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Low-pressure plasma discharge of $Ar/N_2/CO_2$ ternary mixture[1]
GERARDO GARCIA-COSIO, Facultad de Ciencias, UNAM, MANUELA CALIXTO-RODRIGUEZ, HORACIO MARTINEZ, Instituto de Ciencias Fisicas, UNAM — A low-pressure DC plasma discharge sustained in a 1.6%Ar-2.7%N_2-95.3%CO_2 ternary mixture is studied. This plasma was generated in the total pressure range of 0.5 to 8.7 Torr, power of 6.3 W and with 12 l/min flow rate of gases. The diagnostic has been made by optical emission spectroscopy (OES) using a spectrometer and the determination of electron temperature was obtained by the measurements with a Langmuir double Probe. The species observed in the plasma mixture were CO_2, CO_2^+, CN, CO, CO^+, O_2, O_2^+, N_2, N_2^+, NO, C^+, Ar, and Ar^+. The electron temperature was found to be of 10.63 eV, and the ion density in the order of $10^{10}cm^{-3}$.

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