

Oxidation of asphaltene and application of oxidized asphaltene

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The interest in heavy crude oil is getting increased because of the shortage of conventional oil. Heavy crude oil is Asphaltene is a constituent that cause formation of cokes, corrosion, fouling, catalyst deactivation, and flocculation in pipelines and refinery. Solvent Deasphalting process (SDA) is commercially employed to separate asphaltene from crude oil. Although SDA is well established and efficient technology, it requires large amount of solvent and supercritical state for recovery of solvent. Reducing the amount of solvent can be an issue for consideration with respect to the operational costs to achieve higher efficiency. Dispersion characteristics of asphaltene can be altered by additives (e.g. surfactants). To utilize aggregation property of asphaltene, asphaltene was oxidized and added to bitumen/water/heptane emulsion. Here, we introduce a new method for separation of asphaltene as a pre-treatment process for SDA with partially oxidized asphaltene.