

## Study Biogas Produced by Strain Archaea Methanotrix soehngenii in Different Biodigesters UASB in Treating Brewery Effluent in Brazil

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**Abstract :** This work aimed at the comparative study of the quality and quantity of biogas produced by archaea strain Methanotrix soehngenii operating in different versions of anaerobic digesters upflow sludge bed in the brewery wastewater treatment in Brazil in the tropical region. Four types of UASB digesters were studied made of different geometries and materials which are: a UASB IC steel 20 meters high; a circular UASB steel 6 meters high; an UASB reinforced concrete lined with geomembrane PEAB with 6 meters high; and finally a UASB plug flow comprising two UASB in serious rotomolded HDPE 6 meters high. Observed clearly that the biogas produced in the digester UASB steel H<sub>2</sub>S concentrations had values lower than the HDPE. With respect to efficiency in short time, the UASB IC showed the best results to absorb overloads, as the UASB circular steel showed an efficiency of 90% removal of the organic load. The UASB system plug flow in HDPE showed the lowest cost of deployment, and its efficiency in removing the organic load was 80%.

**Keywords :** biogas, achaeas, UASB, Brewery effluent

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