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Comparison of Reforming Behaviors of Hexane and Isooctane in Microwave Steam Plasma

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The reforming behaviors of hexane and isooctane were studied using microwave steam plasma under atmospheric pressure without additional plasma supporting gas. The experimental results showed that the reforming process for both hydrocarbons was rapid and that the product gas consisted predominantly of hydrogen and carbon monoxide. The reforming process was less dominant for higher hydrocarbons due to the supplementary energy required as indicated by the equilibrium calculation. The features of the proposed microwave steam plasma reforming system were presented with many advantages.

Keywords: Steam plasma, Reforming, Hydrocarbon, Microwave discharge, Hydrogen

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