

## عنوان مقاله:

Anaerobic biodegradation of aliphatic compounds in oily sludge under biostimulating conditions to determine sludge optimum composition

## محل انتشار:

چهارمین کنفرانس بین المللی نوآوری های اخیر در شیمی و مهندسی شیمی (سال: 1396)

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## خلاصه مقاله:

Aliphatic hydrocarbons are one of the most important oily sludge compounds that have become frequently encountered as environmental pollutants. Bioremediation technologies are also one of the most popular techniques to treat many petroleum contaminating compounds. Due to simplicity, lack of oxygen supply and very low amount of biomass production, anaerobic treatment in this study was selected as a bioremediating method to reduce aliphatic hydrocarbons of oily sludge. Furthermore in this experiment cowdung was also selected as a biostimulating factor. The experiment was applied for six compositions of oily sludge, cowdung and water for about 150 days. After this time period, the percentages of aliphatic compounds and TPH (total petroleum hydrocarbons) reduction were measured and compared with each other. The results displayed significant relations between concentrations of aliphatic compounds and percentage of reduction because contaminants concentration affects directly microbial activity and therefore best degradations were observed in compositions with 3 to 10% oily sludge. High microbial populations and cowdung nutrients richness had most important roles in contaminants deterioration. Also in this research the best composition of oily sludge in an anaerobic biostimulating process to reach at least 90% reduction was proposed between 10 to 15%.

## کلمات کلیدی:

Oily sludge, Aliphatic hydrocarbons, Bioremediation, Biostimulation

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