

A novel catalyst for heavy oil hydrocracking. Ali, Syed Ahmed; Biswas, Mohammed Elias; Yoneda, Toshikazu; Miura, Tadashi; Hamid, Halim; Iwamatsu, Eiji; Al-Suaibi, Hassan. Center for Refining and Petrochemicals, The Research Institute, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia. *Studies in Surface Science and Catalysis* (1999), 121(*Science and Technology in Catalysis* 1998), 407-410. Publisher: Elsevier Science B.V., CODEN: SSCTDM ISSN: 0167-2991. Journal written in English. CAN 131:288598 AN 1999:630733 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

This paper reports the development of novel hydrocracking catalysts supported on high-surface area saponite clay and pillared with either cobalt or nickel oxide. The catalysts were prepd. by aging the Co or Ni nitrate soln., followed by addn. of saponite, washing, drying and calcination. The catalysts were evaluated for HDS, HDN and hydrocracking activities in a batch autoclave reactor using vacuum gas oil as feedstock. The HDS, HDN and cracking activities of the novel catalysts are comparable to that of a conventional NiW/SiO₂-Al₂O₃ catalyst. The Co catalyst gave better HDS activity while the Ni catalyst showed higher HDN and cracking activity. Calcination before metal loading does not seem to effect the overall performance of the Co catalysts. It should be noted these activities are achieved despite the use only one metal as the active ingredient. The results of this study clearly indicate that the saponite clay based catalysts are a potential alternative to the conventional hydrocracking catalysts.