

Abstract

Glycerol was reacted with cinnamaldehyde over phosphotungstic acid (PW) encapsulated on NaY at 100°C. Catalysts containing different PW contents were prepared. The activity increased with an increasing amount of PW encapsulated on NaY, and the use of the NaY-PW₄ (0.121 g_{PW}/g_{NaY}) material resulted in a superior conversion compared to those obtained using the other materials. After 5 h, the conversion of glycerol was 89% at 100°C using 0.3 g of catalyst and a glycerol:cinnamaldehyde molar ratio of 1:2.25. Furthermore, NaY-PW₄ exhibited a good catalytic stability.