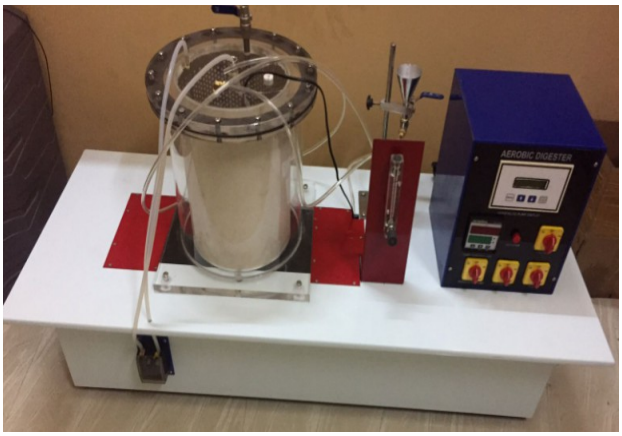

Introduction:-

- The continuous activated sludge process has been successfully employed in public health engineering installations for nearly a century. The Armfield Aerobic Digester is a benchtop unit designed as a comprehensive study facility of this process.A synthetic waste water feed may be used to gain a working knowledge of the operational parameters and purification efficiencies.
- Waste water is drawn from a floor-standing feed tank (not supplied) by a DC motor-driven peristaltic pump. Rotational speed – and thus flow rate – is accurately set by a ten-turn potentiometer. The pump delivers the feed to the reactor vessel through a transparent lid. Air is supplied at a measured rate by a small compressor, and discharges into the base of the reactor via a spider-arm dispenser. This design prevents blockages and produces sufficient bubbling for stirring and reaction. The liquid level in the reactor is maintained at a constant value of five to ten litres, by an adjustable overflow device connected to the outer annular chamber of the vessel. Discharge is by gravity to a floor-standing product tank (not supplied).The reactor temperature is maintained by a three-term controller, which varies power to an immersion heater within the vessel. Any temperature between ambient and +35°C may be selected, the best conditions being a few degrees above the diurnal maximum in the user's laboratory.Dissolved oxygen and pH probes and meters are included.The reactor lid contains a gas exit port, suitable for sampling the gases for subsequent analysis

Features:

- Small Scales bench mounted design
- Provides demonstration of continuous activated sludge process

Scope of learning :

- Acclimation of a completely mixed biological reactor
- Measurement of COD and MLSS changes as criteria of performance
- Establishing the stoichiometry and kinetics of aerobic processes
- Gas/liquid mass transfer
- Residence time distributions
- 100% scale-up to industrial requirements

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.

- Studying the effect on effluent quality of:
- Inflow substrate concentration ('loading rate')
- Liquid flow rate and reactor volume ('detention time')
- Air flow rate
- Temperature
- pH stability
- Nutrient deficiency

Technical Specifications :

- Feed pump: 24V DC, peristaltic, 0-30rpm corresponding to 0-40 L/day
- Air compressor: 120V/240V, 0-3.0 L/min (STP)
- Reactor vessel: 10L maximum capacity
- pH meter range: 0.00 to 14.00
- DO meter range: 0-100% saturation, resolution: 2%
- Reactor heater: Toughened glass, electrical immersion 200W
- Temperature controller: 3-term PID (temperature limit set at 35°C)

Utility Required :

- Electrical supply : 220-240V /1 ph / 50Hz
- Plastic feed and product tanks – capacity typically 30-50l, floor standing (not supplied)
- Synthetic waste water (not supplied)

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.