

## Anaerobic Reactors Biological Wastewater Treatment Volume 4 By Carlos Augusto De Lemos Chernicharo 2007 01 05

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### Anaerobic Reactors Biological Wastewater Treatment

Anaerobic treatments on wastewater are normally implemented when treating more concentrated wastewater. The anaerobic sludge contains various groups of micro organisms that work together to eventually convert organic material to biogas via hydrolysis and acidification. Biogas typically consists of 70% methane (CH 4) and 30% carbon dioxide (CO 2) with residual fractions of other gases (e.g. H 2 and H 2 S).

### Anaerobic Biological Wastewater Treatment | EMIS

Anaerobic Reactors is the fourth volume in the Biological Wastewater Treatment series. The fundamentals of anaerobic treatment are presented in detail, including its applicability, microbiology, biochemistry and main reactor configurations.

### Anaerobic Reactors: Biological Wastewater Treatment Volume ...

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### Anaerobic Reactors | IWA Publishing

giving a state-of-the-art presentation of the science and technology of biological wastewater treatment. Titles in the Biological Wastewater Treatment series are: Volume 1: Wastewater Characteristics, Treatment and Disposal Volume 2: Basic Principles of Wastewater Treatment Volume 3: Waste Stabilisation Ponds Volume 4: Anaerobic Reactors Volume ...

### Anaerobic Reactors - IWA Publishing

Anaerobic wastewater treatment is a biological process where microorganisms degrade organic contaminants in the absence of oxygen. In a basic anaerobic treatment cycle, wastewater enters a bioreactor receptacle. The bioreactor contains a thick, semi-solid substance known as sludge, which is comprised of anaerobic bacteria and other microorganisms.

### What Is Anaerobic Wastewater Treatment and How Does It Work?

Biological wastewater treatment (anaerobic and aerobic digestion reactors) takes advantage of the ability of certain microorganisms (including bacteria) to assimilate organic matter and nutrients dissolved in the water for their own growth, thus removing soluble components in the water. Soluble organic matter is assimilated by microorganisms as a carbon source.

### Aerobic digestion reactors for biological wastewater treatment

Anaerobic treatment can be used for production of biogas, and removal of organics. Intermittent sequencing batch reactor is ideal for slaughterhouse waste treatment. Aerobic granulation technology can be used to remove N and P in SBRs. Sequential anaerobic-aerobic treatment can produce biogas and remove C, N and P.

### Biological wastewater treatment (anaerobic-aerobic ...

Anaerobic biological treatment Turn wastewater and/or waste into power Anaerobic treatment systems are based on a biological process operated and controlled under anaerobic conditions that effectively treats COD, BOD and VSS while producing biogas and very little biomass (without oxygen).

### Anaerobic biological treatment - Nijhuis Industries

Biological wastewater treatment is designed to degrade pollutants dissolved in effluents by the action of microorganisms. The microorganisms utilize these substances to live and reproduce. Pollutants are used as nutrients. A prerequisite for such degradation activity, however, is that the pollutants are soluble in water and nontoxic.

### Biological Wastewater Treatment - an overview ...

SBR reactors treat wastewater such as sewage or output from anaerobic digesters or mechanical biological treatment facilities in batches. Oxygen is bubbled through the mixture of wastewater and activated sludge to reduce the organic matter (measured as biochemical oxygen demand (BOD) and chemical oxygen demand (COD)). The treated effluent may be suitable for discharge to surface waters or possibly for use on land.

### Sequencing batch reactor - Wikipedia

The proposed biological anaerobic treatment process appears to be promising wastewater treatment method for industrial wastewater with respect to the reduction in BOD COD, pH and increase in the TS. □ At 48 hrs COD, BOD, pH are reduced and TS was increased hence the optimum HRT of the Baffle wall Reactor was found at 48 hrs. □ The efficiency of the Baffle wall Reactor is about 43%. □ Hence the sugar industry wastewater can be effectively treated by Baffle wall Reactor.

### TREATMENT OF SUGAR INDUSTRY WASTEWATER BY ANAEROBIC BAFFLE ...

Start-up experiments were carried out using a 5-liter acrylic aerobic reactor and a 4-liter flask anaerobic reactor containing activated sludge taken from De La Salle University (DLSU) wastewater treatment plant as a source of inoculum.

### Biological Nitrogen and COD Removal of Nutrient-Rich ...

Anaerobic treatment is a slow process and can take up to 3 months, which may be due to septic decomposition. Unpleasant odours may occur in this wastewater treatment process, which Veolia resolves with its sewage treatment processes that include solutions for physical/chemical deodorisation processes and green biological control.

### Aerobic and Anaerobic Biological Processes

Typically broken out into three main categories, biological wastewater treatment can be: aerobic, when microorganisms require oxygen to break down organic matter to carbon dioxide and microbial biomass anaerobic, when microorganisms do not require oxygen to break down organic matter, often forming methane, carbon dioxide, and excess biomass

### What is a Biological Wastewater Treatment System and How ...

Lagoons and septic tanks may use anaerobic processes, but the best-known anaerobic treatment is anaerobic digestion, which is used for treating effluent from food and beverage manufacturing, as well as municipal wastewater, chemical effluent, and agricultural waste.

### What Is Biological Wastewater Treatment? | Fluence

Anaerobic digestion is used as part of the process to treat biodegradable waste and sewage sludge. As part of an integrated waste management system, anaerobic digestion reduces the emission of landfill gas into the atmosphere. Anaerobic digesters can also be fed with purpose-grown energy crops, such as maize.

### Anaerobic digestion - Wikipedia

Compared to aerobic wastewater treatment, the low-rate reactors produce approximately 60% less sludge. This, in combination with the biosolids drying, has drastically lowered sludge disposal costs and saved valuable landfill space.

### Wastewater Treatment Sludge Mixing Improvements Raise ...

Anaerobic Treatment is an energy-efficient process in which bacteria transforms organic waste in the wastewater into biogas in the absence of oxygen. To achieve this oxygen-free environment, the entry of air into anaerobic tanks is prevented, typically by a gastight cover. Upflow Anaerobic Sludge Blanket (UASB)

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