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Heavy oil oxidation in the nano-porous medium of synthetic opal

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Abstract

© The Royal Society of Chemistry 2018. Increasing interest to study hydrocarbon behavior in fine porous media, awakened by the shale revolution, requires the application of suitable model porous media. In the current study we prepared nano-porous synthetic opal, profoundly investigated its morphological and textural properties, and studied the kinetics of combustion of heavy oil impregnated into nanopores. Comparison of kinetic parameters of the oil oxidation process for nano-porous and coarse-porous media revealed that nanoconfinement affects the reactivity of oil.

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