Wall-Ozawa), the activation energies (E_A) were calculated as a function of conversion. The results obtained allowed to conclude that kenaf follows a multi-stage degradation mechanism, with E_A values ranging 170-225 kJ mol^{-1}. Despite the slight differences showed by the three methods on the E_A values, they agreed about the pattern of E_A with conversion.

Key words: kenaf, pyrolysis, kinetics, model-free methods

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