

**04-002****Energy electron distribution in an argon low pressure hollow cathode discharge**

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The aim of the present studies was to obtain experimental observations about the main features of a dc hollow cathode discharge in order to evaluate its plasma parameters. Especial interest is focused on electron energy distribution which is very important parameter to evaluate the optimal operating conditions of the hollow cathode system for enhanced generation of excited atoms in the plasma. The hollow cathode consists of two parallel aluminum plates and the discharge gas was argon within the pressure range of 10 to 50 Pa. The discharge voltage was in the range of (300 – 900) V corresponding to discharge currents in the range of (10 – 800) mA. Plasma properties were inferred from the current-voltage characteristics of a single Langmuir probe positioned at the inter-cathode space. The electron energy distribution was obtained by using the Druyvesteyn method for different values of the gas pressure and inter-cathode distance.