Treatment of malodorous waste air by a semi-pilot scaled hybrid system composed of biofilter packed with media inoculated with *Thiobacillus sp.* IW and return-sludge and photocatalytic reactor

이은주[1,2], 박혜리[1,2], 조재범[1], 조준장[1], 임광희[1,2,*]
[1]대구대학교 화학공학과; [2]산업 및 환경폐가스 연구소
(khlim@daegu.ac.kr*)

A semi-pilot hybrid system composed of a photocatalytic reactor and a biofilter was operated under various operating conditions in order to treat malodorous waste air containing both hydrogen sulfide and ammonia which are major air pollutants emitted from composting factories and many publicly owned treatment works(POTW). When both hydrogen sulfide and ammonia contained in malodorous waste air were treated simultaneously by a biofilter system, its performance of ammonia removal was much more poor than that by a biofilter system treating waste air containing only ammonia, unlike its performance of hydrogen sulfide removal. The semi-pilot hybrid system contributed the enhancement of removal efficiency and the maximum elimination capacity of ammonia in a higher degree than that of hydrogen sulfide, compared to the semi-pilot biofilter system.