

A preliminary study of dielectric barrier discharge plasma for the degradation of bisphenol A in aqueous solutions

김수지, 목영선^{1,*}

KAIST; ¹제주대학교

(smokie@jejunu.ac.kr*)

Bisphenol A(BPA) has been extensively used for the plastics industry as a major component of epoxy resin, leading its presence with increasing amount in the aquatic environment. However, BPA is one of the anthropogenic compounds considered as endocrine disruptors (EDC). The human and ecological risk of BPA has been reported as an inducer of feminization phenomena in various species of animals. Various oxidation processes to degrade BPA, including ozonation, have been reported. This paper covers the advantages in using underwater dielectric barrier discharge (UDBD) plasma to remove BPA from water. The UDBD plasma reactor produces reactive species (electrons, radicals, ions) and generates numerous micro-discharges, which decomposes BPA. The by-products of BPA degradation by UDBD plasma reaction were analyzed by liquid chromatography/mass spectrometry-mass spectrometry (LC/MS/MS).