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Study of OH Radical Generation Process in Pulsed Air Discharge Including Water Droplets

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Water purification technology that can decompose refractory organic compounds efficiently is required because eluent standard of factories became stricter. As one of methods of water purification, we have studied spraying polluted water into pulsed discharge. In this method, polluted water is purified by OH radical and ozone mainly, which are produced by the discharge. However, generation processes of those products have not confirmed in experiment. To confirm it, OH radicals in case of spraying into the pulsed discharge space and in case of spraying into ozone space without the discharge, were measured and compared. In this measurement, ozone concentration generated at the discharge space was equalized with ozone concentration in ozone space. OH radical was measured by a fluorescent method using terephthalic acid, and decomposition of acetic acid. As the result, OH radical concentration of both spaces was similar. Therefore, we expect that almost all OH radicals are generated via the reaction of ozone and OH minus ion.

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