

CAMT Seminar

“The role of metals in the deposition of long-lived reactive oxygen and nitrogen species into the plasma-activated liquids”

Dr. Kinga Kutasi

Institute for Solid State Physics and Optics,
Wigner Research Centre for Physics, Hungary

Date: October 18, 2022 (Tue) 11:00-12:00

Location: Main Conference Room (1st floor), Bldg. A12

Center for Atomic and Molecular Technologies (CAMT)

(A12 棟 1 階会議室) & Webex Link (hybrid)

Abstract:

The long-lived species of plasma-activated liquids (PALs) have been identified to be nitrate, nitrite, and hydrogen peroxide. Recently, it has been shown that PAL can be used to increase the stress tolerance of plants, and it is further hypothesized that the created nitrate/nitrite ions can make PAL be used as green fertilizer by providing nitrogen nutrients for plants. However, under acidic conditions, the H₂O₂ reaction with NO₂⁻ is very efficient, and in the case of comparable concentrations it leads to the disappearance of NO₂⁻. Here we investigate the role of metals with high reduction potential, which have the ability to neutralize the acidification induced by the plasma treatment, on the formation and the stability of RONS in the liquids treated with a surface-wave microwave discharge.

(Host: Satoshi Hamaguchi Ext:7913)