

Cracking and Upgrading of Asphalt(AP-5) by Ultrasonic Micro Horn

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A significant amount reaching about 40% of the total crude in distillation is vacuum residue. Processes for getting more value-added products from vacuum residue are called upgrading processes. Almost all of the upgrading and catalytic cracking involved in petroleum residue (i.e. asphalt) processing is done by using large amounts of chemicals and very high temperatures and pressures. To be able to use milder process conditions and reduce the amount of chemicals used in these processes, an ultrasonic process that utilizes acoustic cavitation can be a potential substitute for it. In this study, asphalt was treated by ultrasonic micro horn for different reaction times. Saturates Aromatics Resins Asphaltenes (SARA) analysis, which uses Thin Layer Chromatography (TLC) and Flame Ionization Detector (FID) methods were used to analyze asphalt characteristics and composition.