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Measurement of Plasma Parameters of Argon DC Discharge Plasma by Mean of Double Electric Probe

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Electrical double probe measurement is one of the techniques used to find plasma parameters. Plasma parameters which electrical double probe can determine are electron temperature and electron density. Plasma parameters can be extracted from I-V characteristic graph of double probe which is inserted inside plasma. A program which is responsible for all calculations and control are written in Labview 2013 environment. The program will collect current and voltage data from HP4140B and automatically analyze for plasma parameters. The experiments was held in pure argon plasma in 0.20 torr of pressure and 25.5, 27.5 and 30.0 mA of discharge current while the distance between generating plasma electrode is 7 cm. The double probe results show that electron temperature remains constant at 1 eV while electron density directly varies to discharge current in the range of 4×10^{9} –6×10^{9} cm^{-3}. The comparison between double probe and single probe results shows that relative discrepancy of electron temperature and electron density are 16.55% and 26.42% respectively

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