

عنوان مقاله:

Thermochemical Conversion Reaction Kinetics of Sugar and White Wheat Flour Powders

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خلاصه مقاله:

Using biomass and bioenergy as a kind of carbon neutral renewable energy has a significant impact on controlling global warming, preventing fossil fuels depletion, and increasing sustainability in supplying energy. In the present article, two types of biomass foodstuffs, sugar and white wheat flour powders are analyzed by using TGA, DTG, and SEM tests. The main objective of the research is to find kinetic parameters in thermochemical conversion of sugar and white wheat flour powders in various heating rates. In this regard, KAS, Friedman, FWO, and Miura Maki kinetic models are used. Accordingly, the most compatible models are identified for each of the used powders. The results show that sugar and white wheat flour powders agree with R2 and A2 master curves, respectively. Kinetic models shows that the activation energy remains nearly constant during the decomposition process for both of sugar and white wheat flour powders.

کلمات کلیدی:

biomass and bioenergy, TGA, DTG, SEM, thermochemical conversion, kinetics study

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