

## عنوان مقاله:

ThermoCatalytic In Situ Combustion: Influence of Nanoparticles on Crude Oil Pyrolysis and Oxidation

## محل انتشار:

سومین کنگره ملی مهندسی نفت (سال: 1390)

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## خلاصه مقاله:

With the recent rapid advancements of nanotechnology processes, great interests have been devoted on the application of engineered nanoparticles(NP) as effective additives during thermal oil recovery operations. Therefore, the objective of this paper is to improve the basic understanding of the influence of metallic and non metallic nano particles on the thermal behavior of crude oil. Using three types of NPs with different composition and surface area, thermal analysis and kinetic study were performed to examine the influence of thermo catalytic reactions on the amount and reactivity of fuel. From the results of this study, it can be pointed out NPs have a dual catalytic/surface area effect on crude oil pyrolysis and combustion. Kinetic studies show a significant reduction of activation energies of crude oil oxidation. Also the amount of fuel deposited and the rate of fuel deposition increased in the presence of NPs. Therefore NPs consistently increase the amount and rate of fuel deposition. This allows the application of in situ combustion for enhanced recovery of medium and also lighter crude oils

## کلمات کلیدی:

Enhanced oil recovery- Nanoparticles- Thermocatalytic in situ combustion- Fuel formation

## لینک ثابت مقاله در پایگاه سیویلیکا:

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