

Biokinetics on Simultaneous Biofiltration of H₂S, NH₃ and Toluene in Waste Air

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In order to investigate inhibitory effects in the biofiltration system during simultaneous removal of ternary mixtures of NH₃-H₂S-toluene contaminants in air, a system modeling has been performed encompassing an inhibition biokinetic expression. Experimental data for removing the three contaminant gases were collected during a long term operation of two biofiltration systems that utilized mixtures of microorganisms fixed on zeocarbon and cork as microbial fixing carriers. Results of regression analyses of experimental data using suggested kinetic models reveal that there are no particular evidences or clues of interactions or inhibitions among microorganisms, and the three reactions are taken place independently within a finite area of biofilm that have been developed on the surface of packing materials.