Abstract Submitted
for the GEC16 Meeting of
The American Physical Society

Atomic oxygen behavior at downstream of AC excited atmospheric pressure He plasma jet KEIGO TAKEDA, KENJI ISHIKAWA, HIROMASA TANAKA, MAKOTO SEKINE, MASARU HORI, Nagoya Univ. — Applications of atmospheric pressure plasma jets (APPJ) have been investigated in the plasma medical fields such as cancer therapy, blood coagulation, etc. Reactive species generated by the plasma jet interacts with the biological surface. Therefore, the issue attracts much attentions to investigate the plasma effects on targets. In our group, a spot-size AC excited He APPJ have been used for the plasma medicine. From diagnostics of the APPJ using optical emission spectroscopy, the gas temperature and the electron density was estimated to be 299 K and 3.4×10^{15} cm^{-3}. The AC excited He APPJ which affords high density plasma at room temperature is considered to be a powerful tool for the medical applications. In this study, by using vacuum ultraviolet absorption spectroscopy, the density of atomic oxygen on a floating copper as a target irradiated by the He APPJ was measured as a function of the distance between the plasma source and the copper wire. The measured density became a maximum value around 8×10^{13} cm^{-3} at 12 mm distance, and then decreased over the distance. It is considered that the behavior was due to the changes in the plasma density on the copper wire and influence of ambient air.

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Date submitted: 10 Jun 2016 Electronic form version 1.4