ELECTRICAL CHARACTERIZATION, HEAT FLUX AND THE REACTIVEOXYGEN RADICAL PRODUCTION OF ARGONATMOSPHERIC PRESSURE PLASMA JET WITH ALCOHOL

Trung Nguyen Tran [1], Hiroto Matsuura [1], Yoshiki Matsui [1], Jian Chen [1], and Yuichiro Takemura [2]

[1]*Osaka Prefecture University, Japan*

[2]*Kindai University, Japan*

Atmospheric pressure plasma jet (APPJ) has been applied in variousfield such as materials science, environmental and biological fields. Forindustrial applications, the current plasma source has many drawbacks.Therefore, the reduction of plasma production cost is still an important issuein the basic discharge research. In this study, the plasma heat flux onto Ptand Al target were investigated with pure argon or argon-ethanol mixture.Plasma heat flux can be estimated by fitting exponential time evolution oftarget temperature. The increase in temperatures of the Pt and Al surface are causedby the energy released in the recombination of oxygen radicals on theirsurface. Besides of radical measurement, the electrical characterization of theplasma jet has been determined using a high voltage probe. The lissajousfigures method are adopted for measuring the power consumption for plasmaproduction. Furthermore, the quantitative visualization of reactive oxygenradical (ROS) in solution irradiated by APPJ were conducted.

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