

Abstract Submitted
for the GEC17 Meeting of
The American Physical Society

A novel wire-to-cylinder plasma-water-setup for environmental applications KATHARINA STAPELMANN, North Carolina State University, CAROLIN RATERING, Ruhr University Bochum — A novel plasma-water setup was built for water treatment for environmental applications. The high-voltage electrode is a capillary, allowing different gases to be injected to the liquid. The grounded electrode is a cylindrical mesh, wrapped around a glass cylinder. As a first step, the properties of the influx of the gas are investigated optically and by Schlieren imaging. Further, the discharge behavior is investigated optically by means of CCD camera imaging and optical emission spectroscopy. The discharge behavior is correlated to the gas influx. First colorimetric investigations reveal insights to the production of chemical species, such as nitrate and nitrite. Based on terephthalate dosimetry, production and diffusion of OH radicals is observed by fluorescence measurements.

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Date submitted: 21 Jul 2017

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