Catalytic performances and characterization of Co oxide loaded high surface saponite catalysts for heavy oil hydrodesulfurization. Kimura, Takuma; Al-Nawad, Khaled; Ali, Syed A.; Suzuki, Yoshitaka; Hamid, Halim; Inui, Tomoyuki. Center for Refining & Petrochemicals, Research Institute, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia. Abstracts of Papers, 220th ACS National Meeting, Washington, DC, United States, August 20-24, 2000 (2000), PETR-043. Publisher: American Chemical Society, CODEN: 69FZC3 Journal; Meeting Abstract written in English. AN 2000:797134 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

Catalysts of high surface Co-Saponite (Co/H.S) were prepd. by using the ion-exchange method and the impregnation method. The catalysts were tested for hydrodesulfulization actvity (HDS) with thiophene in a pulse flow reactor and vacuum gas oil in a batch autoclave reactor. Co/H.S (ion-exchange) showed high HDS activity in pulse flow reactor. Further, the HDS activity was increased by the calcination of the saponite up to 600C before the ion-exchange.In the results of batch autoclave reactor, Co/H.S prepd. by using ion-exchange method showed higher HDS and hydrocracking activity than the catalyst prepd. by using impregnation method, The catalytic properties were characterized by using temp.-programmed-redn. (TPR) & -sulfiding (TPS).The TPR & TPS results suggested that there are three different types of Co species. The correlation between the characterization and the catalytic performances is discussed.