

Degradation of Hydrocarbons by Surfactants and Biosurfactants

Authors : Samira Ferhat, Redha Alouaoui, Leila Trifi, Abdelmalek Badis

Abstract : The objective of this work is the use of natural surfactant (biosurfactant) and synthetic (sodium dodecyl sulfate and tween 80) for environmental application. In fact the solubility of the polycyclic hydrocarbon (naphthalene) and the desorption of the heavy metals in the presence of surfactants. The microorganisms selected in this work are bacterial strain (*Bacillus licheniformis*) for the production of biosurfactant for use in this study. In the first part of this study, we evaluated the effectiveness of surfactants solubilization certain hydrocarbons few soluble in water such as polyaromatic (case naphthalene). Tests have shown that from the critical micelle concentration, decontamination is performed. The second part presents the results on the desorption of heavy metals (for copper) by the three surfactants, using concentrations above the critical micelle concentration. The comparison between the desorption of copper by the three surfactants, it is shown that the biosurfactant is more effective than tween 80 and sodium dodecyl sulfate.

Keywords : surfactants, biosurfactant, naphthalene, copper, critical micelle concentration, solubilization, desorption

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