

Abstract Submitted
for the GEC08 Meeting of
The American Physical Society

Investigation of Cell Surfaces using Microplasma-Assisted Desorption/Ionization Mass Spectroscopy¹ JOSHUA SYMONDS, LAN SUN, Georgia Institute of Technology School of Physics, FACUNDO FERNÁNDEZ, THOMAS ORLANDO, Georgia Institute of Technology School of Chemistry and Biochemistry, THE CENTER FOR BIO IMAGING MASS SPECTROMETRY COLLABORATION² — Low-temperature, atmospheric pressure microplasmas have been developed for a wide array of uses. We have investigated one type of these devices, a Microhollow Cathode Discharge (MHCD) for desorbing and ionizing samples to be analyzed with standard mass spectroscopy techniques. Our work includes the development and use of MHCD's to analyze solid and liquid phase samples, with particular attention given to biologically-relevant substances. The goal of this line of research is to investigate, without causing undue fragmentation, the compounds present on and within cell membranes. By varying the properties of the plasma, including electron temperature, plasma density, and the plasma's interactions with the sample, we seek to investigate the role of different plasma components in the desorption/ionization events. Specifically, we seek to determine whether the process is dominated by emitted electrons, high energy (VUV) photons, metastable particles, or a combination thereof.

¹The Center for Bio Imaging Mass Spectrometry, U.S. Department of Energy.

²<http://web.chemistry.gatech.edu/~bims/index.html>

Joshua Symonds
Georgia Institute of Technology School of Physics

Date submitted: 17 Jun 2008

Electronic form version 1.4