Abstract Submitted
for the GEC15 Meeting of
The American Physical Society

Spectroscopic Investigation of a Dielectric Barrier Discharge Over a Wide Range of Pulse Parameters JULIAN PICARD, JAMES PRAGER, TIMOTHY ZIEMBA, KENNETH E. MILLER, AKEL HASHIM, Eagle Harbor Technologies, Inc. — Most high voltage pulser used to drive dielectric barrier discharges (DBDs), produce a single pulse shape (width and voltage), thus making it challenging to assess the effect of pulse shape on the production of different chemical species during a discharge. Eagle Harbor Technologies (EHT), Inc. has developed a nanosecond pulser that allows for independent control of the output voltage, pulse width, and pulse repetition frequency. Through the utilization of this technology, presented here is a precise characterization of reactive species generated by the DBD under the independent variation of voltage (0-20 kV), frequency (0-20 kHz) and pulse width (20-260 ns). A better understanding of this parameter dependency can allow for more targeted and effective application of plasma in medical, environmental, industrial, and other applications.

Julian Picard
Eagle Harbor Technologies, Inc.

Date submitted: 19 Jun 2015 Electronic form version 1.4