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Is it time for In Situ Combustion for EOR in Iranian Heavy Oils?

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ABSTRACT

In Situ Combustion (ISC) is a promising Enhanced Oil Recovery (EOR) technique, but its viability has been difficult to demonstrate in laboratory settings due to challenges in maintaining combustion stability at low air injection rates. This presentation introduces a novel conical physical model designed to minimize heat loss and allow for a more accurate determination of the Extinction Air Flux (EAF). The results indicate that ISC can be sustained at air fluxes as low as 3 sm³/m²·h, with additional experiments suggesting that wet combustion can reduce EAF even further. The findings highlight the potential of ISC for heavy oil recovery and upgrading, particularly in key Iranian reservoirs such as Bibi-Hakimeh, Pazanan, Rag-e-Sefid, and parts of Ahwaz and Marun.

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