

### Hydrocracking of FT Wax to Gasoline Range Hydrocarbons

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The FT-synthetic fuels are superior to those obtained from an oil refinery process. FT product consists of 60 – 80 % of the heavy n-paraffin wax (C+ 15, FT wax) and FT wax is considered promising as a petrochemical source material, due to its ready supply from worldwide FT facilities and advantages of FT hydrocarbons. The foremost task is to find or develop a proper catalyst capable of effectively converting FT wax into smaller, but still valuable, hydrocarbons. Preferably, the products would take the form of middle distillate hydrocarbons (diesel, C10–C20 or gasoline, C6–C9).

Zeolite HZSM-5, Beta, Mordenite, H-Y were desilicated and impregnated with Ni. Hydrocracking reaction was studied with Eicosane as a model for FT wax. Catalyst were characterized with XRD, TPD, N<sub>2</sub> sorption etc.,. Catalyst performance was studied in batch reactor with 20 bar pressure and temp of 300 °C. Zeolites performance increased after desilication and subsequent metal impregnation, product stream predominantly consisted of gasoline range hydrocarbons.