

ELECTRODE DIAMETER EFFECT ON STRUCTURE AND CHARACTERISTICS OF DC GLOW DISCHARGE IN NITROGEN

This paper reports the results of studying the electrode diameter effect on the structure and properties of the dc glow discharge in low pressure nitrogen. We demonstrate that the dependence of the voltage required to sustain the fixed current value against the inter-electrode distance is essentially affected by the electrode diameter. With small diameter electrodes a short positive column is observed whereas the length of the positive column increases considerably with increasing the electrode diameter. The current-voltage characteristics for large diameter electrodes run in the range of higher current and lower voltage values than those for small electrodes.

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