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Title

Thermal Decomposition of Waste Glycerol

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Abstract

This study clarified appropriate reaction conditions for the thermal decomposition of glycerol to H₂, CO, and hydrocarbons to utilize waste glycerol derived from biodiesel production. The effect of reaction temperature on gaseous products was examined through experimentation and chemical equilibrium simulation. In addition, the effects of steam addition and partial oxidation were also investigated. The results indicated that both steam addition and partial oxidation are effective methods for improving gasification efficiency at a relatively low reaction temperature, and the heat value of the products is decreased when partial oxidation is employed.