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Hydroxyl radical densities in plasma treated liquid BRAYDEN MYERS, PIETRO RANIERI, KATHARINA STAPELMANN, North Carolina State University — Hydroxyl radical concentrations in plasma treated liquid are measured using two different techniques: electron paramagnetic resonance (EPR) spectroscopy [1] and a terephthalic acid (TA) assay [2]. A COST Reference Microplasma Jet [3] is used with a variety of treatment durations, applied voltages, and helium based gas mixtures. As one of the most prominent radicals, $^{\bullet}$OH is primarily produced through dissociative collisions with high energy electrons and metastables in the active plasma and jet effluent [4]. OH radicals are potent oxidizers and precursors to hydrogen peroxide and other reactive oxygen species important for biomedical applications. The source of $^{\bullet}$OH in the plasma treated liquid is also identified using isotopic admixtures in the feed gas. [1] Y. Gorbanev et al., *Phys. Chem. Chem. Phys.*, **4**, 2018 [2] S. Kanazawa et al., *Int. J. Plasma Environ. Sci. Technol.*, **6**, 2012 [3] J. Golda et al., *J. Phys. D: Appl. Phys.,* **49**, 2016 [4] J. Benedikt et al., *Plasma Sources Sci. Technol.,* **25,** 2016

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