

Abstract

Stable and active hydroisomerisation catalysts have been prepared by impregnating acid pillared clay minerals with hydrogenation–dehydrogenation functions due to palladium. Contact reactions of hexanes on 1 wt.% Pd/alumina pillared acid-activated montmorillonite and 1 wt.% /sulphated zirconium pillared sodium montmorillonite exhibit much better activities and isomerisation electivities compared to those obtained on conventional pillared montmorillonite. The sulphated zirconium pillared sodium montmorillonite catalyst is two to three times more active than the other catalysts. The use of C6 cycoalkanes as reactants is a good indicator to quantify and to determine which parameters governs the reaction pathway either, the metal sites or the acid sites located on the support. Thus, it permits us to determine which mechanism will dominate. We propose for the adsorption step an associative mechanism between the hydrocarbon and the adsorbed hydrogen which leads on metal, on acid or on both metal plus acid catalysts to the formation of $[C_nH_{2n}C_3]$ as intermediate