

The Impact of Black Rice Ash Nanoparticles on Foam Stability through Foam Scanning in Enhanced Oil Recovery

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Abstract : In order to manage gas mobility in the reservoir, only a small amount of surfactant or polymer is needed because nanoparticles have the potential to improve foam stability. The aim is to enhance foam formation and stability, so it was decided to investigate the foam stability and foam ability of black rice husk ash. Several characterization techniques were used to investigate the properties of black rice husk ash. The best-performing anionic foaming surfactants were combined with black rice husk ash at different concentrations (ppm). Sodium dodecyl benzene sulphonate was used as the anionic surfactant. This study demonstrates the value of black rice husk ash (BRHA), which has a high silica concentration, for foam stability and ability. For the test, black rice husk ash and raw ash were used with SDS (Sodium Dodecyl Sulfate) and SDBS (Sodium dodecyl benzenesulfonate) surfactants under different parameters. Different concentration percentages were utilized to create the foam, and the hydrophobic test and shaking method were applied. The foam scanner was used to observe the behavior of the black rice husk ash foam. The high silica content of black rice husk ash has the potential to improve foam stability, which is favorable and could possibly improve oil recovery.

Keywords : black rice husk ash nanoparticle, surfactant, foam life, foam scanning

Conference Title : ICAPG 2023 : International Conference on Applied Petroleum Geochemistry

Conference Location : Vancouver, Canada

Conference Dates : May 22-23, 2023