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Editorial

Bioremedation and its Uses

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EDITORIAL

Bioremediation is a field of biotechnology that involves the removal of contaminants, pollutants, and toxins from soil, water, and other environments using living organisms such as microorganisms and bacteria. Oil spills and contaminated groundwater are cleaned up via bioremediation.

Because petroleum hydrocarbons are hazardous to all forms of life, pollution generated by petroleum is a major concern. For the remediation of these contaminated sites, bio-based, environmentally friendly solutions are favoured.

Bioremediation is a process used to treat contaminated media, including water, soil and subsurface material, by altering environmental conditions to stimulate growth of microorganisms and degrade the target pollutants. Biological treatment, bioremediation, is a similar approach used to treat wastes including wastewater, industrial waste and solid waste. Some examples of bioremediation related technologies are phytoremediation, bioventing, bioattenuation, biosparging, composting (biopiles and windrows), and land farming. Some of the most common types of bioremediation are microbial bioremediation, phytoremediation, and mycoremediation. Bioremediation is the use of living organisms, primarily microorganisms, to degrade environmental contaminants into less toxic forms. Bioremediation is limited to those compounds that are biodegradable. For example, heavy metals such as cadmium and lead are not readily absorbed or captured by microorganisms.

Bioremediation is a method of treating contaminated media, such as water, soil, and subterranean material, by adjusting environmental conditions to encourage microorganism growth and degradation of the target pollutants. Oil spills, soils contaminated with acidic mining drainage, underground pipe breaches, and crime scene cleanups are all examples of bioremediation in action.

Contaminants can be eliminated or decreased using a variety of in-situ and ex-situ bioremediation procedures. Bioremediation techniques are classed according to where they are used. Non-destructive and cost-effective in-situ treatments treat contaminated environments. Ex-situ treatments, on the other hand, frequently necessitate the excavation of the polluted site, which raises expenditures.

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