

Abstract Submitted
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Interaction of AC excited Atmospheric Pressure Ar Plasma Jet with Medium¹ KEIGO TAKEDA, SIJIE LIANG, TAKUMI KUMAKURA, KENJI ISHIKAWA, HIROMASA TANAKA, MAKOTO SEKINE, MASARU HORI, Nagoya Univ — Recently, there are interesting results on the plasma selective killing of cancer cells against normal cells using the atmospheric pressure plasma. In the applications, the interaction of plasma with liquid is a hot research topic since most cells and tissues are surrounded by liquids. In the cases, reactive species in gas phase play important roles on the generation of reactive species in the medium. Therefore, it is strongly required to diagnose the behaviors of gas-phase reactive species for clarification of the interactive reactions of plasma jet with the medium. In this study, the interaction of an AC excited argon atmospheric pressure plasma jet (APPJ) with medium have been investigated on the basis of behaviors of gas-phase OH radical measured by using optical emission spectroscopy and laser induced spectroscopy. From the results, the OH radical was observed only in the plasma jet for irradiating the medium with the plasma jet. Therefore, in the AC excited APPJ treatment, it is considered that OH radical is mainly generated by dissociation of water vapor in ambient air and the effects of OH radical on generation of reactive species in the medium decreased with increase in the distance between plasma head and medium surface.

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Keigo Takeda
Nagoya Univ

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