

AN ABSTRACT OF A THESIS

**STUDY OF PULSEPOWER™ SYSTEM FOR
OXIDANT PRODUCTION**

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Various oxidizing species such as ozone (O_3), hydroxyl radical ($\cdot OH$), and hydrogen peroxide (H_2O_2) may be formed by a pulsed corona discharge in water. These active species may play an important role in the killing of microorganisms and degrading of organic compounds. A high voltage, electric pulse system for aqueous media was tested to determine the factors affecting oxidant production. The statistically significant factors affecting ozone production were energy, frequency, and flowrate. A mechanism for ozone production was proposed and the effects of the process on pH, dissolved oxygen levels, specific conductivity, and temperature were evaluated.