LINE-ARRAY ATMOSPHERIC PRESSURE PLASMA JET DEVICE FOR MEDICAL TREATMENT

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Currently, several types of atmospheric pressure plasma jet (APPJ) were introduced by many groups and widely used. In this study, we introduce a panel type APPJ which was developed using a plasma display panel (PDP) process. This device consists of facing glasses with barrier rib for feeding gas guide and electrode gap, where He gas flows between two dielectric-free Titanium metal electrodes with a voltage pulse shorter than 500 ns. He gas is injected with a gas flow rate of 0.1~5 liter per minutes through the electrodes that are exposed to the air and have a sub-millimeter gap. Unipolar DC pulse (25~50 kHz and 500~1000 V) or sinusoidal (50 kHz and 1 kV_{rms}) power was applied to the electrode. The discharge characteristics were investigated with an intensified charge coupled device (ICCD) and optical emission spectroscopy measurement. The results for medical treatment with this device are to be discussed.