

## Source Identification of Hydrocarbons in Surface Sediments of Mangrove Forests of Khamir Port

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### Abstract

The Persian Gulf is one of the most important water bodies in the world that has been heavily developed for crude oil production and exportation. Considering the fact that hydrocarbons may cause adverse impacts on the aquatic and marginal life, the monitoring of hydrocarbons in marine sediments has long been considered.

In the present study, the concentrations and sources of aliphatic hydrocarbon (*n*-alkanes) and polycyclic aromatic hydrocarbons (PAHs) were determined in seven surface sediments collected from mangrove forest of Khamir Port. After soxhlet extraction with dichloromethane, samples were analyzed with GC-MS. Twenty-three compounds of PAHs and several *n*-alkanes (*n*-C<sub>14</sub>-*n*-C<sub>33</sub>) were analyzed. Total concentrations of *n*-alkanes and PAHs were 1644±354 µg/g (dry weight) and 1394±503 ng/g (dry weight), respectively. The mangrove sediments had higher percentages of lower molecular weight hydrocarbons. The diagnostic ratios were used for source identification of hydrocarbons. Results showed that the main source of hydrocarbons is petroleum and petroleum products.

Keywords: Grey mangrove, Hydrocarbon, Khamir Port, Oil pollution, *n*-alkanes, PAHs.

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