Abstract Submitted
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Characterization of Wet Air Plasma Jet Powered by Sinusoidal High Voltage and Nanosecond Pulses for Plasma Agricultural Application[1] KEISUKE TAKASHIMA, KEISUKE SHIMADA, HIDEAKI KONISHI, TOSHIRO KANEKO, Department of Electronic Engineering, Tohoku University — Not only for the plasma sterilization but also for many of plasma life-science applications, atmospheric pressure plasma devices that allowed us to control its state and reactive species production are deserved to resolve the roles of the chemical species. Influence of the hydroxyl radical and ozone on germination of conidia of a strawberry pathogen is presented. Water addition to air plasma jet significantly improves germination suppression performance, while measured reactive oxygen species (ROS) are reduced. Although the results show a negative correlation between ROS and the germination suppression, this infers the importance of chemical composition generated by plasma. For further control of the plasma product, a plasma jet powered by sinusoidal high voltage and nanosecond pulses is developed and characterized with the voltage–charge Lissajous. Control of breakdown phase and discharge power by pulse-imposed phase is presented.

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Keisuke Takashima
Department of Electronic Engineering, Tohoku University

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