New method for asphaltene separation with oxidized asphaltene

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The importance of heavy crude oil increases with increasing price of light crude oil and development of technique in recovery of heavy crude oil. Also, importance of solvent deasphalting process has been increased SDA (Solvent Deasphalting) process is a refinery process for removing asphaltenes from crude oil/residue to obtain DAO (Deasphaltened Oil). Asphaltene can cause fouling and corrosion in pipe and plant. Asphaltene precipitates in n−heptane solvent. To reduce operating cost of SDA unit, we suggests a new process for pretreatment for SDA. Asphaltene was partitioned and precipitated into water phase by adding specific surfactant to water/diluted crude oil solution. In this study, asphaltene and resin were partially oxidized to give amphiphilicity, and the modified asphaltene/resin was used as a surfactant to partition asphaltene. Finally, the rough efficiency for removal of asphaltene was tested.