**PPPS 2019** 



Contribution ID: 1195

Type: Poster

## 3P08 - Evaluation of electric field and charge on bio-substrates induced by nanosecond pulsed helium plasma jet

Wednesday 26 June 2019 13:30 (1h 30m)

Non-thermal atmospheric-pressure plasma jets are of interest to various biomedical applications including bacterial inactivation, surface modification and sterilization, wound healing and tumor apoptosis. The electric field and charge near the bio-substrates were considered important parameters influencing the plasma-induced biomedical effects due to the possible electroporation and chemical processes. This work investigated the electric field and charges above and in the bio-substrates with the plasma jet impinging on the substrate. Water, saline solution and pig skin were used as the substrate. The plasma jet was based on a dielectric barrier discharge (DBD) configuration, powered by 180 ns, 6 kV pulses at 1 kHz and with helium flow of 985 sccm. Decreasing the gap distance d between the electrode nozzle and the substrate. The electric field in water or saline solution and the charges transferred to the substrate. The electric field in water is higher than that in saline solution under the same conditions. The charge transfer above the substrate surface as well as in the substrate were compared for different substrates by obtaining current flow at different locations of the system.

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**Session Classification:** Poster - Industrial/Commercial/Medical Applications and Plasma and Pulse Power Diagnostics

Track Classification: 6.1 Nonequilibrium Plasma Applications