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## STP Systems

- Indigenous Hollow Fiber Membrane ●
- Improved Productivity ●
- Smaller Foot Print ●
- Energy Saving ●
- Assured Reliability ●



Memfill Smart Membrane Advanced Recovering Technology  
**SEWAGE TREATMENT PLANT**



## About Us

Memfill Tech Pvt. Ltd. (MTPL), located in Karaikudi, Tamilnadu registered under MSME, Government of India, run by Scientist / Technopreneurs, Dr. Swaminathan and Dr. V. Vaithianathan.

MTPL have together set a number of noteworthy and ongoing projects in the field of wastewater treatment, particularly in the areas of Effluent Treatment Plant (ETP) and Sewage Treatment Plant (STP).

## Objective

MTPL envisages in standing out in providing tailor - made hollow fibre membrane process and turnkey solutions employing **Memfill Sewage Membrane Advanced Recovering Technology**. Memfill Smart to the customers who can adopt our advanced STP technology and energy efficient plants to markedly save the CAPEX and OPEX.

## Challenges In STP

### **Memfill Smart STP for it:**

Membrane Bio Reactor (MBR) is a combination of 'biological process' and 'membrane filtration system' using hollow fibre membranes. These membranes filter the sewage to reusable and bacteria-free quality water when compared with other conventional sewage treatment process. However, the major drawback impeding wider application of MBRs is membrane fouling, which significantly reduces membranes performance and lifespan, resulting in an appreciable increase in maintenance and operating costs. Finding sustainable membrane fouling mitigation strategies in MBRs has been one of the main concern over the last two decades.

To overcome the bottlenecks, **MTPL** indigenously designed a **Memfill Smart** sewage treatment system by combining **MBBR** (Moving Bed Bio film Reactor) or **FBBR** (Fixed Bed Biofilm Reactor) and **MBR** (Membrane Bio Reactor) processes together, which would reduce not only the fouling but also increase the performance and sustainability of the hollow fibre membrane.



## About Memfil Smart STP

MTPL assure our valued customers to efficiently operate our **Memfill Smart** process through a proper STANDARD OPERATING PROCEDURE (SOP), which has significant impact in the following aspects:

1. **Memfill Smart** is an eco-friendly process with easy operations.
2. In **Memfill Smart** initially, the biological process takes advantage of natural cellular reaction to decompose the waste and also Media are added to increase specific microorganisms can turn them into simpler substances, which can then get effectively filtered out through MBR Filtration system to reduce all parameters less than the required norms of Centre for Pollution Control Board (CPCB).
3. **Memfill Smart** process ensures the product quality, reliable, continuous and sustainable performance in treating the sewage water. Customized Memfill Smart plants remove the required % of nitrogen and drastically reduce the level of BOD and COD and also give odourless permeate water complying with CPCB norms, with affordable treatment cost and also treating 100% wastewater for reuse.

## Advantages of MEMFILL SMART STP/ETP Process

**Memfill Smart** process helps to reduce the CAPEX and OPEX

- ↪ Beside preventing the fouling, our hybrid process reduces the total energy cost by reducing the number of pumps required in the plant design.
- ↪ **Memfill Smart** Plant design requires a smaller foot print hence less civil works when compared to conventional MBBR system.
- ↪ Adequate capacity usage of the Air Blower saves Capex and Opex.
- ↪ Minimal sludge generation
- ↪ Elimination of the following from the process system
  - Sand Filters (SF)
  - Activated Carbon Filter (ACF)
  - Dosing Pump
  - Screw Pumps
- ↪ Ease of operation with auto back washing in the MBR membranes
- ↪ Avoidance of installation of additional UF filtration system post MBBR/FBBR treatment.
- ↪ Considerable reduction in the cost of operation and maintenance.

More importantly, besides the above salient features, reusable quality treated water can be procured using our **Memfill Smart** process which is sustainably better than the treated water of the STP process.

## IOT

We integrate the said process with **IOT** Enabled operating system (provided interfacing facilities for **SCADA**). as an optional feature at an additional cost, along with flow meters, monitors for BOD, COD, TDS, TSS and DO for sensing the process & operation remotely. We also provide online guidelines to attend the service with the available/limited manpower at the site for keeping the plant uptime ensuring continuous performance. Our SOP with codes will support and guide the operators to troubleshoot the issues immediately. Our **IOT** will reduce the manpower attention and frequent intervention into the operation as the entire system will be automated.

## Advantages

**Treated water of Memfill Smart STP:** Treated water can be used for flushing, washing, floor washing, gardening and other external applications. We are also ready to provide treated water for potable after RO treatment if required.



## Our Products

Memfill Smart - STP/ETP (Customised and Skid mounted plants / packed MBR) for wastewater treatments.

We also design and execute independent.

### WASTE WATER TREATMENT PLANTS (STP/ETP)

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

### WATER TREATMENT PLANTS

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

### COMPONENT SALES

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

### We also undertake

- Operation and Maintenance
- Design and construction of Civil Works
- Installation of IOT Enabled Operating System
- Revamping of Existing Plants

**We focus on the area:**



**Warranty for Membrane:** In Singapore, MBR system has been used for the treatment of Sewage in Large scale (MLDs) for more than decades. The replacement of Membrane has been taking place after 7 years due to proper backwashing and cleaning. We do design at par with it and our warranty is for 5 years towards performance of Membrane subject to the condition of SOP and IOT enabled Operation.



**Save Environment, Save Green, Save Planet**

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