

Aerobic and anaerobic sewage biodegradable processes: the gap analysis

ABSTRACT

Wastewater has become a significant risk and danger to both physical environment and human/animal life due to inefficient management processes. There are many technologies applied in wastewater management. Among them biological treatment methods are widely used as they are cost effective, highly efficient, simple in application, less in chemical usage, less energy consuming and environment friendly. This review covers many aspects of biological wastewater treatment through aerobic and anaerobic methods with special attention on study on Upflow Anaerobic Sludge Blanket (UASB), the Expanded Granular Sludge Blanket (EGSB) and Upflow Anaerobic Sludge Blanket-aerobic digester (UASB-aerobic digester). We provide a comprehensive account on the literature on aerobic and anaerobic systems of sewage treatment with UASB, EGSB and UASB-aerobic digester reactors, a comparative analysis on the treatment efficiency of each method, outlining the merits, demerits and constraints. An appraisal to the combination of aerobic and anaerobic systems, specifically the UASB-Aerobic digester has also been given.

Keyword: Sewage; Aerobic; Anaerobic; Aerobic-anaerobic system; UASB-AS