

Abstract Submitted  
for the GEC13 Meeting of  
The American Physical Society

**Spatially Resolved Measurements of Emitting Species in Low Temperature Plasma Microjets** SYED HAMID RAZAVI BARZOKI, SOHEILA MOHADES, NAZIR BAREKZI, MOUNIR LAROUSSE, Old Dominion University — Non-thermal atmospheric pressure plasma microjets have recently been investigated for plasma processing including biomedical applications [1]. This is due to their ability of providing geometrically well-defined plasma plumes at room temperature and pressure, in air and not confined by electrodes. These microjets can be thought of as vehicles transporting reactive chemical species to a remote substrate. To study the chemical makeup of the plasma Optical Emission Spectroscopy (OES) is used. Since the plasma plume is in fact a series of plasma packets/bullets traveling at high velocities [2], the spatial distribution of the chemical species is a dynamic quantity that varies with the temporal location of the plasma bullet. This is due to substantial changes in size and content that the plasma bullet undergoes as it mixes with the surrounding air along its propagation path. In this paper we present OES measurements of various species generated by a low temperature plasma microjet. The spatial distributions of the emitting species along the axis of propagation of the plasma plume are measured and correlated with the physical position of the plasma bullet.

[1] M. Laroussi and T. Akan, *Plasma Processes and Polymers* **4**, 777 (2007).

[2] X. Lu and M. Laroussi, *J. Appl. Phys.* **100**, 063302 (2006).

Mounir Laroussi  
Old Dominion University

Date submitted: 11 Jun 2013

Electronic form version 1.4