

## Bioremediation of Sewage Sludge Contaminated with Fluorene Using a Lipopeptide Biosurfactant

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**Abstract :** The disposal and the treatment of sewage sludge is an expensive and environmentally complex problem. In this work, a lipopeptide biosurfactant extracted from corn steep liquor was used as ecofriendly and cost-competitive alternative for the mobilization and bioremediation of fluorene in sewage sludge. Results have demonstrated that this biosurfactant has the capability to mobilize fluorene to the aqueous phase, reducing the amount of fluorene in the sewage sludge from 484.4 mg/Kg up to 413.7 mg/Kg and 196.0 mg/Kg after 1 and 27 days respectively. Furthermore, once the fluorene was extracted the lipopeptide biosurfactant contained in the aqueous phase allowed the bio-degradation, up to 40.5 % of the initial concentration of this polycyclic aromatic hydrocarbon.

**Keywords :** fluorene, lipopeptide biosurfactant, mobilization, sewage sludge

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