
Plasma-functionalized solution and its applications for Plasma Farming

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Weakly ionized plasmas have shown a potential in providing highly-concentrated reactive species into the open space or intended targets, and have become increasingly significant for scientific and industrial interests. Most recently, there have been active attempts to apply atmospheric-pressure plasma technology to various industrial fields such as biomedicine, agriculture, and food areas. For such applications, plasma-treated water (PTW) is an extremely fascinating substance in that it facilitates storage of reactive oxygen and nitrogen species (RONS) produced by plasma. As the use of such plasma-functionalized solution is expected to become diverse, in-depth understanding of the chemical properties of plasma-liquid systems in both gaseous and aqueous phases is essential for specific purposes. This presentation will cover a wide range of plasma-functionalized solution from its introductory overview to its applications to the plasma farming. In addition, recent research activities in our group will be introduced from a conceptual design of plasma apparatus to a physiochemical characterization of the plasma-liquid system. With all experimental results, computational simulation results will also be provided for insights into chemical kinetics in the plasma-liquid system.

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