ABSTRACT

Impregnation of nickel chloride onto the Y-zeolite and their utilization for hydrocracking catalyst have been done. The synthetic Y-zeolite was modified by added of ammonium nitrat 2 M, then these were calcinated for 5 hours at 450°C. Further, the product was impregnated with nickel chloride in ethanol. The concentration of nickel chloride solution were 0.4 %, 0.6%, 0.8%, 1.0%, 1.2% and 1.6%, respectively. The character of Ni/Y-zeolite and H/Y-zeolite were conducted by measuring nickel content and crystallinity. Activity test of catalyst was carried out in hydrocracking process at 350°C and 150-230°C fraction of Minas Crude Oil was used as feed. Finally, the liquid product was analyzed by gas chromatograph-mass spectroscopy. The result of this experiment showed that nickel content onto H/Y zeolite after impregnation process increase. From the measuring of crystallinity, it has been known that relative crystallinity of H/Y-zeolite after impregnation was decrease about 26 – 28%. The test of activity showed that the highest of CHP was 55% (loaded Ni 2.51%). In addition, we got information that Ni/Y were able to convert the C_{13}-C_{23} compound of the feed, to produce the C_{7}-C_{10} as new compound.

Key words: impregnation, nickel chloride, Y-zeolite, hydrocracking