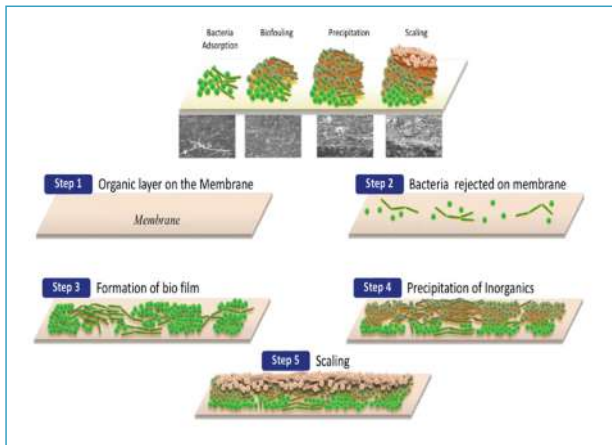# BioFilmPro®
Breakthrough Biofouling Treatment

Biofouling of pipes and membranes reduces productivity of water treatment plants. Over a period of time, this biofouling results in increased power consumption, resulting in inefficiency of the system to perform. Aquatech's **BioFilmPro®** is a comprehensive, groundbreaking solution which effectively eliminates biofouling by integrating electrical deactivation of bacteria and real-time sensing of biofilm formation to control biocide dosing.

BioFilmPro® operates through two integrated mechanisms: **electrical bacteria "deactivation" and sensor-based biocide injection.**

The former works by sending a weak AC current to bacteria in the water and disables biofilm formation, while the latter injects biocide based on real-time electrochemical activity to sufficiently sanitize the membrane. This technology can therefore enhance overall plant efficiency and minimize biocide use. This system also reduces the need for frequent chemical cleaning of membranes.

Formation of Biofilm on Membranes

After Biofilm Control with BioFilmPro®
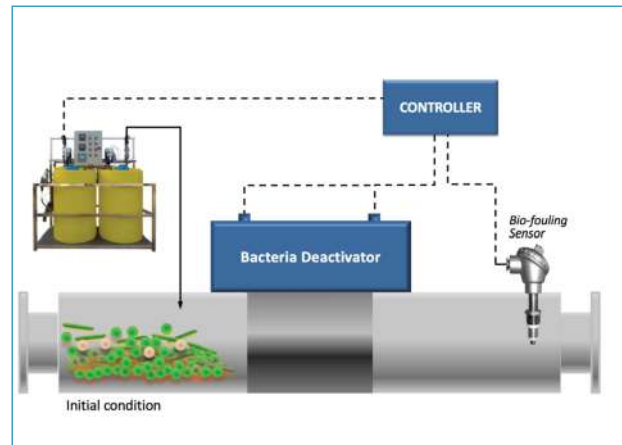
Operation

Bacteria Deactivator
- The system introduces weak AC current, causing electro disruption of bacterial cells
- Bacteria now cannot grow and form colonies underneath biofilm

Biofilm Sensor
- Sensor detects electrical current (350-1200 mV) and accordingly generates 4-20 mA signal to control biocide injection
- Biological activity is detected by a step change in the baseline signal

Core Advantages

- Real-time monitoring of biofilm with. **no lab-testing needed**
- Bio-film formation trends can be generated in HMI, allowing for **proactive, automatic cleaning**
- **Lower biocide chemical consumption** than conventional "blind" method and **reduced CIP frequency**
- Higher treatment plant **uptime** and **energy efficiency**

Realtime Visualization for BioFilmPro®

- BioFilmPro® is now in the machine learning phase
- Based on the rate of change we predict the formation of biofouling.
- Based on the generated alarm preventive corrective action are being taken.