

Biofilm Reactor Technology for Waste Water Treatment

Biofilm reactor technology is a cost-effective, flexible method of treating organically contaminated waste waters. The Saskatchewan Research Council, under agreement with the University of Saskatchewan (U of S), has developed this technology for industrial application. SRC is the first to demonstrate the reduction of oil and grease in synthetic feeds with this reactor, which has also successfully degraded phenols.

The Reactor

The biofilm reactor consists of a high-density film of a specific bacteria adhering to a packing within a column. In the operation of this reactor, the waste water flows down over the packing while air flows counter current. This design enjoys the following benefits.

- Large surface area of coated packing provides excellent contact between water and bacteria.
- Oxygen transfer to the bacteria is efficient.
- Organic compounds are actually degraded rather than air stripped.
- Residence time is reasonable.
- This compact system can be sized to suit the water treatment needs of a specific user, such as an oil production facility.

Extensive testing at the U of S overcame problems with fouling and plugging that limited earlier biofilm reactors; SRC has integrated these improvements in its design.

“Oil and greases are successfully degraded by bacterial action”

Potential Applications

- Refineries
- Chemical plants
- Oilfield production facilities
- Water contaminated with organic compounds

SRC welcomes the involvement of clients desiring an effective, low-cost solution to their water treatment concerns.

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