

Influences of NOM and Turbidity on PAC Adsorption/DAF Hybrid Process for the Simultaneous Removal of Trihalomethanes and Suspended Solids

양태훈, 정홍조, 곽동희, 김성진¹, 이재욱*
서남대학교; ¹여수한영대학교
(jwlee@seonam.ac.kr*)

The influences of NOM and turbidity on the hybrid process consisting of PAC adsorption and dissolved air flotation were systematically investigated for the simultaneous removal of trihalomethanes (CHCl_3 , CHBrCl_2 , CHBr_2Cl and CHBr_3) and suspended solids. Before studying the hybrid system, adsorption equilibrium and kinetics of trihalomethanes were examined using powdered activated carbons (PAC). Three types of powdered activated carbons (wood-based, coal-based, coconut-based) were used. On the other hand, the removal efficiency of suspended solids was evaluated from the results of conventional gravity sedimentation and DAF. A kinetic model for DAF process was employed to describe the bubble-floc collision and agglomeration, as well as the rising velocity of bubble-floc agglomerate. It was found from our study that the hybrid process consisting of PAC adsorption and DAF can be widely applied for the water and wastewater treatments.