

**75th Annual Gaseous Electronics Conference**

Monday–Friday, October 3–7, 2022; Sendai International Center, Sendai, Japan

The session times in this program are intended for Japan Standard Time zone in Tokyo, Japan (GMT+9)

**Session IR4: Plasma Liquid Interaction III**

1:30 PM–3:30 PM, Thursday, October 6, 2022

Sendai International Center Room: Sakura 2

Chair: Naoki Shirai, Hokkaido University

**Abstract: IR4.00004 : Creation of reaction species by an atmospheric pressure plasma jet when treating liquids\***

2:30 PM–2:45 PM

← Abstract →

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Versatility of effects induced in liquids after plasma treatments has facilitated development of various applications in the fields of medicine, biology, water treatment etc. Plasma treated liquids (PTL) may contain different long-lived chemical species, but their occurrence and concentrations depend on the plasma system used. Some of the fundamental and significant reactions have been specified, but due to complexity of the chemistry in both plasma and liquid and their interaction, obtaining a wider prospect is still remote. To investigate interaction between atmospheric pressure plasma and a liquid target, in this study we associated results of spectrally resolved imaging and optical emission spectroscopy with quantification of reactive oxygen and nitrogen species (RONS) formed in the treated sample. For creation of the plasma above the sample we used a plasma jet operating in kHz regime with He/Ar as working gases. Relation between plasma and liquid properties has been established for wide range of different plasma parameters and several liquid targets. Obtained results provided relation between creation of RONS in the gas phase and in PTL.

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