# BioFil – Biofilter Technology for Waste Treatment

Wastewater generated by the housing and industrial areas continues to pose a threat to the river water quality. Wastewater treatment system must be able to cope with large pollution load and as well must be very effective to treat different types of liquid effluent at different concentration.

BioFil technology is a simple and innovative Biofilter process, which is capable of treating high strength organic effluent at minimum operating cost. The BioFil process consists of upflow filtration through a biological bed of plastic media, which is sub-merged, and floating. The plastic media used is called Cosmo-ball and it is specially designed to provide very large surface for bacterial attachment. The anaerobic BioFil process utilises the naturally occurring micro-organisms in the absence of oxygen to convert complex organics into methane and carbon dioxide.

*Cosmo-ball media for BioFil system*

Full scale and pilot studies confirm the suitability of BioFil technology to treat large variety of effluent such as sewage, paper mill, poultry processing and palm oil mill. The technology was innovated to provide less space, use less power and be more 'environmental friendly'. There are two versions developed to treat specific waste streams. The anaerobic BioFil is targeted to destroy high strength effluent exceeding 5,000 mg/l to 150,000 mg/l. The aerobic BioFil (known as BioFil-AE) is capable of eliminating residual BOD in sewage and industrial effluent to below 10 mg/l.

The BioFil process is more superior to the conventional anaerobic digester in that it operates with very short hydraulic retention times (often between 1 to 5 days for high organic wastes) and takes high organic loadings, thus reducing reactor size, land area requirement and capital costs.

BioFil technology is licensed to Pakar Management Technology (M) Sdn Bhd in 2000 for applications in sewage and industrial sectors.

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