

Abstract Submitted
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Diagnostics of an rf-excited micro atmospheric pressure plasma

jet S. REUTER, K. NIEMI, Department of Physics, University Duisburg-Essen, D-45141 Essen, Germany, V. SCHULZ-VON DER GATHEN, T. MUSSENBROCK, T. GANS, Center for Plasma Science and Technology CPST, Ruhr University Bochum, D-44780 Bochum, Germany — The “standard” 13.56 MHz rf-excited plasma jet operates at ambient conditions. It generates a homogeneous plasma in helium or argon with small admixtures (about 1 vol.-%) of oxygen¹. Absolute concentrations of atomic oxygen have been measured in the effluent of the plasma jet by two-photon laser-induced fluorescence (TALIF). Even at several centimeter distance from the nozzle still there is 1% of the initial atomic oxygen density of 10^{16} cm^{-3} present². Here we present a modified μ -APPJ version particularly designed for investigation of the discharge interior. First emission spectroscopic investigations and tests of applicability are presented. The wettability of polymer Petri dishes could be adjusted in a wide range (wetting angle from 60° to below 10°).

¹ S. Wang, V. Schulz-von der Gathen, and H.F. Doebele, *Appl. Phys. Lett.* **83**, 3272 (2003)

² K. Niemi, S. Reuter, V. Schulz-von der Gathen, and H.F. Doebele, *Plasma Sources Sci. Technol.* **14**, 375 (2005)

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