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## ANAEROBIC TREATMENT OF HIGH STRENGTH ORGANIC WASTEWATER FROM VTU CANTEEN USING HYBRID UPFLOW ANAEROBIC SLUDGE BLANKET (HUASB) WITH PLEATED PVC RINGS

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**ABSTRACT:** Anaerobic treatment is generally used around the world as a Biochemical treatment for both domestic and industrial wastewater. The two main advantages of anaerobic over aerobic treatment is used for biogas production, which can be used as alternate fuel, and the lower rate of biomass production, which results in lower operation and maintenance costs for the plant. For the substrate, the processes included in the model are dispersion, advection and degradation of the organic matter in the substrate. The rate of reaction for the microorganisms includes the growth and decay of the microorganisms. The main objective of this project is to treat the high strength organic wastewater using hybrid up flow anaerobic sludge blanket (HUASB) reactor. In particular, the Physico-chemical characteristics of the high strength organic wastewater such as pH, Alkalinity, Total suspended solids (TSS), Biochemical oxygen demand (BOD), Total Chemical Oxygen Demand (TCOD), Soluble Chemical Oxygen Demand (SCOD), Volatile fatty acids (VFA) and Methane production is tested in the college laboratory itself and based on the output characteristics of sample, the amount of methane generation from the sample to be determined. The HUSAB is fabricated and wastewater is fed through the inlet port. The HUASB will be operated at different organic loading rate (OLR) and the maximum methane generation achieving rate will be determined while treating the high strength organic waste wastewater. The treated wastewater parameters will be monitored and the level of improvement of quality from raw effluent to treated effluent and maximum methane production will be determined. It will be made sure that the treated wastewater parameters shall meet the effluent discharge quality standards.

**Keywords:** Organic Loading Rate (OLR), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Chemical Oxygen Demand (SCOD)

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