



Review of Applying Anaerobic Fluidized Bed Reactor (AFBR) in Domestic Sewage treatment

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ABSTRACT

The purpose of this review is to present a study on Anaerobic Fluidized Bed Reactor (AFBR) in Domestic sewage treatment and how to use this type of treatment in several applications. So it is a simple description of the fluidized reactor, phenomena of fluidization actions, and the advantage of using the biomass as a source of power.

Keywords:

Fluidized Bed Reactor, COD, Biological treatment, UASB.

Introduction: Fluidization is a mechanism in which, as gas is blown vertically upward into it, a bed of relatively dense solids particles takes on some of the characteristics of a fluid. The injection of gas (gas-solid systems) via a gas distributor from the bottom of a column containing solid particles will be causing the particles to extend and vibrate to offset the drag force exerted by the gas stream on them. When the velocity of the gas is raised, a stage arrives It is said that The weight of the particles matches the drag force. and that the bed is fluidized.

Every year, trillions of tons of CO₂ gas escape into the atmosphere from the utilization of Fossil-based energy. Thus, the concentration of CO₂ in the atmosphere must be decreased. To protect against the impact of human interaction with the environment to a lower degree. The estimation of fossil fuel resources raises additional challenges; There is a role for fossil fuels. Crucial position in the world's market for

energy. However, stocks of this global energy supply will soon be depleted.

Fluidized Description: The most common fluidized reactor bed consists of a high-altitude bed whose lower portion, via a delivery mechanism, introduces water at a sufficiently high velocity to fluidize or extend the bed. In nature, anoxic and anaerobic systems are simpler. In comparison, aerobic systems include aeration. In the effluent recirculation line, this aeration is usually done, resulting in a 2-phase system: solid and liquid, as shown in Figure 1. The convenience of the injection of air through a recirculation line means that biofilm is not susceptible to abrasion, resulting in effluent with a low concentration of suspended solids. The process is called "expanded bed" or "fluidized bed," depending on the expansion degree of the bed. With respect to the fixed bed reactor, the transition between the two systems varies between 50 to 100 percent expansion.