Abstract Submitted
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Investigations of Hydrocarbon Contamination in Ozone Generators[1] JOSE L. LOPEZ, ALFRED FREILICH, CMST - Saint Peter's College, KURT H. BECKER, Polytechnic Institute of NYU, FABIO KROGH, Degremont Technologies, CMST - SPC TEAM, POLYTECHNIC INSTITUTE TEAM, DEGREMONT TECHNOLOGIES TEAM — Residual amounts of methane (CH_4) and other trace hydrocarbons in the feed gas of dielectric barrier discharge (DBD) ozone generators have been observed to be a very harmful contaminant in ozone formation. This research aimed to better understand the physical and chemical mechanisms involved in the hydrocarbon contamination of the ozone producing microplasmas. Previous observations of similar hydrocarbons and other trace impurities such as H_2 or NO_x mixed with the feed gas have shown similar degradation effects in ozone formation. Some of these processes caused catalytically enhanced recombination of O atoms, while other impurities lead to different ozone destruction cycles. In this work, both theoretical and experimental methods were used to elucidate the damaging effects of hydrocarbon corruption.

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