The removal of 1,4-dioxane in water using plasma based process

유승열*, 박준석, 유승민, 노태협, 송진희[1]
국가핵융합연구소; [1](주)티이케이
(sryoo@nfri.re.kr*)

1,4-Dioxane is well known as surface-treating solvents for artificial leather. It is hard to decompose 1,4-dioxane in water due to its high solubility an non-volatility in water. 1,4-dioxane in aqueous solution is not effectively degraded by UV, ozone process including any common treatment techniques as chlorine oxidation, coagulation, air stripping. In this research, we propose a plasma treatment method on electrical discharge condition having a high impulse current as well as formation of radicals in water and other fluid mediums. As a result of study, The removal efficiency of 1,4-dioxane by plasma treatment was iincreased up to 85% at optimum conditions. this plasma process is expected to be applicable to the treatment of drinking water.