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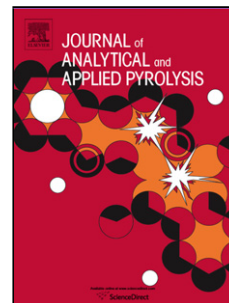
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Influence of carrier gas on microwave-induced pyrolysis

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Abstract

Interest in microwave-induced pyrolysis has increased in recent years due to its several advantages over conventional pyrolysis. Most of these advantages are related to the presence of microplasmas in microwave heating, since the pyrolysis reactions that take place in a plasma atmosphere generally produce light molecules, such as H₂ and CO. Although the exact nature of these plasmas is as yet unknown, it is likely to be dependent on the ionization of the surrounding gases. For this reason, the influence of different carrier gases (N₂, He or no carrier gas) on microwave-induced pyrolysis was chosen as the subject of this study. It was found that microwave-induced pyrolysis can be used to obtain equally good gas compositions and yields after the reactor has been inertized, without the need for a carrier gas.

Keywords

Microwave pyrolysis, Carrier, Microplasmas, Syngas

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