

# Voltage phase dependence of electron temperature in atmospheric pressure plasma jet propagation

Jun Sup Lim\*, Eun Ha Choi\*

\* Plasma Bioscience Research Center(PBRC), Kwangwoon University, Seoul, Korea

Email: ehchoi@kw.ac.kr

Time resolved electron temperature in atmospheric pressure Ar plasma jet propagation was studied in this report. The plasma jet was operated by 2.5 kV and 50 kHz sinusoidal wave, and it was propagated from the high voltage electrode to tube nozzle as form of plasma bullet. The electron temperature was not decrease with propagation distance and the axial distribution depended in part on the applied voltage phase. This shows that the propagating plasma bullet is still affected not only by the bipolar diffusing electric field, but also by the voltage applied at the electrode. The electron temperature was measured to be  $\sim 1.0$  eV.

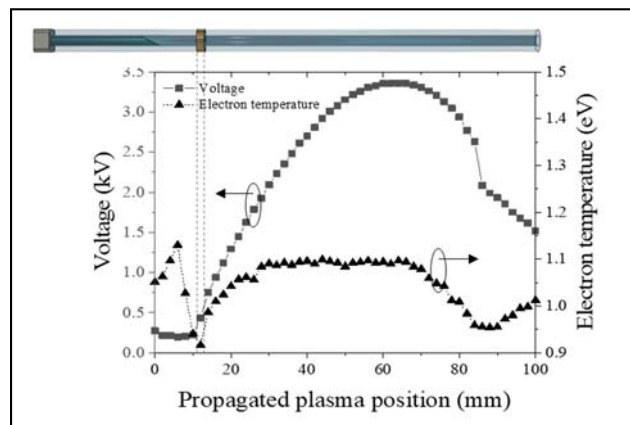


Fig 1. Applied voltage phase and electron temperature versus propagated plasma position