Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Enhancing Laser Induced Plasma Emissions using Various Excitation Modalities[1] LEWIS JOHNSON, CHARLEMAGNE AKPOVO, SAMSON GEBREEGZIABHER, JORGE MARTINEZ JR., Florida A&M University, Tallahassee, Florida — Detection of hazardous materials with Laser Induced Breakdown Spectroscopy (LIBS) requires a detailed understanding of the sample matrix as well as the surrounding environment. We report on our efforts to understand and manipulate the continuum and atmospheric levels while enhancing surface and substrate material identifications. Comparisons are made between: single pulse (SP) nanosecond (ns); SP femtosecond (fs); SP fs-self-channeled (fs-sc); Dual pulse (DP) ns; DP ns – fs; and DP ns fs-sc; and multi–pulse Continuous Wave (CW) plasmas formed on the sample surface. Plasma emission spectra from atmospheric oxygen and nitrogen, as well as aluminum and Copper substrates, and hazardous oxygen and nitrogen rich materials residues are analyzed.

[1]Research supported in part by a contract from the US Army SMDC.

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Date submitted: 20 Aug 2008 Electronic form version 1.4