Memfill's Indigenous HyBRIT Sewage Treatment Technology

Alagappa University
Industry and Institute Collaboration

> Sewage Treatment
> Organic Waste Water
> Biological / Microbial Waste Water
> Dairy Waste Water

Hollow Fibers | MBR Module | Plants

A great choice for industrial water/wastewater treatment and commercial applications

MEMFILL TECH PRIVATE LIMITED

Manufacturer of Indigenous Hollow Fiber Membranes/Cartridges & Turnkey Solutions Provider

MEMFILL
Hollow Fibers. Smarter

We expertise in manufacturing a wide range of hollow fiber membranes which can be utilized to help various businesses meeting customers sustainability goals in the water & wastewater treatment

Entrepreneur Incubator Seed fund Won From | Department of Science & Technology (DST)

Supported By DST, Government of India

Tiruchirappalli Regional Engineering College
Science and Technology Enterpreneurs Park TREC-STEP

www.memfill.in

MEMFILL's HyBRIT Process contains hybrid hollow fiber membranes which is made up of non-oven fabric with hybrid-PVDF (h-PVDF) coated on it. The HyBRIT performs solid-liquid separation in the biochemical pool, replacing the secondary and ternary filters which reduce the foot-print. The high-efficiency retention effect of the membrane allows the nitrifying bacteria to be completely retained in the bioreactor, which results in:

a) high nitrogen removal

b) efficient effluent disinfectants

c) efficient removal from effluent including COD, BOD and suspended solids

d) low sludge production

Objective

MTPL envisages to stand out in providing tailor-made hollow fibre membrane process and turnkey solutions employing Hybrid Bio Reactor Immersed Technology (HyBRIT) to the customers who can adapt our indigenous advanced STP technology and energy efficient plant to markedly save the CAPEX and OPEX.

Challenges In STP

ABOUT HyBRIT Technology

Membrane Bio Reactor (MBR) is a combination of 'biological process' and 'membrane filtration system' using hollow fibre membranes filtrate the sewage to reusable and bacteria-free quality water when compared with other conventional sewage treatment processes. However, the major drawback impeding wider application of MBRs is membrane fouling, which significantly reduces membrane performance and lifespan, resulting in a significant increase in maintenance and operating costs. Finding sustainable membrane fouling mitigation strategies in MBRs has been one of the main concerns over the last two decades. To overcome the bottlenecks, AIMS-MTPL indigenously designed a HyBRIT sewage treatment system by combining MBBR (Moving Bed Biofilm Reactor) or FBBR (Fixed Bed Biofilm Reactor) and MBR (Membrane Bio Reactor) processes together, which could reduce not only the fouling but also increasing the performance and sustainability of the hollow fibre membrane.

PROCESS METHODOLOGY

We, AIMS–MTPL, assure our valued customers to efficiently operate our HyBRIT process through a proper standard operating procedure (SOP), which has significant impact in the following aspects:

1. HyBRIT is an 'eco-friendly' process and easy operation Plant.
2. In HyBRIT, initially, the biological process takes advantage of natural cellular reaction to decompose the waste and also the Medias are added to increase specific microorganisms into

the wastewater and then these microorganisms effectively break down and consume the slurry compounds they contact. Further, the microorganisms can turn them into simpler substances, which can then get effectively filtered out through MBR Filteration system to reduce all parameters less than the required compliance of Centre for Pollution Control Board (CPCB) norms.

3. HyBRIT process ensures the product quality, reliable, continuous and sustainable performance in treating the sewage water. Customised HyBRIT plants remove the require % nitrogen, BOD and COD reduction and odourless permeate water complying CPCB norms, with affordable treatment cost of treating 100% waste water for reusable.

ADVANTAGES OF HYBRIT STP/EPT process.

