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Degradation of Organic Pollutants by the Advanced Oxidation Processes

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Abstract A kinetic model has been developed for the degradation of organic pollutants concerning with hydroperoxide ion as the initial step for generation of hydroxyl radical and its subsequent reaction mechanisms. Rate equations were derived for depletion of ozone and pollutants in the peroxone oxidation process using ozone and hydrogen peroxide as combined oxidants. Kinetic data obtained experimentally from the hydrogen peroxide-ozone reaction and peroxone oxidation of nitrobenzene were analyzed by using the proposed rate equations.

Key words Oxidation; Pollutants; Advanced Oxidation Processes

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