

SOIL WASHING OF GASOLINE CONTAMINATED SOILS

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Iran is in a great prospect of being polluted, due to owning almost 8.58% of the world's oil resources, production of more than 16 million tons of petrochemicals, having over 20,000 km of pipelines, 8,000 gas stations, and 10,000 oil and gas transferring vehicles. Also, due to high percentage of land allocation to the oil industry in Iran, contamination of the underneath soil to hydrocarbons is quite imminent. For example, studies have shown that the contaminated areas around Tehran oil refinery are estimated to be 36 km² and approximately 6 meters deep. The same pollution (in a smaller scale) could be also seen at other oil sites such as gas stations.

Soil washing is an innovative technology based on the reduction of volume of the soil which needs to be cleaned, thus reducing cost and time. In this study, attempts have been made to perform experiments to wash out the hydrocarbon contaminants (i.e. gasoline due to its wide usage and diverse hazardous characteristics) from polluted soils using two surfactants (saponin and sodium dodecyl sulfate (SDS)) under different temperature, time, pH and salinity conditions. Hence the method could be used to achieve the optimum treatment conditions to be applied for removal of hydrocarbons from contaminated soils.

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