Abstract Submitted
for the GEC09 Meeting of
The American Physical Society

Industrial Applications to the Inertial Electrostatic Confinement Configuration[1] ELIJAH MARTIN, STEVE SHANNON, MOHAMED BOURHAM, NCSU — Since Fransworth's observation of inertial electrostatic confinement in the 1930's several applications have been proposed and studied with fusion being the main focus. Inertial electrostatic confinement is a scheme in which ions are focused and confined by means of either an electrostatic field or a combination of electrostatic and magnetic fields to produce an effective spherical potential well. Due to the spherical symmetric configuration and the convergent non-Maxwellian ion beams IEC presents a unique energy spectrum that could enhance or enable a variety of industrial plasma applications from material processing to light sources. This work will present the possible industrial applications of the IEC configuration and initial characterization of an IEC source for these applications. The current industrial applications under consideration include materials synthesis, processing, and light production.

[1]This project is supported by UFNRC, Applied Materials, and North Carolina State.

Elijah Martin
NCSU

Date submitted: 11 Jun 2009 Electronic form version 1.4