Abstrakt

Biofilter: biological, kinetic and thermodynamic characterisation

In this study the community of different microorganisms in a segmented biofilter for styrene degradation was observed over the period of some month. For the description of biofiltration by mathematical models, presence and activity of the primary degrading agents may be allow.

Therefore the analysis of the fatty acid composition of the overall bacterial community and identification of primary degraders thought FISH technique on biofilm probes of each segment of the biofilter has been done. For scaling up mathematical models have been used which connect distribution, diffusion and kinetics on the gas/biofilm and water/biofilm systems. The determining of the kinetics parameter shows that the degradation of styrene is both zero order in styrene and first order in oxygen consumption.