

## **Bioreactors Land-Fills (BRLFs) for Waste Treatment. (1) Its Main Characteristics and Advantages.**

### **ABSTRACT**

Bio-Reactors Landfills (BRLFs) represent important advancements over the classical Dry Land-Fills (DLFs) which are oldest technology for disposal of solid waste; specially Municipal Solid Waste (MSW). The combined use of laboratory experimental work and mathematical/ computer modeling represents the best way for scaling-up to the design of commercial units and optimization of design and operation. This is the first part of a series of papers that introduces these relatively modern BRLFs ; its main characteristics and the basic principles for its mathematical modeling using chemical reaction engineering rules in a rigorous manner. It also gives a couple of commercial cases to materialize the principles presented in the paper.

**Keyword:** Bio-Reactors Landfills, Bio-Gas, Methane, Biomass, Solid Mass Degradation, Leachate Recycling