HyBRIT process helps to reduce the CAPEX and OPEX

a. Aside preventing the fouling, our hybrid process reduces the total energy cost by reducing the number of pumps required in the plant design
b. HyBRIT plant design requires a smaller foot print hence less civil works when compared to conventional MBBR system
c. Adequate capacity usage of the Air Blowers saves Capex
d. Minimal Sludge generation
e. Elimination of the following from the process system
    i. Sand Filters (SF)
    ii. Activated Carbon Filter (ACF)
    iii. Dosing Pump
    iv. Screw Pumps
f. Ease of operation with auto backwashing in the MBR filters
g. Avoidance of commissioning of additional UF filtration system after MBBR / FBBR treatment
h. Considerably reduces the cost in the operation and maintenance

4. More importantly, above all salient features, reusable quality treated water can be gained using our HyBRIT process which is sustainably better than the treated water of other STP process.

Conclusion

Our cutting-edge and indigenous STP technology, HyBRIT, helps to markedly reducing the rate of fouling in the hollow fibre membrane process operating at low energy consumption, therefore, low CAPEX and OPEX but with quality permeate reusable water.

MTPL will confirm that ZERO WASTE OF TREATED WATER Concept (ZWTWC) subject to O & M as per SOP.

Our HyBRIT Products (Customised and Skit mounted Plants) for waste water treatments:

HyBRIT – STP /ETP

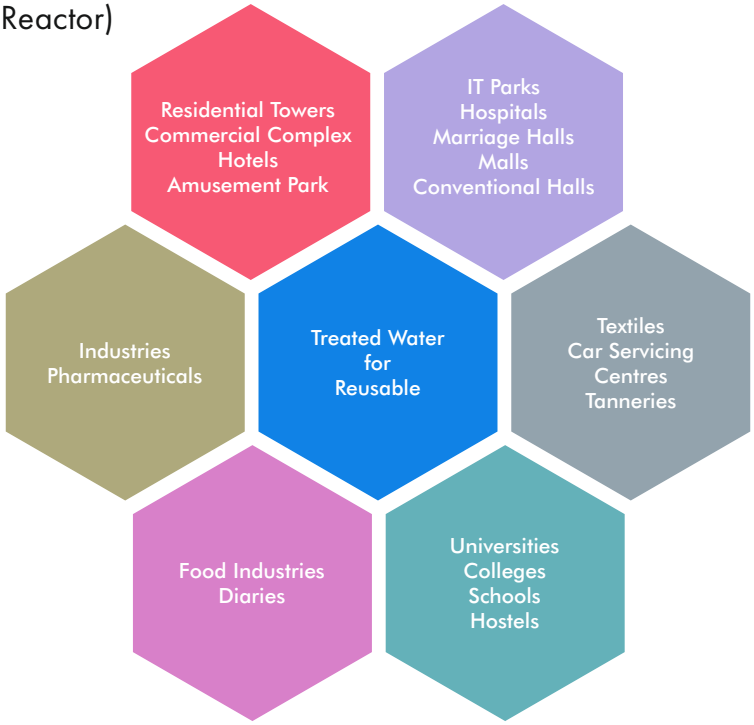
We also design and execute Independent:

STP/ETP

- MBR (Membrane Bio Reactor)
- MBBR/FBBR (Moving Bed Bio film Reactor / Fixed Bed Bio film Reactor)
- ECP (Electro coagulation Process)
- SAFF (Submerged Aerobic Fixed Film Reaction)
- UASB (Up flow anaerobic sludge blanket Reactor)

WTP

- Reverse Osmosis Plant (RO Plant)
- Iron Removal Plant (IRP)
- Ultra Filtration Plant (UFP)
- Nano Filtration (NF)
- Softener
- Iron Removal (IR)
- Silica Removal (SR)
- Desalination Plant (DP)
- Hydrogen Plant (H2NEXT)



Sales :

- Membrane for MBR, UF, RO
- FRP – Customised Tank
- Air Blowers
- Filters
- Pumps
- Media
- Flow Meters
- Electrical Solenoid Valves

HyBRIT STP Plant Inaugurated by Dr.Ravi, Vice Chancellor at Alagappa University

We also undertake

- Operation and Maintenance
- Design and construction of Civil Works
- Installation of IOT based Operating System
- Revamping of existing plant

Save Environment, Save Green, Save Planent

To become a trained and approved MTPL certified professional and be part of our network:
you are welcome to reach us at the below addresses

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