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1P84 - Plasma water treatment and oxidation of organic matter in water

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Low temperature plasma microdischarges in contact with aqueous solutions which include organic dyes are studied. Plasma treatment of samples over a duration of time encompassing one hour are observed. The Ultraviolet–visible (UV-Vis) spectrum of select samples is analyzed to assess and measure the change in organic dye content. Results are presented which indicate the efficacy of small scale plasma systems to oxidize organic matter in water. The color change in the water is observed and the associated changes in absorbance and reflectance are characterized. With the present system, dye-containing samples were made visibly clear during testing. Further tests with water treatment parameters such as total organic carbon are also being pursued. The efficacy of using plasmas for cleaning water, specifically related to the presence of oil in water is discussed.

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