

Investigating intensities of very high voltage rise dv/dt pulsed power source in atmospheric microplasma

Abstract

Micro barrier discharge operating at atmospheric air was excited by a compact pulse generator which has the capability to produce fast rising voltage pulse with maximum rise up voltage as high as 435MV/s. Sequences of images and its intensity values were recorded at 100 nanoseconds intervals as a function of gap distance and applied voltage. Results showed that the discharge intensities are afterglow microplasma. Maximum intensity values were obtained at approximate time for each condition. Uniformity of discharge obtained when gap distance was 600 μm and applied voltage was 6 kV.

Keywords — Atmospheric-pressure plasmas, energy storage, plasma applications, plasma properties, plasma sources, pulse generation