Production of jet-fuel fraction through hydrocracking of paraffin wax in the continuous fixed bed system over 0.5wt% Pt/Siral40 catalyst

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Production of jet-fuel fraction (C10 ~ C17) through hydrocracking of paraffin wax in the continuous fixed bed system over 0.5wt% Pt/Siral 40 catalyst was studied. Reaction conditions such as reaction temperature, catalyst loading, wax feed rate, the pressure and feeding rate of hydrogen were investigated. In this study, it was found that the conversion of paraffin wax and yield of jet-fuel fraction were 92% over and 64% in optimum conditions (temperature 400℃, wax feeding rate 0.3 ml/gcat.min, hydrogen pressure 45 bar, hydrogen feed rate 50 ml/min). When the powder type catalyst was granulated in extruder using organic and inorganic binders, the paraffin wax conversion and the yield of jet-fuel fraction were decreased depending on the additional amount of binders.