

CAMT Seminar

“Characteristics and tuning possibilities of the flowing afterglow system based on a low pressure surface-wave microwave discharge”

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

Center for Atomic and Molecular Technologies (CAMT)

(A12 棟 1 階会議室)

Abstract:

In order to achieve efficient treatment of different surfaces two main requirements need to be satisfied: (i) the controlled production of active species and (ii) their transport to the surface to be treated. In a flowing afterglow system based on a low pressure surface-wave microwave discharge, there are several parameters that can influence the discharge conditions, and thus the production of the active species, namely: (i) the efficiency of the pumping system used and the capacitance of the afterglow system, (ii) the gas flow rate, (iii) the position of the microwave coupler (surfatron) along the discharge tube, (iv) the length of the discharge tube, and consequently, of the early-afterglow region, and (v) the gas mixture. Understanding the effect of these parameters and their proper setting, with the help of model calculations, give the possibility to produce the plasma composition required in the treatment reactor. In our presentation we are going to discuss the tuning possibilities of the afterglow plasma composition in binary and ternary mixtures by clarifying the characteristics of a flowing surface-wave microwave discharge system.

(Host: Satoshi Hamaguchi Ext:7913)