

Abstract Submitted  
for the GEC15 Meeting of  
The American Physical Society

**In-water plasma generation and its performance using a coaxial DBD device and compact power supply** SHIN-ICHI IMAI, Y. SAKAGUCHI, Y. MIYAMOTO, A. ODAGWA, Panasonic, TATSURU SHIRAFUJI, Osaka City University — This paper describes in-water plasma generation and its characteristics using a coaxial tungsten electrode and a compact power supply. In-water plasma is formed in an air stream supplied from outside by an air pump. The power supply circuitry, which is based on LC series resonance, was designed using SPICE simulation. We were able to reduce the volume of the power supply to 1.5 liters. The behavior of the in-water plasma and voltage waveform generated by our device and the power supply were simultaneously observed using a high-speed camera system in conjunction with an oscilloscope. The device performance was estimated using the decoloration of indigo carmine during Plasma ON and OFF. The radicals and species in in-water plasma were measured using an ESR-spin-trap method. It was found that O<sub>2</sub>- and OH radicals are generated during Plasma ON, and OH radicals remain after Plasma OFF.

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Date submitted: 19 Jun 2015

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