Contribution ID: **40** Type: **Poster**

A numerical plasma model of DBD Xenon Light source for VUV Radiation Emission

Tuesday 20 June 2017 13:30 (1h 30m)

Abstract-
We study in this article by a numerical model the plasma characteristics of dielectric barrier discharge in pure xenon. The 1D Siglo T-R model developed in this paper is based on the resolution of two moments of Boltzmann equation with approximation of local electric field. The discharge model is driven by an external sinusoidal voltage waveform and was achieved and studied in the pressure of 200 torr, at frequency of 50 kHz. The results discuss time variation of current density, plasma and dielectric voltages. Also, spatiotemporal evolution of electric field, ion and electron densities was calculated.
Key-words-
Sinusoidal voltage, Dielectric barrier discharge (DBD), Xenon, 1D model, electric field.

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Session Classification: Poster session II - High-Energy Density Physics and Technology

Track Classification: High-Energy Density Physics and Technology