Abstract Submitted
for the GEC15 Meeting of
The American Physical Society

**Ozone production using dielectric barrier discharge in oxygen and carbon dioxide**[1] FRANCISCO PONTIGA, University of Seville, ROUKIA ABIDAT, Université des Frères Mentouri Constantine, HELENA MORENO, FERNÁNDEZ-RUEDA AGUSTíN, University of Seville, SAIDA REBIAï, Université des Frères Mentouri Constantine — The generation of ozone in oxygen and carbon dioxide using a planar dielectric barrier discharge (DBD) has been experimentally investigated. The DBD reactor was operated at moderate voltages (4.2 to 5.6 kV) and frequencies (50 to 500 Hz) and the gas flow rate was varied in the range 50 to 200 $cm^3$/min. The averaged consumed power (<1 W) was evaluated using a monitor capacitor of known capacitance (1$\mu$F). The effluent gas from the DBD reactor was diverted to a gas cell situated inside the sample compartment of a UV spectrophotometer. Therefore, ozone concentration was determined from the measurement of absorbance using Beer-Lambert law. The results have shown that ozone concentration in oxygen grows very linearly with the input power. In contrast, the production of ozone in carbon dioxide is less regular, which may be due to the deposition of a thin layer over the stainless steel electrode during the application of the electrical discharge. Moreover, the rate of ozone production with the injected energy density was found to be 500 times weaker in carbon dioxide than in pure oxygen.

[1]This work was supported by the Spanish Government Agency "Ministerio de Ciencia e Innovación" under contract no. FIS2011-25161.

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Date submitted: 18 Jun 2015 Electronic form version 1.4